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Testing a Goal-Orientation Model of Antecedents to Career Calling

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Abstract

The dual-process framework proposes that there are two main orientations that affect goal development and management. We examined this framework as an explanatory model for the development of career calling, using a sample of young adults ($N=213$, M_{age} 19.9 years). The model included goal-orientation (assimilation and accommodation) as distal, trait-based characteristics influencing goal approach (engagement and disengagement), which, in turn, influence the development of a calling (an important, domain-specific goal) and calling-related strategies (goal-implementation actions). The model was largely supported: assimilation related positively to engagement and negatively to disengagement. Engagement related positively to calling and strategies, and engagement and disengagement mediated between assimilation and calling, explaining 45% of the variance in calling. Few studies have tested antecedents to career calling, meaning little research has focused on its development. This study illustrates a potential explanation for the development of a calling based on goal-setting and self-regulation approaches.

Keywords: career calling; career strategies; dual-process framework; assimilation; accommodation; goal engagement; goal disengagement

Testing a Goal-Orientation Model of Career Calling

There has been considerable research focus over the past decade on the construct of a career calling, with many studies examining the correlates in adolescents and young adults (e.g., Hirschi, 2011; Duffy & Sedlacek, 2007). The interest in career calling and its associations has been driven by a need to better understand how developing young people formulate, settle on, and pursue meaningful occupational goals; how they derive meaning from their work connections; and how calling is related to better work and life outcomes (Praskova, Creed, & Hood, 2014a). This interest has been reinforced by the outcomes of studies that suggest that holding or seeking a career calling is applicable to most young people (Duffy & Sedlacek, 2010) and largely beneficial to the developing young person (Duffy & Dik, 2013). Despite this attention to career calling, most research has investigated the correlates and outcomes of a calling and not on those aspects and situations that might contribute to the development of one (cf. Duffy & Dik, 2013). We respond to multiple calls to “investigate the potential sources of a career calling” (Duffy & Sedlacek, 2007, p. 590; see also Duffy & Dik, 2013; Galles & Lenz, 2013) by testing a goal-orientation model of career calling, in which an individual’s trait-like, goal orientation (assimilation or accommodation) leads them to adopt a particular goal approach (goal engagement or disengagement), which, in turn, influences the development of a primary career focus (or career calling) and strategies and competencies needed for success in the career domain. See Figure 1.

Career Calling

Early views of a career calling were that it was a special request from one’s god to undertake divinely-inspired tasks or commit oneself to particular life path; generally to serve others or a god (Colozzi & Colozzi, 2000). Current conceptualisations stress more secular aspects of a calling that reflect an active engagement in one’s private and professional development (Dik & Duffy, 2009). Both religious and secular perspectives consider a career

calling to be multidimensional, incorporating actions that are pro-social, altruistic, meaningful, goal-directed, socially significant, congruent with one's talents, and values-driven (Dik & Duffy, 2009; Hunter, Dik, & Banning, 2010), and to be different from work engagement, work commitment, work salience, hope, having a passion, and being in the flow, which are narrower constructs or ones that do not capture core elements, such as meaningfulness and the pro-social aspects (Praskova, Creed, & Hood, 2014b).

As definitions of a calling have included external summonses, a sense of duty, and internal drives, multiple causal factors have been proposed as antecedents to it, including irresistible, meta-physical forces, need-fulfilment related to benefitting others, and internal drives of interests and values that direct person-environment fit (Duffy & Dik, 2013). Consistent with the perspective of an external summons, religiosity is associated with purpose and meaning in career behaviours generally (Lips-Wiersma, 2002) and is seen to inspire a calling, potentially driven by context-specific support (e.g., religious community) and the feeling of comfort that comes from being "watched over" (Duffy & Lent, 2008). With regard to need-fulfilment to benefit others, presence of and a search for a pro-social orientation is related to other calling domains (e.g., search for meaningful work and external summons; Dik, Eldridge, Steger, & Duffy, 2012; Domene, 2012), pro-social work motivation (Dik et al., 2012), and self-transcendent work values (Hirschi, 2011).

A wide array of internal drives and characteristics has been suggested as contributing to the development of a calling. For example, studies that have treated calling as an outcome have implicated interest and engagement in calling-related activities, fit with others with similar orientations (cf. Dobrow, 2013), core self evaluations (Hirschi & Herrman, 2012), vocational identity, and dysfunctional career thoughts (Galles & Lenz, 2013). In longitudinal research, search for life meaning, focus on personal growth (Bott & Duffy, 2014), life

meaning, career maturity (Duffy, Manuel, Borges, & Bott, 2011), career planning¹, and decidedness (Hirschi & Herrmann, 2013) have all been identified as antecedents to holding a calling. Other variables used but not found to be antecedents include work meaning, career commitment (Duffy, Allan, Autin, & Bott, 2013), ability (Dobrow, 2013), work effort, career strategies, sense of purpose, career adaptability (Praskova, Hood, & Creed, 2014), occupational self-efficacy (Hirschi & Hermann, 2013), life satisfaction (Duffy et al., 2011), career decision self-efficacy, life meaning, and religiousness (Bott & Duffy, 2014).

