

**The Effects of Coachee Personality and Goal Orientation on Performance Improvement
Following Coaching: A Controlled Field Experiment**

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Abstract

This study presents a field experiment to test the question: What are the individual characteristics that influence whether coaching is beneficial for people's performance. We focus our attention on the Big Five personality traits, core self-evaluations and goal orientation. Using a control group for comparison, coaching was provided to a sample of working adults ($N = 84$) and both self-ratings and supervisor-ratings of performance ($N = 74$) were measured over three time points. Our analysis indicates that individuals high in Openness and avoid goal orientation and low in core self-evaluations benefit the most from coaching. We contribute to the literatures on coaching effectiveness and the wider learning and development literatures by providing an empirically robust examination of the interaction between individual differences and coaching and the subsequent impact on performance. Furthermore, our findings suggest that coaching may be an effective development technique for individuals who tend to perform less well in other forms of instructional learning due to their individual characteristics.

Keywords: Coaching; Coaching Effectiveness; Learning and Performance; Attribute-Treatment Interactions

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Following Coaching: A Controlled Field Experiment

What are the individual characteristics that influence whether coaching is beneficial for people's performance? If we understood the answer to this question, then coaches, learning and development specialists, human resource managers and coachees themselves, would be able to make a more informed decision about how effective coaching should be designed and who should receive coaching as part of their development, providing a greater potential return on learning investment in organizations. The role of individual differences in learning and development at work has typically been examined around *attribute-treatment interaction* (ATI) theoretical mechanisms, which propose that the individual differences of learners will influence the outcomes from specific development interventions (Cullen, Muros, Rasch & Sackett, 2013). To date, with the exception of a handful of studies (De Haan, Grant, Burger & Eriksson, 2016; Jones, Woods & Hutchinson, 2014; Stewart, Palmer, Wilkin & Kerrin, 2008), the coaching literature has largely neglected the study of coachee individual differences in relation to coaching effectiveness. Our study contributes to our understanding of the factors influencing the effectiveness of coaching, by utilizing a rigorous research design to test whether coachee characteristics interact with coaching and subsequently impact performance change. In doing so, we respond to calls for coaching researchers to extend our theoretical understanding of coaching practice supported by empirical research (Bachkirova & Borrington, 2018; Jones & Bozer, 2018). In focusing on the attribute-treatment interactions for coachee characteristics and coaching, we can further our understanding of who benefits most from coaching and theorize why these effects are observed. These findings have important potential implications for the practice of coaching in relation to informing who

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coaching may be best suited for and in relation to future coaching research, which we hope can further build on our theorizing.

Workplace Coaching: Definition and Outcomes

The types of coaching discussed in the academic and practice-based literature varies widely, with a wide range of labels, often utilized with little or no differentiation (Bachkirova & Borrington, 2018). The task of defining coaching is perhaps further complicated by the fact that in practice the term ‘coach’ is so loosely used (Rogers, 2016) and that the label of ‘coaching’ has become a generic signifier for terms such as ‘soft skills’ and ‘people skills’ (Western, 2012). This diversity in the definition of coaching is problematic, as construct clarity (or rigour in construct articulation) is needed in order to ‘stimulate insights into additional possible relationships, related constructs, and often related theories’ (Suddaby, 2010, p. 353). Given that recent calls for research have highlighted that in coaching, research now needs to ‘explore the mechanisms, processes and factors that determine [coaching] effectiveness and explain how the desired change following coaching occurs’ (Jones & Bozer, 2018, p. 1), construct clarity is arguably more important than ever.

In this paper, we adopt the definition that positions coaching as a one-to-one learning and development intervention that uses a collaborative, reflective, goal-focused relationship to achieve professional outcomes that are valued by the coachee, often focusing on interpersonal and intrapersonal issues (Bono, Purvanova, Towler & Peterson, 2009; Smither, 2011). The core of coaching can be described as ‘professional development through one-to-one conversation’ (De Haan, Bertie, Day & Sills, 2010, p. 607) or as ‘individually facilitated learning’ (Bachkirova, 2011, p. 7) in an organizational context. The outcomes that tend to form the focus of coaching generally relate to areas of inter personal performance (for example, developing communication skills such as seeking and listening to others’ views) and intra personal performance (for example, identifying own strengths and weaknesses)

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rather than task or process performance (Bresser & Wilson, 2016). This is likely a reflection that coaches are rarely subject-matter experts and do not provide instruction to the coachee (Connor & Pokora, 2012). Therefore, coaching more appropriately targets inter and intra personal performance that is not restricted by the nature of the job role or occupation fulfilled by the coachee.

In addition to this broad definition, we argue that coaching consists of four core components that we propose are present across coaching interventions regardless of the format, approach or context for the coaching. These core components are important to understand for two reasons. Firstly, they form part of the construct of coaching and therefore agreement on these components ensures clarity of the coaching construct, and secondly, understanding these core components is important in relation to understanding anticipated attribute-treatment interaction effects that we explore later in our paper. In the context of this paper, our proposed four core components of coaching are as follows.

Firstly, coaching is led by the coachee, therefore the coachee sets the agenda and takes centre stage in the learning relationship (Rogers 2016). This is opposed to training where the learning outcomes are dictated by the organization or the employee's manager. Whilst in some instances, coaching can be triadic in relation to the key stakeholders (coach, coachee, organization) (Bozer & Jones, 2018), even in these examples, whilst the overall aims of coaching may be influenced by the organization and the coachee's line manager, ultimately the goals are set by the coachee. Therefore, the coachee always takes the lead role during each coaching session in specifying the focus of the discussion.

Secondly, coaching is goal focused. Grant (2019) argues that 'all coaching conversations are either explicitly or implicitly goal-focused and are about helping clients enhance their self-regulatory skills to better create purposeful positive change' (p. 36). Goals are used in coaching to provide a structure and focus to the coaching conversation as opposed

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to a conversation where reflection is facilitated, however the focus of this reflection is not linked to wider goals or objectives. When considering the goal focused nature of coaching, as the coachee leads coaching, the goal is dictated by the coachee. Whilst the goal that the coachee sets may be influenced by discussions with their line manager and the needs of the organization, ultimately the selection and setting of the goal lies with the coachee. Because coaching is led by the coachee and revolves around goals that are set by the coachee, to benefit from coaching, coachees must be motivated to learn. Motivation to learn is important for all types of learning and development (Salas & Cannon-Bowers, 2001), however, previous research has shown that motivation to learn is particularly significant for coaching (Rekalde, Landeta, & Albizu, 2015; Salomaa, 2015). If the coachee is not motivated to learn, then they are unlikely to be motivated to set meaningful goals, to fully engage in the coaching conversation and are unlikely to be motivated to implement any changes to their behaviour following coaching.