Few theories have been proposed to account for the development of a career calling (Praskova, Hood, et al., 2014), which starts to emerge in, or before, adolescence and evolves over the life span (Dobrow, 2007). This is partly due to the lack of agreement regarding the construct itself, and partly related to the focus on the outcomes of having a calling, rather than on its development (Duffy & Dik, 2013). Duffy and Sedlacek (2010) linked career calling to Super's (1990) career development theory, conceptualizing calling as a person variable within Super's broader occupational self-concept construct; one that influences career decision-making and career progress. Super viewed the occupational self-concept as a product of biological processes, life experiences, and interactions with others, and considered it to reflect the view of the person in an occupational role engaging in occupational tasks. From this perspective, while everyone develops an occupational self-concept to some extent, not everyone experiences a calling (Duffy & Sedlacek, 2007). Elangovan, Pinder, and McLean (2010) suggested that a calling was predicated on satisfying a need for life meaning, which involved exploring paths and being attentive to opportunities that could develop into a calling, and being future-oriented and proactive in reducing the gap between current and future self-views. However, the relationships among these variables have not been clarified and the variables have not been assessed collectively as predictors of calling. Hall and

¹ Career planning was reciprocally related to career calling.

Chandler (2005) proposed a comprehensive career calling model, which is developmental in nature and involves proactive engagement with one's environment, self-exploration, the setting of career goals, evaluation of goal-progress, and adjustment and ongoing re-evaluation. Hall and Chandler's model has a focus on the consequences of holding a career calling, but, salient to the development of a calling, the model includes a feed-back loop from goal and progress evaluation and reflection to career calling, indicating a cyclical development of calling dependent on self- and environmental-exploration and evaluation. Praskova, Hood, et al. (2014) used this model as a basis for their longitudinal study and found that calling was associated with work effort, career strategies, life meaning, and career adaptability over time, supporting aspects of the model related to calling outcomes, but did not find any of these variables to precede a calling.

Elangovan et al.'s (2010) model and Hall and Chandler's (2005) model both reflect a goal-setting perspective. The process component of Elangovan et al.'s model focuses on reducing discrepancies between actual and ideal self-goals. Hall and Chandler suggest that individuals develop self-relevant and meaningful goals (including occupational direction) in the context of their environment and social relationships, and define a career calling as reflecting this (i.e., "as work that a person perceives as his purpose in life", p. 160). Building on Hall and Chandler's approach, Praskova and her colleagues defined a calling as a "mostly self-set, salient, higher-order, career goal, which generates meaning and purpose for the individual (and the community), and which has the potential to be strengthened (or weakened) by engaging in goal-directed, career-preparatory actions and adaptive processes aimed at meeting this goal" (Praskova et al., 2014a, p. 3). These authors proposed that career calling be considered from a goal-setting and self-regulatory perspective. From this viewpoint, individuals set tentative goals in the context of environmental influences, rewards, and person characteristics. They then implement goal achievement strategies, evaluate their goal

progress, and, where there are discrepancies between goals set and goal progress, modify their goal-directed behaviours and/or their goals to reduce the perceived discrepancies (Bandura, 1989; Carver & Scheier, 1998; Lord, Diefendorff, Schmidt, & Hall, 2010). As goal-setting and self-regulation theories are central to the understanding of human behaviour, and are the main theories in the occupational motivation domain (Vancouver & Day, 2005), we examined potentially influential antecedents to a career calling from this theoretical perspective.

Goal Orientation and Goal Approach

According to the dual-process theory of motivation (Brandtstädter & Renner, 1990; Brandtstädter & Rothermund, 2002), individuals draw on one of two key motivational orientations when they engage with goals. These orientations are assimilation (or active goal pursuit, which reflects attempts at environmental management and modification to suit the self) and accommodation (or goal adjustment, which reflects making adjustments to the self to reflect environmental demands and resources). The orientations are considered to be trait-like, and individuals will typically rely more on one approach in motivational situations. Consequently, their “dominant” orientation will affect how they set their goals, how they monitor them, and the types of behaviours and strategies they use to pursue them (Brandtstädter & Rothermund, 2002).

Individuals with an assimilation orientation focus on information that facilitates goal achievement and suppresses input that indicates a goal will be difficult to reach. These processes foster optimism regarding the strategies and resources available to them and accentuate the benefits that will accrue when the goal is achieved, which, in turn, enhances motivation for the goal. As a result, assimilators tend to view their goals as important, achievable, and not easily substituted, and tend to view themselves as being in control. On the other hand, accommodators tend to view their goals as less important, less achievable, and

more easily substituted with alternatives, and to see themselves as having less control over their situations and lives. Accommodators, thus, are prone to less optimistic thinking about achieving their goals and about the benefits that success will bring (Brandtstädter & Rothermund, 2002).

Both orientations are adaptive, but tend to be more helpful in different circumstances (e.g., assimilation is most adaptive when the goal is perceived as achievable; accommodation is most adaptive when the goal becomes unachievable), and both are protective, again across different situations (e.g., assimilation protects against premature goal disengagement; accommodation helps individuals come to terms with failure and the need for goal adjustment; Brandtstädter & Rothermund, 2002; Frazier, Newman, & Jaccard, 2007). Best results are achieved for the individual when they can switch between the orientations to suit the situation, but such flexibility is challenging as the orientations reflect long-standing and reinforced approaches (Brandtstädter & Rothermund, 2002; Kelly, Wood, & Mansell, 2013).

Consistent with the notion that the two orientations are adaptive, both assimilation and accommodation are related positively to well-being in adults (Frazier, Newman, & Jaccard, 2007; Tobin & Raymundo, 2010) and young adults (Haratsis, Creed, & Hood, 2015; Tolentino, Garcia, Restubog, Bordia, & Tang, 2013). In relation to goal-setting and achievement other than for well-being goals, the dual-process model predicts positive outcomes for assimilative strategies and actions, and less advantageous outcomes for those utilising the accommodative mode. Consistent with these predictions, higher levels of assimilation are associated with more positive attitudes regarding goal achievement (Gaudreau & Blondin, 2004; Nurmi, Salmela-Aro, & Koivisto, 2002) and career goal engagement (Haratsis, Hood, & Creed, 2015); whereas use of accommodation is associated with placing less importance on a goal, viewing goals as more easily substitutable, and goal disengagement (Haratsis, Hood, et al., 2015). There is great variability in goal progress in

young adults (Krings, Bangerter, Gomez, & Grob, 2008), and goal orientation is thought to play an important role in this (Brandtstädter, 1989; Brandtstädter & Renner, 1990).

Consistent with the dual-process perspective and evidence from experimental studies, the main outcomes of assimilation are goal engagement and striving, which reflect an increased focus on the target goal, the investment of energy and resources to achieve the goal (i.e., applying both internal resources such as effort, and marshalling external resources such as support), and the application of strategies and actions, such as resisting distractions from competing goals, that enhance the probability of goal attainment. On the other hand, the main outcome of accommodation is goal adjustment, including goal compromise and disengagement. In the case of assimilation, the discrepancies between goal standard and goal progress (or between actual and desired self) are managed by implementing self-regulatory strategies that close the gap between the current situation and the desired state; whereas, for accommodators, the gap is addressed primarily by lowering aspirations and/or reappraising the actual state more positively (Brandtstädter & Rothermund, 2002).

In the present study, we expected assimilation (the goal approach orientation) to be associated positively with goal engagement and associated negatively with goal disengagement, and expected accommodation (the goal adjustment orientation) to be associated negatively with goal engagement and associated positively with goal disengagement. As assimilation and goal engagement reflect a goal striving orientation, we expected both to be associated positively with career calling, which is a context-specific, higher order goal (Praskova, Creed, et al., 2014). Using the same premises and logic, we expected accommodation and goal disengagement to be associated negatively with career calling. Also, as goal engagement and goal disengagement reflect general attitudes and behaviours that operationalise individual orientations, we expected goal engagement and goal disengagement to mediate between assimilation and accommodation and career calling.

Goal engagement should also be associated with the development and application of context-specific, goal achievement strategies. Thus, we expected goal engagement to be associated positively with career-related strategies, which are “behaviors which may be utilized by an individual to decrease the time required for and uncertainty surrounding the attainment of important career objectives” (Gould & Penley, 1984, p. 244). In a similar vein, goal disengagement should be associated negatively with the same strategies. As a sense of calling will lead individuals to develop and act out career-related strategies and behaviours to test out and pursue their career path (Duffy & Dik, 2013; Hall & Chandler, 2005), career calling was expected to be associated positively with career-related strategies, and should mediate between the goal approach strategies of engagement and disengagement. See Figure 1. We tested our hypotheses on a sample of young adults as one of the primary tasks for this age group is to establish a career direction and develop the requisite skills to enter and survive in the adult labour market (Seiffge-Krenke & Gelhaar, 2008).