Our third component is that coaches may draw upon a wide range of psychological and behavioural tools, techniques and approaches in order to work with the coachee to achieve their goals (Bono et al., 2009), therefore the coach has a great deal of flexibility to tailor the ‘content’ of the coaching intervention towards the needs of the coachee. The types of tools, techniques and approaches used by coaches can vary from those that may be considered more ‘conventional’ or familiar within an organizational setting, such as reflective questioning and discussion of psychometric results, to those that may be less familiar such as visualization, storytelling or drawing . Consequently, for coaching to be effective, it is important that the coachee is open to novel and often creative methods of learning during the coaching intervention (Stokes, 2018). If the coachee is resistant to novel or creative approaches, they are unlikely to be motivated to engage in these interventions as they may

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feel uncomfortable with these approaches or may not perceive them to be a worthwhile use of their time.

Finally, coaching enables behavioural change through raising awareness and reflection. Learning through reflection is a fundamental feature of coaching (Whitmore, 2017). To facilitate learning through reflection in coaching, a trusting relationship between the coach and coachee is essential. This trusting relationship allows the coachee the safe space needed to engage in deep self-reflection (De Haan et al., 2016). By deepening self-awareness, coachees can work on thoughts, feelings and subsequent behaviours that may have previously inhibited them or prevented them from achieving their goals. This type of challenging self-reflection can lead to coachees developing insight, becoming aware of their blind spots, challenging self-limiting beliefs, noticing previously overlooked strengths and resources and enable the coachee to focus on the future (Connor & Pokara, 2012).

In a similar way that the term ‘coaching’ has been used as an umbrella term, we would also argue that in research designs, ‘coachees’ have often been treated as a homogenous group, with little consideration as to whether there is any variation in the impact of coaching based on characteristics of the coachee. In this paper, we seek to address this gap and consequently respond to calls to deepen our understanding of factors that interact with coaching to influence coaching effectiveness (Jones & Bozer, 2018).

Our decision to explore the interaction between coachee characteristics and performance change following coaching, is influenced by research demonstrating the effects of individual differences on learning and performance outcomes from training. This research comprises of evidence of a variety of influential dispositional and motivational constructs. Among the most consistently evidenced are core self-evaluations (CSEs; Judge, Erez, Bono & Thoresen, 2003), goal orientation (Klein, Noe & Wang, 2006) and the Big Five personality factors (Barrick & Mount, 1991). Despite the extensive evidence linking learner

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characteristics to outcomes in the training literature, to date, the coaching literature contains little systematic examination of the interaction between coachee individual differences and performance change following coaching, with the exception of some emergent studies that show signs that coachee personality may be related to some coaching outcomes (De Haan et al., 2016; Jones, et al., 2014; Stewart, et al., 2008). To enhance our understanding of factors that influence the effectiveness of coaching, we examine the interaction effects of several key individual difference variables on the performance improvement effects of coaching. To frame our study, we apply the concept of attribute-treatment interaction in learning and explicate the implications of this framing in the next section.

Attribute-Treatment Interactions and Performance Change Following Coaching

Evidence of the effects of personality has led to studies examining the extent to which certain training practices are more or less effective for people with different characteristics, explanatory mechanisms referred to as *attribute-treatment interactions (ATIs)*. These mechanisms suggest that individuals possessing certain characteristics may excel in certain types of learning system (Eysenck, 1996) and highlight that learners should not be considered as a homogenous group in relation to the outcomes derived from learning activities. Evidence suggests that ATIs are present in error training (Cullen et al., 2013; discovery learning and microteaching (Eysenck, 1996); computer-delivered training (Brown, 2001); psychomotor skills training (Herold, Davis, Fedor & Parsons, 2002) and e-learning (Orvis, Brusso, Wasserman & Fisher, 2010).

Gully and Chen (2010) explain the reasoning behind the relationships between individual differences and learning outcomes. They propose that trainees actively regulate their motivation, emotion and learning processes. As such, trainees decide what to attend to and determine how much effort to devote to the learning task. They actively engage (or

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disengage) themselves from training and they are responsible for applying and transferring skills from training to the work environment. Individual differences influence these regulatory and motivational processes that determine whether trained content is learned, retained, applied and transferred. In particular, based on our review of individual differences on learning outcomes from training, we focus our study on the Big Five personality factors, core self-evaluations and goal orientation.

Coaching is an approach to individual learning and development that has particular and unique features compared to other training, learning and development interventions. In particular, as outlined earlier in our definition of coaching, coaching consists of four core components: coaching is led by the coachee; coaching is goal focused; coaching utilizes novel approaches to learning and performance improvement and performance improvement and learning is enabled through reflection. Following the logic of attribute-treatment interactional effects in learning, we propose that these core components of coaching will interact with individual regulatory and motivational processes, and personality characteristics in such a way as to lead to enhanced impact on performance for some coachees. In the following sections, we present our anticipated attribute-treatment interaction effects. We group these into two categories: 1) hypotheses that *converge* with general findings in the learning and development literature (hereafter referred to as convergent hypotheses), and 2) hypotheses that *diverge* from the literature because of the specific context afforded by coaching (hereafter referred to as divergent hypotheses).

Convergent Hypotheses

In relation to Conscientiousness, Extraversion and Openness, we predict that ATIs will converge with those previously demonstrated between these traits in the training literature. Conscientiousness consists of traits such as being careful, thorough, responsible,

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organised, achievement-oriented, hardworking and persevering (Barrick & Mount, 1991). Meta-analytic findings have consistently positively linked Conscientiousness to training outcomes (Colquitt, LePine & Noe, 2000). Extraversion consists of traits such as being sociable, gregarious, assertive, talkative and active (Barrick & Mount, 1991). The literature suggests that Extraversion positively predicts training outcomes (Dean, Conte & Blankenhorn, 2006). In the context of coaching, Stewart et al. (2008) found a significant positive correlation between Conscientiousness and self-reported coaching transfer and Jones et al. (2014) found a significant positive correlation between Extraversion and perceived coaching effectiveness. The link between learning and both Conscientiousness and Extraversion is mediated by motivation to learn which is in turn related to learning outcomes (Major, Turner & Fletcher, 2006). For example, Ng and Ahmad (2018) found that trainees who were highly extraverted had higher motivation to exert effort in enhancing work performance through learning compared to individuals low in extraversion.