Method

Participants

Participants were 213 young adults recruited from a 1st-year introductory psychology course at a single university in south-eastern Queensland, Australia. Consequently, most were psychology students, but the sample also included students enrolled in other disciplines, such as health, business, and law. The vast majority of students were Caucasian, which is typical of universities in Australia, and of the Australian population, which does not contain large ethnic minorities as do some other countries. There were 139 young women (65%) and 74 young men (35%), whose mean age was 19.9 years ($SD = 2.2$). They reported a mean of 3.9 ($SD = .6$) on a self-report measure of educational achievement (“On average, what grades did you achieve in your last year of high school?”, where 1 = *very limited achievement* and 5 = *very high achievement*). We also assessed self-reported income level as a proxy for socio-

economic status (“How well are you managing on your present income?”, where 1 = *living comfortably on present income* and 4 = *finding it difficult on present income*). The mean for this measure was 1.8 ($SD = 0.8$).

Materials

Unless otherwise indicated, participants responded to items using a 6-point Likert type response format (1 = *strongly disagree* to 6 = *strongly agree*), with higher scores representing higher levels of the assessed construct.

Career calling. Career calling was assessed using the 15-item Career Calling Scale, which was constructed specifically for young adults (Praskova et al., 2014b). Sample items included, “It is my calling to benefit others in my future chosen career”, and, “I enjoy that my future career will be recognised in the community as important”. The authors reported high internal reliability for the scale ($\alpha = .89$) and supported validity with the use of factor analysis, distinguishing the scale from a search for calling, and finding associations in the expected direction with measures of career indecision, presence of calling, and life satisfaction. Internal reliability (alpha) with the current sample was .90.

Assimilation and accommodation. We used the 20-item Assimilation and Accommodation Scale, which was constructed specifically for young adults (Haratsis, Creed, & Hood, 2014). Assimilation was measured using the 10-item subscale (e.g., “In general, when I have to do something that’s really important to me, and it’s really difficult, I usually... feel positive that I can persist / keep working towards it”). Accommodation was measured using the 10-item subscale (e.g., “In general, when it turns out that I can’t do something that’s really important to me, I usually... work on something else instead/think about other things that I could focus on instead”). The authors reported high internal reliability ($> .90$) and supported validity by using factor analysis and finding expected correlations with measures of life satisfaction and goal adjustment. Internal reliability coefficients in the

current study were .93 and .90, respectively.

Goal engagement. We used the 8-item Optimization in Primary and Secondary Control Scale (Haase et al., 2008), which we modified slightly to be suitable for young adults when considering career development goals. The scale taps the goal engagement domains of behavioural effort (e.g., “I invest all my energy in order to have a good occupational future”) and volitional strategies (e.g., “While searching for a suitable career, I keep saying to myself that I will surely be successful”; originally, “While searching for a suitable apprenticeship...”). Haase et al. (2008) reported sound internal reliability ($\alpha = .83$ to $.85$) with high school students and post-secondary school young adults, and supported validity by finding positive correlations with a variety of career-related strategies (e.g., number of job applications). Alpha in our study was .92.

Goal disengagement. Here, we used the 4-item Disengagement Scale (Wrosch, Scheier, Miller, et al., 2003), which was modified slightly to reflect career disengagement. Sample items were: “If I have to stop pursuing an important (career) goal in my life... it’s easy for me to reduce my effort towards the (career) goal/I stay committed to the (career) goal for a long time; I can’t let it go” (the original items did not include the word “career”). Previous internal reliability has been good ($\alpha = .84$) and validity has been supported by finding positive correlations with specific questioning about goal abandonment (Wrosch, Scheier, Miller, Schultz, & Carver, 2003). Alpha in the current study was .65.

Career-related strategies. We assessed these using the 26-item Career Strategies Inventory (Gould & Penley, 1984), which taps domains such as self-presentation, creating career opportunities, career involvement, utilising career guidance, conforming to opinions of important others, and networking. Again, we modified some items so they would be suitable for young adults contemplating their career. For example, the question, “Making your boss aware of the assignments you want”, was amended to, “Making influential people aware of

jobs or work experience I want". Praskova et al. (2014a), who similarly modified the scale, found that all items loaded onto a single, higher order factor. These authors reported alphas of .92 and .93, and supported validity by finding that career-related strategies were associated positively with career effort, career adaptability, and career calling. Alpha for the 26 items with the current sample was .92.

Procedure

A questionnaire containing the above scales and demographic questions was piloted with six young adults for readability and comprehensibility and then distributed online to the students who received course credit for their participation and were eligible to go into a draw to win a \$50 voucher. The study was approved by the authors' university ethics committee. Data can be obtained by contacting the first author.

Results

The hypothesised model was tested using latent variable analysis (maximum likelihood estimation in AMOS Version 22). We created parcels to represent the latent variables for the longer scales (three parcels each for assimilation, accommodation, career engagement, career calling, and career strategies) and used the observed variables to represent the latent variable for the short scale (four observed variables for disengagement; cf. Landis, Beal, & Tesluck, 2000). To create the parcels, we conducted separate exploratory factor analyses for each scale, rank ordered items by their factor loading, and allocated individual items to one of three parcels using an item-to-construct balance approach (Hau & Marsh, 2004). We tested a measurement model to confirm that the latent variables were independent of one another and could be represented by their parcels and then assessed the hypothesised structural model represented in Figure 1. Fit was assessed using the chi-square statistic (χ^2), the normed chi-square (χ^2/df), the Comparative Fit Index (CFI), and the Root Mean-Square Error of Approximation (RMSEA). Hair, Black, Babin, and Anderson (2010) suggest that, for a

sample < 250 participants with > 12 observed variables, χ^2 is expected to be significant, and that a $\chi^2/df < 3.0$, $CFI \geq .95$, and an $RMSEA < .08$ indicate a good fit.

Measurement Model

The measurement model had good fit statistics for the six latent variables: $\chi^2(137) = 180.80$, $p = .007$, $\chi^2/df = 1.32$, $CFI = .99$, $RMSEA = .04$. There were no problematic cross-loadings, no residuals needed to be correlated, and the standardised loadings on the latent variables were all significant ($p < .001$; range .52 to .95), supporting construct validity of the scales. The correlations among the latent variables, which mirrored the bivariate correlations, are reported in Table 1.

Structural Model

As there were trivial correlations between the demographic and study variables (range $|.02|$ to $|.18|$), none was included in the model as a covariate. The hypothesised structural model (Figure 1) produced a good fit with the data: $\chi^2(142) = 198.15$, $p = .001$, $\chi^2/df = 1.40$, $CFI = .98$, and $RMSEA = .04$. There were significant paths from assimilation to engagement ($\beta = .54$, $p < .001$) and disengagement ($\beta = -.35$, $p < .001$), from accommodation to disengagement ($\beta = .23$, $p = .01$), from engagement to calling ($\beta = .54$, $p < .001$), from disengagement to calling ($\beta = -.19$, $p = .04$), and from calling to strategies ($\beta = .31$, $p < .001$). One path, from accommodation to engagement, was not significant ($\beta = -.01$, $p = .82$). This indicated: (a) that higher levels of assimilation were associated with more career engagement and less career disengagement; (b) higher levels of accommodation were associated with more career disengagement; (c) higher levels of engagement and lower levels of disengagement were associated with more career calling; and (d) higher levels of calling were associated with higher reported use of career strategies. Assimilation accounted for 29.6% of the variance in engagement; assimilation and accommodation accounted for 19.4% of the variance in disengagement; engagement and disengagement accounted for 44.8% of the variance in

calling; and calling accounted for 17.2% of the variance in strategies. See Figure 2 for this final model. We tested one, alternative reverse model (strategies → calling → goal approach → goal orientation), but this model produced a significantly poorer fit than the hypothesised model, $\chi^2_{\text{Diff}}(2) = 17.02, p < .001$.

Mediation Model

We tested two sets of mediation pathways: (a) that career engagement and disengagement mediated between assimilation and accommodation and career calling, and (b) that career calling mediated between engagement and disengagement and career strategies. From the above analyses, engagement and disengagement potentially mediated between assimilation (but not accommodation) and career calling, disengagement potentially mediated between accommodation and calling, and calling potentially mediated between engagement and disengagement and strategies.

The analysis of the structural model (above) showed that all variables were related, except for the relationship between accommodation (a predictor) and engagement (a mediator). When we tested the direct effects, the relationship between assimilation and calling was significant ($\beta = .52, p < .001$), but the direct effect between accommodation and calling was not ($\beta = .03, p = .65$). The direct effect between engagement and strategies was significant ($\beta = .38, p = .04$), but the direct effect between disengagement and strategies was not ($\beta = -.03, p = .82$). These analyses indicated that engagement and disengagement could mediate between assimilation (but not accommodation) and calling, and that career calling could mediate between engagement (but not disengagement) and strategies.