Earlier we outlined that a core component of coaching is that it is led by the coachee and therefore the coachees' motivation to learn (and be coached) is likely to be important. For example, qualitative evidence from the coaching literature indicates that coaching motivation is an antecedent to coaching outcomes when assessed from the perspective of the coachee (Salomaa, 2015); the coach (Audet & Couteret, 2012); and HR professionals (Rekalde et al., 2015). In quantitative findings, MacKie (2015) found that degree of coachee readiness for coaching (which could be considered similar to motivation to learn) was a significant predictor of improved transformational leadership behaviour (as rated by self and others such as line manager, peers and subordinates) after coaching. Therefore, in line with the literature, we propose that coachees higher in conscientiousness and extraversion will improve the most following coaching.

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H1: There will be an interaction effect between coaching and participant Conscientiousness, such that the positive effect of coaching on performance will be greater for individuals high in conscientiousness (when compared to a control group).

H2: There will be an interaction effect between coaching and participant Extraversion, such that the positive effect of coaching on performance will be greater for individuals high in extraversion (when compared to a control group).

High Openness comprises traits such as being imaginative, cultured, curious, original, broad-minded, intelligent and artistically sensitive (Barrick & Mount, 1991) with meta-analytic findings positively linking Openness to learning (Barrick & Mount, 1991). In the context of coaching, Stewart et al. (2008) found a significant positive correlation between Openness and self-reported application of coaching based development. A high capacity for deep processing of information seems likely for learners high in Openness in light of their active approach to learning and willingness to try new things (Barrick & Mount, 1991). Furthermore, characteristics of curiosity, broadmindedness and creativity represented in Openness are also associated with positive attitudes to learning and an increased motivation to learn (Chamorro-Premuzic & Furnham, 2009) Findings indicate that individuals high in openness may prefer less structured approaches to learning and enjoy learning via novel techniques (Cullen et al., 2013) and are likely to perform well in a variety of training situations and contexts due to high levels of adaptability (Lievens, Harris, Van Keer & Bisqueret, 2003).

Earlier, we identified that one of the core components of coaching is that coaches may draw upon a wide range of psychological and behavioural tools, techniques and approaches in order to work with the coachee to achieve their goals. Furthermore, some of these tools, techniques or approaches may be considered unusual or novel when compared to more traditional forms of learning and development. Stokes (2018) argues that the coachees'

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openness, willingness or flexibility to embrace creative approaches or to follow novel paths in the coaching conversation is an important antecedent of effective coaching. We therefore anticipate that we will find a positive interaction effect for Openness and performance change following coaching, as individuals high in openness may embrace the novel approach to development that is a core component of coaching. By contrast, individuals low in openness may find it more difficult to adapt to or be resistant to learning through coaching.

H3: There will be an interaction effect between coaching and participant Openness, such that the positive effect of coaching on performance will be greater for individuals high in openness (when compared to a control group).

Divergent Hypotheses

In relation to Neuroticism, core-self evaluations and goal orientation, our predictions diverge from those effects traditionally observed in the training literature based on a hypothesized unique ATI for these traits and coaching.

High Neuroticism consists of traits such as anxious, depressed, angry, embarrassed, emotional, worried and insecure (Barrick & Mount, 1991). Anxiety has been found to be negatively related to motivation to learn (Colquitt et al., 2000) and associated with trainees' beliefs about whether their skills are sufficient for the task at hand and whether those skills are malleable. Furthermore, belief in one's skill adequacy will have an impact on one's decisions to exert and maintain effort and could divert attentional resources away from the training task, thus reducing the resources available for on-task effort (Martocchio, 1994).

Core self-evaluations (CSEs) are described as the fundamental evaluations individuals hold about themselves. CSEs are a broad dispositional trait that consists of four specific traits: self-esteem; generalized self-efficacy; locus of control and Emotional Stability (Neuroticism) (Judge Locke & Durham, 1997). Whilst CSE includes Neuroticism, it encompass a wider scope of elements relevant to training outcomes and therefore we include

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CSE as a separate variable in our study. Individuals with positive CSEs are naturally motivated to maintain a positive self-perception across multiple contexts (Brockner, 1988). In a learning setting, they are motivated to achieve high levels of performance by engaging in goal-directed behaviour and self-regulation, which signal that they are competent. Individuals with higher positive self-concept are also more likely to set higher goals and become more committed to fulfilling these goals (Erez & Judge, 2001). Kim, Oh, Chiaburu and Brown (2012) found that CSEs influences learning performance by boosting self-regulatory processes, and thus, generating increased levels of both motivational (e.g. acquisition of task oriented skills) and emotional control (e.g. reduction of anxiety).

Goals can be viewed as specific, cognitive forms of regulation that provide focus and direction to behaviour (Elliot & Thrash, 2002). Elliot (1999) proposed that goal orientation can be organized into a trichotomous framework: mastery, approach and avoid goals. Approach goals are focused on attaining competence in relation to others whereas avoid goals are focused on avoiding incompetence in comparison to others. Mastery goals are concerned with competence or mastery of a task (Elliot, 1999). Theory suggests goals operate in different ways to direct behaviour towards work attainment. Ferris, Rosen, Johnson, Brown, Risavy and Heller (2011) suggest that self-regulatory resources focus an individuals' behaviours towards achieving their goals and therefore improving job performance. However, the nature of the goal (either approach or avoid) places different demands on these self-regulatory resources. For example, utilization of self-regulatory resources in approach goals serve to achieve goals, whereas in the context of avoid goals, serve to block pathways that may lead to failure (Schwarz, 1990). Avoid goal orientation has also been shown to interfere with the cognitive and motivational mechanisms that promote learning by increasing anxiety and fear of failure (VandeWalle, 1997). This is further supported by Dierdorff, Surface &

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Brown (2010), who found that higher levels of learning self-efficacy mitigated the negative effects of higher avoid tendencies.

Limited research has explored these traits in the context of coaching, however Stewart et al. (2008) found that Emotional Stability was negatively correlated with self-reported application of coaching based development, therefore coachees high in neuroticism were less likely to transfer coaching. For goal orientation, Bozer, Sarros and Santora (2013) and Scriffignano (2011) found that mastery goal orientation was positively related to improved self-reported job performance and self-reported professional development focus respectively.