We used the AMOS bootstrapping function (1000 samples) to generate standard errors and 95% bias-corrected confidence intervals (CIs₉₅) to assess the indirect effects between assimilation and calling, and between engagement and strategies (cf. Preacher & Hayes, 2008). Mediation can be considered to be present when the CIs₉₅ of the indirect effect does

not include zero. For assimilation on calling, the CIs₉₅ were .24 and .56, indicating that engagement and disengagement mediated between assimilation and calling; as the relationship between assimilation and calling remained significant, the mediation can be considered as partial. For engagement on strategies the CIs₉₅ contained zero (.00 and .00), indicating no mediation. The total effect of assimilation on calling explained 62.5% of the variance, with 37.4% being explained by the indirect effects via the mediators. Refer Figure 2 for added direct effect pathways.

Discussion

We assessed a model of career calling, in which trait-like goal-orientation and ensuing goal approach were considered as antecedents to career calling and the strategies that are implemented to progress career development using a sample of young adults. While there has been an expansion of the research examining the outcomes of career calling, few studies have proposed or tested models that might explain the development of a calling. As having a career calling is associated largely with positive outcomes for the individual (Duffy & Dik, 2013), understanding how a calling develops, and how it might be fostered, is an important task for researchers in the career area.

First, and consistent with the dual-process model, young adults who reported higher levels of assimilation also reported higher levels of goal engagement and lower levels of goal disengagement, and those who reported higher levels of accommodation reported higher levels of disengagement. These results suggest that when young adults are engaging with their career development they adopt different approaches to reduce perceived discrepancies between their current and desired career situation depending on their goal orientation. An assimilative orientation stimulates optimising, corrective, and preventative motivations that facilitate self-enhancement and goal progress; whereas, accommodation fuels the adjustment

of aspirations and shifting one's focus away from initial ambitions (Brandtstädter & Rothermund, 2002).

Second, and consistent with the dual-process proposition that assimilation fosters personal development and actualisation (Brandtstädter & Rothermund, 2002), assimilation (but not accommodation) had a direct, positive relationship with career calling, and was indirectly related to calling via elevated engagement and reduced disengagement. This is a significant finding, as it highlights potentially important antecedents to the identification and development of a calling. Assimilators optimise their goal pursuit potential by developing personal and social resources, acquiring skills and knowledge, and being future-focused; they develop corrective competencies by purposefully modifying environmental- and self-limitations; and they are preventative and contingency focused, which stimulates alternative pathways to achieving their desired goal state (Brandtstädter & Rothermund, 2002). Many of the antecedents previously identified in the literature for career calling are consistent with this goal pursuit perspective, for example, related to developing personal resources such as career interests and engagement with like-minded others (cf. Dobrow, 2013), skills development (e.g., focus on personal growth; Bott & Duffy), being future orientated (e.g., search for life meaning; Bott & Duffy, 2014), expressing agentic competencies (e.g., holding fewer dysfunctional career thoughts; Galles & Lenz 2013), and being contingency aware (e.g., career planning; Hirschi & Hermann, 2013).

These assimilative goal pursuit domains and approaches reflect general meta-competencies, which are capacities that facilitate the development of other, salient competencies and skills (Briscoe & Hall, 1999). Hall and Chandler (2005) point to two meta-competencies critical for the development and expression of a career calling: identity awareness and adaptability, which reflect the individual's search for meaning and drives for need-fulfilment related to optimising person-environment fit. These two context-specific

meta-competencies are at the core of the secular explanation of a calling (Duffy & Dik, 2013), and are reflected in the broad meta-competencies articulated in the dual-process model. Identity awareness (e.g., career maturity, vocational identity; Duffy et al., 2011; Gallez & Lenz, 2013) and adaptability (e.g., core self evaluations; Hirschi & Hermann, 2013) have previously been identified as antecedents to career calling.

Third, career engagement (but not disengagement) was related directly (but not indirectly via calling) to career strategies. Calling is proposed as an antecedent to the development of strategies that further one's occupational aspirations (Hall & Chandler, 2005) and has been shown to predict them over time (Praskova, Hood, et al., 2014). Our study is consistent with this. We also expected that goal approach (career engagement and disengagement) would predict career strategies by influencing career calling. We did not find this; rather, career engagement had a direct effect on career strategies, with no support for mediation via calling. Thus, calling and engagement were both uniquely, and positively, associated with strategies and are likely to enhance career progress for the individual. Our measure of career strategies reflected a global assessment of underlying domains (e.g., self-presentation, involvement, conforming, and networking). These domains might need to be assessed individually to determine if there are specific strategies influenced by career engagement via calling. Additionally, our domains were not exhaustive, and others could be assessed. Praskova, Hood, et al. (2014), for example, found that career calling predicted later career effort, which is a domain not well represented in our measure. Similarly, career disengagement might be associated with particular self-handicapping career strategies, which, again, were not well covered in our measure, and could be assessed in future studies.

Implications

Utilising an assimilation orientation was associated positively with career engagement and career calling and negatively with career disengagement; whereas, higher scores on

accommodation were associated with more career disengagement. Thus, fostering an assimilative approach in young adults, and helping them manage their accommodative drives, is likely to enhance their career engagement and benefit them occupationally. As assimilation and accommodation orientations reflect different ways that individuals manage perceived goal/goal progress discrepancies (i.e., environmental adjustment vs. goal adjustment to manage demands, respectively), interventions should focus on helping young people clarify their aspirations, clarify their current position and resources, clarify the gap that needs to be made up to meet their aspirations, and clarify the strategies they will need to develop and employ to reach their goals. In this way, adaptive (i.e., assimilative and goal engaging approaches) can be identified and enhanced, and self-handicapping (i.e., accommodative and goal disengaging approaches) can be acknowledged and dealt with. Enhancing assimilation and goal engagement, while at the same time managing accommodative and goal disengagement tendencies, will assist young adults to increase their occupational focus and clarify occupational direction; that is, clarify and develop their career calling. This is important, as the empirical evidence and theory suggest that clarifying and fostering a career calling brings many benefits for young people, including giving a sense of direction and meaning, consolidating their identity, providing an optimistic future focus, directing their energies, and contributing to improved well-being (Duffy & Dik, 2013; Praskova, Creed, et al., 2014a; Praskova, Hood, et al., 2014).

The basis for such interventions is available. *Goal-setting* interventions (e.g., Morisano, Hirsh, Peterson, Pihl, & Shore, 2010) provide structured experiences so that participants explore ideal futures, reflect on their current resources for overcoming barriers to reaching these ideal positions, and develop sub-goals and timelines so that they can monitor their progress and benefit from feedback. There is considerable evidence, for example, that explicitly stating a goal improves commitment, effort, and performance (cf. Latham & Locke,

2007). *Goal-striving* interventions (e.g., Clarke, Oades, Crowe, & Deane, 2006) have content that overlaps with goal-setting interventions, but have a particular focus on identifying and solving perceived internal and external barriers and enhancing motivation by evaluating progress. For example here, formal goal monitoring strategies can enhance positive views of the future and improve individual satisfaction (cf. Snyder, 2000). Finally, recent experimental research has shown that assimilation can be triggered by having participants focus on their action resources (e.g., feelings of control, self-efficacy), which themselves can be promoted (Leipold, Bermeitinger, Greve, Meyer, Arnold, & Pielniok, 2014). For example here, priming goal striving and inducing feelings of control strengthen assimilation (Clarke et al., 2006).

Limitations and Future Research

Regarding future research, having confirmed these plausible, theory-driven relationships cross-sectionally, future studies need to test the relationships longitudinally so that stronger causal statements can be made. The main relationship to be tested over time is between trait-like orientation (assimilation and accommodation) and career calling, as orientation is the important, distal variable in the model likely to be an early influence on the development of a calling. Additionally, understanding the types of career engagement most likely to foster a career calling, and the types of accommodation most likely to self-handicap regarding a calling, will inform the career development area generally, provide insight into the antecedents of a calling, and inform interventions. We found a negative relationship between disengagement and career calling; yet, both disengagement and engagement are considered adaptive in the dual-process model and to be positively associated with well-being (Brandtstädter & Renner, 1990). If disengagement is to function similarly for attitudes and actions to the way it functions for affect, future research needs to assess when disengagement is functional for career progress. Finally, our sample was largely middle-class and

Westernised, and assimilation and accommodation might not function in the same way for other groups of young adults. For example, lower socio-economic young adults who do not have the same personal and social resources to draw on might rely more on accommodative approaches and strategies, and non-Western young adults who rely on in-group referencing (Kitayama & Uchida, 2005) might be more likely to accommodate to the demands of others than develop and assert assimilative approaches. Assimilation and accommodation also might operate differently in younger, adolescent and pre-adolescent, groups (e.g., when parental resources and encouragement might be more influential), and future researchers need to assess the effects of these goal orientations in other populations. Incorporating measures from significant others (e.g., parents, peers, and teachers) will contribute to a better understanding of the development of a career calling, and potentially reduce the risk of common method bias inherent when data are collected from one source.