Whilst the limited findings from the coaching literature support a general trend in the training literature that individuals low in neuroticism, high in CSE and low in avoid goal orientation perform better in learning tasks, we anticipate an ATI effect for these traits and coaching. Whilst we expect that, in line with the training literature, individuals low in neuroticism, high in CSE and low in avoid goal orientation will experience positive changes in performance following coaching, we anticipate that individuals high in neuroticism, low in CSE and high in avoid goal orientation will actually benefit *the most* following coaching. Earlier we argued that a core component of coaching was that coaching involved learning through reflection. Reflection can be described as self-attentiveness that is motivated by curiosity or an epistemic interest in the self (Trapnell & Campbell, 1999). However, research by Trapnell and Campbell (1999) has shown that Neuroticism is associated with rumination rather than reflection. Contrary to reflection, rumination can be described as self-attentiveness that is motivated by perceived threats, losses, or injustices to the self and is associated with negative outcomes such as higher stress and reduced sleep quality (Cropley, Rudstedt, Devereux & Middleton, 2015). Similarly, research by Stein and Grant (2014) has shown that self-insight is positively related to CSE and subjective well-being. Stein and Grant (2014) suggest that for individuals high in CSE, if they discover an aspect of themselves that

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is unpleasant or difficult through reflection, they are likely to ‘metaphorically look away, reorienting their attention toward attempting to uncover causal sequences of past unpleasant events in an attempt to solve their problems or resolve their personal difficulties’ (p. 517). Consequently, the converse of this may be true for individuals low in CSE. For these individuals, reflection may mean that the discovery of an undesirable characteristic of the self may mean that they are unable to ‘look away’ and instead fixate or ruminate on the perceived threat or loss associated with this realization.

We propose that the core component of learning through reflection in coaching may directly address the tendency to ruminate rather than reflect and the potential barriers to learning from reflection associated with this, experienced by individuals high in neuroticism and low in CSE. These individuals may find it more difficult to engage in effective emotion regulation when engaging in reflective activities (Gully & Chen, 2010), leading to an unhelpful focus on threats, losses or injustices. The coach is able to effectively facilitate this reflection, using a range of tools and techniques, in order to maintain the focus on gaining insight into the self that enables learning, for example, by challenging self-limiting beliefs. Whilst the process of facilitated reflection is likely to be beneficial to learning for all coachees, the tendency of individuals high in neuroticism and low in CSE to ruminate rather than reflect may mean that they benefit the most.

As with Neuroticism and CSEs, we anticipate that the intrapersonal focus of learning through reflection in coaching will allow individuals high on avoid goal orientation to effectively explore and extend their goals beyond avoidance of failure and consequently enable greater application of self-regulatory resources to goal achievement behaviours. Our prediction is supported by the evidence from the coaching literature that indicates that coaching can lead to increased self-efficacy (Grant, 2014). Furthermore, research by Neff, Hsieh and Dejitterat (2005) found that self-compassion was negatively associated with avoid

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goal orientations, therefore individuals high in avoid goal orientation tended to demonstrate less self-compassion. Individuals who struggle to demonstrate self-compassion may be inclined to ruminate (i.e. focus on perceived threats, losses or injustices to the self) rather than reflect (i.e. focus on challenging self-limiting beliefs and noticing previously overlooked strengths). Therefore, those individuals who are high in avoid goal orientation may particularly benefit from working with a coach, as the coach can facilitate learning from reflection and directly address the negative consequence of low self-compassion by exploring the consequence of negative self-talk (Palmer & Szymanska, 2019).

For the three traits included in our divergent hypotheses, whilst we would anticipate that coachees low in Neuroticism, high in CSE and low in avoid goal orientation will benefit from coaching, because of the attribute-treatment interaction effects of coaching, we expect coachees high in Neuroticism, low in CSE and high in avoid goal orientation to benefit *the most* from coaching. Therefore, we predict the following:

H4: There will be an interaction effect between coaching and participant Neuroticism, such that the positive effect of coaching on performance will be greater for individuals high in neuroticism (when compared to a control group).

H5: There will be an interaction effect between coaching and participant core self-evaluations, such that the positive effect of coaching on performance will be greater for individuals low in core self-evaluations (when compared to a control group).

H6: There will be an interaction effect between coaching and participant avoid goal orientation, such that the positive effect of coaching on performance will be greater for individuals high in avoid goal orientation (when compared to a control group).¹

¹ Note:

Method

Research Design

A field experimental design was used for this study. Data was collected at three time points; before the intervention was provided (time one) immediately after the intervention (time two) and three months after the intervention (time three). The research was conducting within a UK non-profit distributing organization that provides housing, care and community services.

Procedure

Employees were invited to participate in the coaching intervention project and were sent an email link to the time one online survey. They were also required to provide the contact details for their supervisor, who was also sent an email link to the time one online survey. Participants were randomly assigned to either the intervention group or a control group.

Participants in the intervention group were all provided with four, one hour coaching sessions. These coaching sessions were generally spread over a monthly period, however depending on the participant's schedule and particular issues being discussed during the coaching, the interval between coaching sessions varied. The minimum gap between coaching sessions was 1 week and the maximum gap was 19 weeks (mode = 4 weeks). The coaching sessions were all conducted by telephone. Participants completed questionnaires one month after completing the final coaching session and again three months later. As the

We have not formulated specific hypotheses in relation to Agreeableness, mastery or approach goal orientation although we do include these variables in our analysis for completeness. Our decision is informed by the literature that indicates that Agreeableness does not appear to be linked to training outcomes (Woods et al., 2016). Regarding mastery and approach goal orientation, the literature on learning and development has shown positive associations of mastery and approach orientation with training outcomes (e.g. Bell & Kozlowski, 2002; Ford, Smith, Weissbein, Gully & Salas, 1998), however it is not clear if these effects would generalize to the coaching context. For example, learning objectives of coaching are typically not concerned with striving for mastery of activities, but rather to address personal challenges. However, coaching objectives are also not necessarily defined according to a specific performance standard, rather the coachee works with the coach to establish the learning goals. With respect to mastery and approach orientation, given these considerations, we do not set hypotheses of their effects.

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gap between coaching sessions varied, the timing of the completion of questionnaires was staggered based on individual participants' schedules. As each control cohort was matched to a coaching intervention group cohort, time two questionnaires were e-mailed to control group cohorts when the final coaching session was completed for their matched coaching intervention group. In our analysis, we test the gap in the time taken to complete the questionnaires (which is also indicative of the gap between coaching sessions for the coaching intervention group) as a moderator of the main effects of our intervention. There was no further contact between the participants in the control group and the research team.