To conclude, there are few models aimed at explaining the development and maintenance of a career calling, and little research testing the antecedents to this construct. We assessed a credible model of career development, which drew upon the dual-process model proposed by Brandtstädter and colleagues (Brandtstädter & Renner, 1990; Brandtstädter & Rothermund, 2002), and which is consistent with other mainstream goal-setting and management approaches (e.g., Bandura, 1989; Carver & Scheier, 1998) and calling models (Elangovan et al., 2010; Hall & Chandler, 2005). This model explained almost half of the variance in career calling, incorporated both inherited components of the self (via assimilation and accommodation) and environmental influences of these components (via the development and expression of engagement and disengagement approaches), and showed that dual-process-model variables were associated with operationalizing a career calling (via career strategies). Additionally, the model is useful as it offers mechanisms by which career calling and strategies are developed and managed (i.e., via the management of goal/goal progress

discrepancies), offers opportunities for interventions that seek to enhance career focus and calling, and provides simple assessment tools for determining individual orientations.

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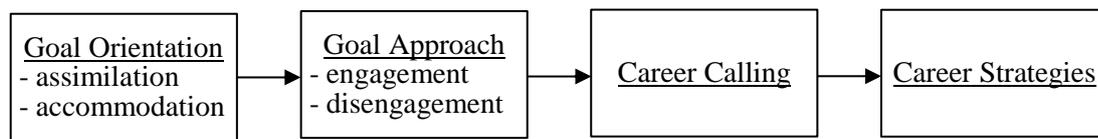


Figure 1. Hypothesised antecedents and consequences to a career calling.

Table 1

Summary Data, Bivariate Correlations (below Diagonal), and Latent Variable Correlations (above Diagonal);

N = 213

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Assimilation	44.52	7.56	-	-.12	.55***	-.36***	.50***	.24**
2. Accommodation	36.39	7.74	-.11	-	-.12	.29**	-.03	-.15
3. Career engagement	35.45	5.87	.52***	-.11	-	-.60***	.65***	.49***
4. Career disengagement	12.58	2.89	-.28***	.23**	-.47***	-	-.52***	-.24***
5. Career calling	65.54	10.54	.46***	-.03	.60***	-.39***	-	.42***
6. Career strategies	102.31	15.77	.22**	-.14*	.44***	-.18**	.39***	-
7. Age	19.89	2.16	.10	-.03	.13	-.17*	.08	.18*
8. Education	3.98	.63	.03	-.03	.07	-.05	-.04	-.06
9. Income level	1.79	.78	-.14*	-.08	-.09	-.02	-.05	-.02
10. Gender	-	-	-.08	-.11	-.10	.06	-.18**	.08

* $p < .05$; ** $p < .01$, *** $p < .001$

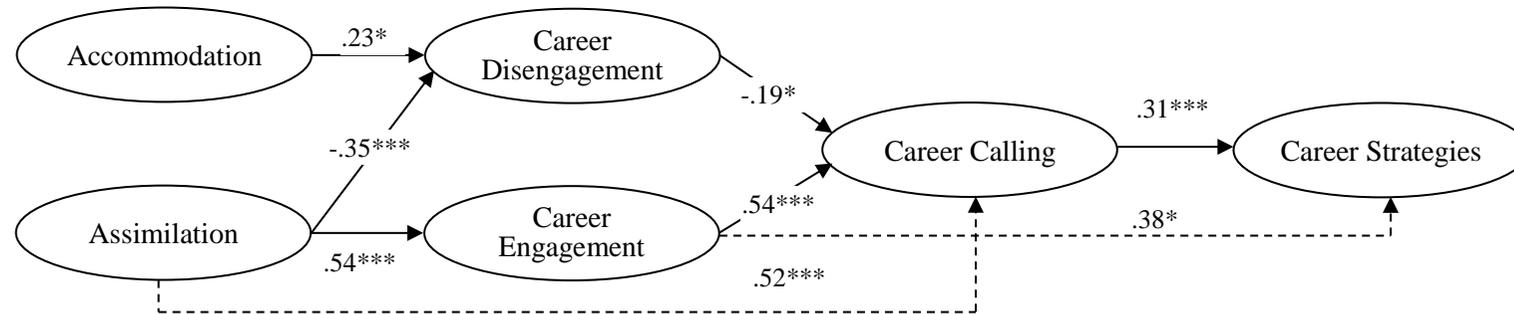


Figure 2. Full lines represent pathways from analysis of structural model; dashed lines represent direct effects identified when testing mediation pathways. Standardised regression weights are reported. The non-significant pathway between accommodation and career engagement not included to reduce clutter in figure. * $p < .05$, *** $p < .001$.