Study Sample

A total of 158 participants were involved in this research project. This was split between a total of 53 participants in the treatment group who completed the coaching intervention and the questionnaires at time one and time two and 43 participants who completed the coaching intervention and the questionnaires at all three time points. For the control group, a total of 31 participants completed questionnaires at time one and time two and 27 participants completed questionnaires at all three time points. A degree of attrition was expected due to the longitudinal design of this study and the response rates for this study are still above the average of 52.7% for organizational research reported by Baruch and Holtom (2008). A total of 74 supervisors completed questionnaires at time one (46 supervisors for participants in the coaching intervention group and 28 supervisors for participants in the control group), 50 supervisors completed questionnaires at time two (31 for the coaching intervention group and 19 supervisors for the control group) and 31 supervisors completed questionnaires at time three (21 supervisors for the coaching intervention group and 10 supervisors for the control group).

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The demographics of the coaching intervention group participants who completed questionnaires at time one and time two were 71.7% female; the ethnicity was split between 88.7% white; 1.9% mixed – white and black Caribbean; 1.9% white and black African; 1.9% Indian; 1.9% Pakistani; 1.9% African and 1.9% Caribbean. For highest levels of education, 3.8% of participants had no formal qualifications; 7.5% specified secondary school (GCSE's, O levels or equivalent); 20.8% specified sixth form college, A levels or equivalent; 45.3% specified undergraduate degree and 22.6% specified postgraduate degree. The mean age of participants was 35.72 ($s.d = 11.33$), the mean number of months participants had worked in their current role was 33.26 ($s.d = 45.51$), the mean number of months participants had worked for the organization was 44.25 ($s.d = 42.53$) and the mean number of hours worked a week was 38.31 ($s.d = 4.72$).

The demographics of the control group participants who completed questionnaires at time one and time two were similar to the coaching intervention group: 64.5% were female; the ethnicity was split between 90.3% white; 3.2% mixed – white and black Caribbean; 3.2% African and 3.2% mixed – white and Chinese. For highest levels of education, 19.4% specified secondary school (GCSE's, O levels or equivalent); 19.4% specified sixth form college, A levels or equivalent; 35.5% specified undergraduate degree and 25.8% specified postgraduate degree. The mean age of control group participants was 38.61 ($s.d = 10.58$), the mean number of months participants had worked in their current role was 35.74 ($s.d = 40.69$), the mean number of months participants had worked for the organization was 60.06 ($s.d = 63.63$), and the mean number of hours worked a week was 39.26 ($s.d = 5.59$).

Participants in both the coaching intervention and control groups worked in a wide range of job roles, representative of the range of job roles fulfilled by employees across the organization, for example, Senior PR and Marketing Officer, Local Service Manager and Business Analyst.

Intervention

The coaching intervention consisted of four, one-hour long telephone coaching sessions, conducted by the first author, who has Masters and Doctoral degrees in psychology and a tertiary qualification in coaching psychology. In the field of coaching research, members of the research team often take on the role of coach (e.g. Cerni, Curtis & Colmar, 2010). Blended coaching (which includes telephone, videophone and face-to-face coaching) has been shown to be as effective as face-to-face coaching (Jones, Woods & Guillaume, 2016) and meant that the provision of coaching was not restricted based on the participants geographical location. A systematic technique based on a cognitive behavioural approach was used in all of the coaching sessions. The coaching sessions were structured utilising Whitmore's GROW (i.e. Goals, Reality, Options, Will) model (2017). The GROW model provides a basic way of structuring the coaching conversation (De Haan et al., 2010) and is one of the most popular and well recognized coaching approaches (Passmore & Gibbes, 2007). The GROW approach has been used in a number of empirical coaching studies (for example Goff, Guthrie, Goldring & Bickman, 2014; Moen & Federici, 2012).

During the first session, the participants' goals were explored and documented including agreement on how the participant could assess when they had achieved each goal. Participants set between one and four goals each (mean = 2.30; *s.d.* = 1.01). Using the framework of coaching outcomes proposed by Jones et al. (2016), the participants' goals were focused as follows: 38% were focused on addressing an affective outcome (for example 'to become more emotionally resilient and avoid taking on others problems'); 11% focused on a cognitive outcome (for example 'to gain more subject specific knowledge in communications'); 37% focused on a skill-based outcome (for example, 'to develop informal networking skills') and 11% focused on a results outcome (for example 'to create a business case for the organization to fund an external qualification').

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After discussing and setting goals, participants next selected which goal they would like to work on first. Using a combination of active listening, open questions, probing Socratic questioning (i.e. How do you know this? What do you mean by? What are you assuming?), and reflecting back, each goal was explored in detail including the participants' current 'reality' in relation to the goal, barriers that may have hindered their goal achievement in the past and the 'options' available to them to aid goal achievement. The participant would then agree on next steps that they would implement to help them work towards achieving their goal following the coaching session.

Each new coaching session would start with an update in which the participant would describe their progress on agreed action points. If action points had not been achieved then these would be explored in detail utilizing active listening, Socratic, open questioning and reflecting back. As and when the participant felt they had sufficiently explored each goal, attention would turn to a new goal and the same process would be followed.

On the fourth and final coaching session, progress to-date on all of the goals set during the first coaching session were explored and ongoing actions the participant would follow beyond the end of the coaching intervention were confirmed.

Measures

All measures were completed at time one only apart from performance which was completed at all three time points.

The Big Five aspect scales. Personality was measured using DeYoung, Quilty and Peterson's (2007) Big Five aspect scales, consisting of Neuroticism ($\alpha = .77$); Conscientiousness ($\alpha = .88$); Openness ($\alpha = .75$); Extraversion ($\alpha = .89$) and Agreeableness ($\alpha = .79$). Responses were measured on a five-point Likert scale with responses ranging from 1 (very inaccurate) to 5 (very accurate). Example items from the scale are: 'get angry easily'

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(Neuroticism); 'carry out my plans' (Conscientiousness); 'am quick to understand things' (Openness); 'make friends easily' (Extraversion) and 'respect authority' (Agreeableness).

Core self-evaluations scale (CSEs). Judge et al. (2003) 12-item scale was used to measure CSEs. Participants used a five-point Likert scale to indicate their agreement with the items on the scale. Responses ranged from 1 (strongly disagree) to 5 (strongly agree). The alpha reliability coefficient for this scale was $\alpha = .83$. An example item from the scale is 'I am confident I get the success I deserve in life'.

Goal orientation. Goal orientation was measured using Elliot and Church's (1997) achievement goal scale. This scale measured whether participants were mastery ($\alpha = .79$), approach ($\alpha = .86$) or avoid ($\alpha = .79$) goal oriented. This 18-item scale measured responses on a seven-point Likert scale with responses ranging from 1 (strongly disagree) to 7 (strongly agree). Example items from the scale are: 'I want to learn as much as possible in my current role' (mastery); 'It is important to me to do better than the other employees' (approach) and 'I worry about the possibility of getting a bad performance appraisal at work' (avoid).

Ratings of performance. Self- and supervisor-ratings of performance were gathered using an abridged version of the performance survey used in the large-scale coaching effectiveness study by Smither, London, Flautt, Vargas and Kucine (2003). Given the diverse job roles completed by participants within our sample, it was important that the performance measure captured aspects of performance that were relevant to all participants across all job roles. The items in the scale focused on interpersonal and intrapersonal aspects of performance aligned with previous definitions of issues that are appropriately developed with coaching (Bono et al., 2009). The seven items in the scale were: negotiates realistic resources to achieve results; seeks out and listens to customers' and colleagues' views to establish their concerns; involves those who are directly affected by decisions in the decision-making process; gains cooperation by explicitly addressing others' interests and concerns; accurately

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identifies own strengths and weaknesses and works to overcome weaknesses; treats people respectfully regardless of personal views, disagreements, or level and quickly adjusts in response to changing situations. This survey was completed by all participants and participants' supervisors at all three time points. Responses were measured on a five-point Likert scale with responses ranging from 1 (unsatisfactory) to 5 (outstanding). The alpha reliability coefficient for self-ratings of performance at time one was $\alpha = .73$, at time two was $\alpha = .80$ and at time three was $\alpha = .76$. The alpha reliability coefficient for supervisor-ratings of performance at time one was $\alpha = .83$, at time two was $\alpha = .90$ and at time three was $\alpha = .86$.

Analytical Approach

Multiple linear regression analysis was carried out to examine both the main effect of coaching and its interactive effect with personality traits on performance. The dependent variable was performance, measured by two indicators: self- and supervisor-rated performance. The independent variables were coaching intervention and personality traits. Coaching was entered as a dummy variable that takes the value of '1' for the coaching intervention group and '0' for the control group. Analyses were conducted separately for the Big Five, CSEs and goal orientation.

The analysis took three steps. In the first step, we carried out multiple linear regression analysis to examine whether the coaching intervention significantly increases performance for the coaching intervention group relative to the control group from time one to time two. In the second step, we repeat the above analysis examining time one to time three. Finally, we tested the proposition that the effectiveness of the coaching intervention varies across individuals with different personality traits by entering both the main effect of coaching and personality and their interactive effects in the regression, controlling for their initial performance level.

Results

Preliminary Analysis

Table 1 shows the descriptive statistics for all variables measured. Table 2 shows the effect of the coaching intervention on self and supervisor-rated performance at time two while controlling for individuals' performance at time one. As expected, performance reported at time two is significantly predicted by performance reported at time one. After adjusting for previous performance, coaching has a significant and positive effect only on self-rated performance. We also tested whether the effect of coaching is affected by the length of gap between coaching sessions and the results show that session gap has no significant main or interactive effects on performance reported at time two after performance at time one is taken into account. In addition, coaching has no significant effects on performance as rated by supervisors.

TABLES ONE & TWO ABOUT HERE

In the second step, we repeated the above analysis on the data collected at time one and time three to examine whether coaching significantly improved performance for the coaching intervention group relative to the control group over the longer experimental period. The results also presented in Table 2 show that coaching has no significant effect on either indicator of performance at time three after controlling for performance at time one. We later discuss these informative null findings in the context of the evidence base and learning processes of coaching, however due to the substantially smaller sample size at time three, the subsequent analyses and hypotheses tests reported here were based only on performance change between time one and time two. For completeness we did undertake analyses of both self- and supervisor-rated performance criteria to ensure that the null result was not masking

moderator effects of the individual difference variables. These findings are reported in full in the appendix available online.

Hypotheses Testing

Next we test our hypotheses. Table 3 reports the interactive effects of coaching and the Big Five personality traits (Conscientiousness, Extraversion, Openness, Neuroticism and Agreeableness) on performance at time two. In the first step we control for performance at time one. Then we enter personality in the second step and the interaction of personality and coaching in the third step. We first test the effect of each personality trait separately (Model 2-11) and then assess their joint effects (Model 12). Supporting hypothesis 3, the analyses show that coaching has a greater impact for individuals with higher levels of openness (when other traits are held constant), as evidenced by the significant and positive interactive effect between coaching and Openness on self-rated performance in Model 12 (see Figure 1). No significant interactive effects between coaching and other personality traits were observed, therefore hypotheses 1, 2 and 4 were not supported.

TABLE THREE & FOUR ABOUT HERE & FIGURE ONE ABOUT HERE

Following the same analytical approach, we tested the interactive effect of coaching and CSE (with its individual components) and goal orientation on self-rated performance change. The results presented in Table 4 show that individuals with lower levels of CSEs benefit more from the coaching intervention compared to those with higher levels of CSEs. The effect appears to be primarily driven by one particular aspect of CSE: locus of control. As Table 4 shows, individuals with lower values on the ‘locus of control’ scale reported significantly greater improvement in performance following the coaching session whereas the other components of CSE (self-esteem, self-efficacy and Neuroticism) do not significantly moderate the effect of coaching (see Figure 2). These results support hypothesis 5. Also

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consistent with the initial expectation, Table 5 shows that coaching has greater positive effects for those high in avoid goal orientations (see Figure 3), whereas mastery and approach goal orientations do not significantly moderate the effect of coaching on performance change. These results provide support for hypothesis 6. We carried out simple slope tests to further probe the interaction effects of personality and coaching on performance at time two with controls for performance at time one. The results show that among individuals with low levels of CSE (below one standard deviation of the mean), coaching has strongly significant and positive effects on performance change ($\beta = 0.405, p = 0.001$). In contrast, no significant effects were detected for those who with high levels of CSE (above one standard deviation of the mean, $\beta = 0.029, p = 0.804$). Similarly, significant effects of coaching was only found for those with high levels of avoid goal orientations ($\beta = 0.438, p = 0.000$) but not for those with low levels of avoid goal orientations ($\beta = -0.010, p = 0.929$).

TABLES FOUR & FIVE & FIGURES TWO & THREE ABOUT HERE

Discussion

In this paper we sought to address the question: What are the individual characteristics that influence whether coaching is beneficial for performance improvement? Our findings have implications for coaching scholarship and practice in several ways. These are explored around three themes: one, understanding the effectiveness of coaching in terms of performance improvement; two, extending our theoretical understanding of factors that influence coaching effectiveness; and three, elaborating wider implications for the design of learning and development programmes to best suit people's individual differences.

Although not the primary focus of our study, before discussing our findings around the effects of individual differences on coaching outcomes, it is important to address the null findings in some of our analyses of the impact of coaching for the intervention group

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compared to the control group, as these are relevant for exploring our significant findings. Specifically, we found that coaching had a positive impact on self-reported performance at time two (one month after coaching was completed) however there was no significant impact on supervisor-rated performance. We also found that there was no significant impact on either self or supervisor-rated performance at time three (three months after coaching was completed). These results indicate that whilst participants perceived the coaching intervention to have had a positive impact on their performance immediately following the coaching intervention, this impact on performance was not detected by the supervisor and did not appear to be sustained.

It is notable that due to attrition in our longitudinal design, power was lower in tests of effects for the supervisor ratings and time three ratings. The effect sizes for the supervisor ratings and time three self-ratings for example are positive, yet especially in the case of time three supervisor ratings, they are nevertheless weaker than for the self-ratings at time two. This question could be resolved in a future replication study. However, the implications of our findings do still raise the issue of why self-reported performance improvements following coaching were not observed by supervisors in behaviour, nor sustained over time.

Firstly, it is important to consider our null findings in respect to supervisor ratings of performance in the context of other research studies that also utilize supervisor ratings of performance as the criterion. Significant effects of coaching on supervisor ratings of performance generally appear to be found when the studies integrate the outcome measure as part of the coaching (for example a discussion of multi-source feedback, which also constitutes the research outcome, as part of the coaching process) and/or studies that do not utilize a control group for comparison. For example, Smither et al. (2003), Kochanowski et al. (2010) and MacKie (2014) all utilized pre-post control group research designs and reported significant effects of coaching on supervisor ratings of performance following

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coaching, where a discussion of the rating of performance was the focus of the coaching sessions. Luthans and Peterson (1993) also integrated their outcome measure as part of the coaching process and reported a significant increase in supervisor ratings of performance, however did not utilize a control group for comparison². Conversely, examples of studies that did not integrate the outcome measure as part of the coaching (as was the case in our study), did not find a significant increase in supervisor ratings of performance, both when pre-post-test (Bozer, Joo & Santora, 2015) and control group (Blazar & Kraft, 2015) research designs were utilized.

These discrepancies in findings highlight two important points. Firstly, the literature suggests that coaching does not impact on changes in performance that can be detected by others (such as the coachee's supervisor) when the coaching intervention does not involve the direct discussion of performance feedback that also forms the outcome measure. Secondly, as with the Luthans and Peterson (1993) study, when comparing the pre and post supervisor ratings of performance in our study, a significant increase was detected, however, this increase was not significant when compared to the control group. This highlights the absolute necessity of utilizing a control group design in intervention-based research.

A further consideration in relation to the null findings in respect of supervisor ratings of performance, is that our sample consisted of participants working in a diverse range of job roles. As such it is likely that there will be a degree of difference in the closeness of the working relationship between the participant and supervisor, as would be expected in a normal work environment. Our null findings in respect to the supervisor ratings of performance could be highlighting that in our sample, participants did not work sufficiently closely enough with their supervisors for the supervisors to detect the changes in performance

In relation to these studies that detected significant effects of coaching on others ratings of performance, an important point to note is that with the exception of the Smither et al. (2003) study which had a very large sample ($n = 1,361$) all of the other studies consisted of small samples (Kochanowski et al., (2010) $n = 30$; Mackie (2014) $n = 31$; Luthans & Peterson (1993) $n = 20$).²

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reported by the participants following coaching. The low correlation between self and supervisor ratings of performance adds validity to this potential explanation. As our study was set in the field and is representative of an average working environment, we suggest that this null finding highlights an important area of further exploration. Organizations utilizing coaching as a method of learning and development will often look to supervisors of the recipients of coaching to provide feedback on the progress and impact of the coaching intervention (Jones & Underhill, 2019). Our findings highlight the potential limitations in the supervisor as a source of evaluative feedback on the progress of coaching that is worthy of further exploration.

Our null finding in respect of the sustained impact on self-ratings of performance is particularly surprising given that it is potentially presumed by coaching practitioners that the very nature of coaching lends itself to application in actual work activity. For example, by discussing development in the context of the coachee's work, coaching may be considered a high fidelity form of learning intervention (Jones et al., 2016). Whilst our finding may suggest that coaching does not have benefits beyond perceptions of own performance enhancement immediately following the end of the coaching intervention, our findings may also be highlighting the need to understand conditions of coaching transfer. Studies of training transfer do highlight the role of work design and environmental factors that influence whether learning is applied in practice (e.g. Beier & Kanfer, 2009). Our finding therefore raises the potential need for a model of *coaching transfer* that sets out and clarifies the conditions that promote the implementation of new learning or performance strategies in day-to-day working. The potential gap between self-perceived improvement in performance, and transfer to the extent that the improvement is visible to supervisors, is a possible explanation for the pattern of our findings. Moreover, lack of opportunity to transfer this learning would

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also likely lead to learning decay (Arthur, Bennett, Stanush & McNelly, 1998), impacting on sustained performance improvement in our data from time three.

Attribute Treatment Effects in Coaching

We proposed that the interaction between individual characteristics and performance change following coaching can be explained by the presence of attribute-treatment interactions (ATIs). ATIs suggest that individuals possessing certain characteristics may excel in certain types of learning system (Eysenck, 1996) and highlight that learners should not be considered as a homogenous group in relation to the outcomes derived from learning activities (Cullen et al., 2013). This is because individuals regulate motivation, emotion and learning processes and therefore there is variation in what the individuals attend to and how much effort they devote to a task (Gully & Chen, 2010). We argued that our proposed core components of coaching interact with the regulatory and motivational processes and personality characteristics, which will lead to a greater change in performance following coaching for some coachees.

We had predicted (hypothesis 3) that coachees who were high in openness would experience a greater change in performance following coaching as individuals high in openness tend to prefer and are open to novel learning techniques (Chamorro-Premuzix & Furnham, 2008), which is particularly important in coaching as coaching involves the use of novel and creative approaches to learning. Our findings support this predication, in that we found a significant, positive interaction effect between coaching and Openness on self-rated performance at time two. Our findings suggest that those coachees who are high in openness are more likely to be open to the novel style of learning such as reflective questioning and creative coaching tools and techniques.

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Our analysis indicated that there was no significant interactive effect between coaching and Conscientiousness, Extraversion or Neuroticism. With respect to Conscientiousness and Extraversion, previous research in the training literature has indicated that both traits are important predictors of training success as individuals high in these traits tend to exhibit higher motivation to learn which means that they exert greater effort towards learning and transfer activities (Colquitt et al., 2000). We had hypothesized that these findings would translate to the coaching context, however, our study did not find a significant interaction effect for performance change following coaching and either Conscientiousness or Extraversion. It is important to note that, as is common practice in intervention studies such as ours, participants volunteered to take part in our study. Therefore, it can be assumed that all participants had a high motivation to learn. Whilst we did not test for motivation to learn directly in our study, previous theorizing has explained the attribute-treatment interactions observed in training contexts for Conscientiousness and Extraversion by the mechanisms of motivation to learn. It would be interesting to replicate our study within a sample which both directly tested motivation to learn and included participants who were less motivated to receive coaching.

With respect to Neuroticism, we had hypothesized that coaching would be particularly beneficial for individuals high in neuroticism as these individuals would particularly benefit from the facilitated reflection that forms a core component of coaching. Facilitated reflection may ensure that individuals high in neuroticism are able to effectively engage in learning through reflection rather than rumination (Trapnell & Campbell, 1999). Our findings did not support this prediction as there was no significant interaction effect for performance change following coaching and Neuroticism. Barrick and Mount (1991) have previously highlighted that findings in relation to Neuroticism may be due to a type of range restriction based on a 'selecting-out' process, whereby individuals who are highly neurotic are unable to function

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effectively within the usual work environment. In the present study, the range for Neuroticism scores confirms Barrick and Mount's (1991) explanation, in that the maximum score recorded for Neuroticism was lower than the other four traits at 3.90 (out of a potential maximum of 5). Therefore, our finding may be indicating that due to the range restriction in Neuroticism seen in a 'normal' working population, Neuroticism is not an important characteristic that influences performance change following coaching.

We had also predicted that there would be a negative interactive effect between coaching and CSEs and a positive interactive effect between coaching and avoid goal orientation. These predictions were based on our reasoning that individuals who are both low in CSEs and high in avoid goal orientation are more likely to have low emotional control, with a low belief in their ability to learn and enhance their performance (Dierdorff et al., 2010; Kozlowski & Bell, 2006; Vandewalle, 1997). However, the core components of one-to-one coaching mean that through learning through reflection facilitated by a trusting coaching relationship, the coach will be able to directly explore and readdress these beliefs, which will in turn have a positive impact on their performance following coaching. Based on an assumption that people with such traits and motivational style are likely to have benefitted *least* from development at work prior to the coaching, we proposed that they would have most to gain from the coaching sessions, and would therefore report improvements to a greater degree. Our findings support our prediction in that there was a significant, negative interactive effect between coaching and CSEs on self-rated performance and a significant, positive interactive effect between coaching and avoid goal orientation on self-rated performance. Particularly noteworthy in relation to our finding for CSEs is that our analysis indicated that a significant interaction effect was only observed for the locus of control component of CSE. Further research should seek to confirm this finding utilizing the separate measures of the constructs within CSE.

Practice Implications for Learning and Development Design

Our research offers a number of important practical implications for learning and development design. Our findings indicate that individuals who are high in openness, low in CSEs and high in avoid goal orientation are likely to benefit the most from coaching. When organizations are making decisions regarding how best to develop their personnel and for whom coaching should be offered to, it is unlikely that many organizations are currently utilizing individual differences as a tool for informing these decisions. However, our findings indicate that organizations wishing to make evidence-informed decisions on how to spend their learning and development budget could consider screening employees based on individual differences: namely, Openness, CSEs and avoid goal orientation. Particularly given that individuals who are low in CSEs and avoid goal orientation may do less well in instructional style training, it may make sound financial sense to direct these individuals towards coaching as a methodology of development rather than the training room.

Our findings also have implications for the design of effective coaching. For example, it may pay dividends for coaches to understand their coachees' individual differences before the start of a coaching intervention, in order to inform how they approach and tailor the coaching intervention. Our findings indicate that when coaching an individual who is low in openness, coaches should be cautious when introducing interventions during the coaching session that may be considered to be particularly unusual or novel. When coaching individuals who are low in openness, these coachees may need a little more time to adjust to the style of learning and development used in coaching and consequently 'build up' to more novel or creative coaching interventions.

A further implication for the design of effective coaching informed by our findings, relates to coachees who are high in avoid goal orientation and low in CSE. We theorized that

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these individuals may benefit the most from coaching as they are able to work with a coach, using facilitated reflection, in order to regulate their attentional and motivational resources in a way that positively influences their performance. For example, by engaging in effective reflection to enable learning from experience rather than engaging in rumination which may lead to higher levels of anxiety and worry. If coaches understand the goal orientation and CSE of coachees before the start of coaching, they will be better informed as to the potential areas of development the coachee may need prior to the coaching conversation. Whilst the coaching conversation would still be led by the requirements of the coachee, this additional information will help to raise the coach's awareness of potential barriers to performance change that they can then support the coachee to overcome.

Future Research

The null findings in our study for supervisor ratings of performance change and sustained self-ratings of performance change have highlighted some important implications for future research. Namely, the importance of adopting experimental research designs such as ours to isolate the impact of coaching and the need for experimental research that tests the impact of specific transfer interventions, or tests moderating effects of, for example, transfer climate or line manager support.

Our specific area of interest was in relation to the interaction effects for individual characteristics and performance change following coaching and our findings indicate some interesting interactions worthy of further exploration. Most noteworthy are the interactions of coaching, CSEs and avoid goal orientation that differ to the interactions normally observed in training contexts. Future research could explore these further with experimental, longitudinal designs that compare coaching groups with both control and training groups. In our paper, we have proposed ATIs as the explanatory mechanism for the influence of individual

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characteristics on coaching outcomes. Future research could investigate these ATIs more specifically by also assessing variables such as coachee motivation, emotion and effort in addition to individual difference variables. Research data of this nature would further advance a theory of individual differences on the effect of coaching and workplace learning.

Finally, our study utilized a very specific coaching intervention (four coaching sessions, conducted over the telephone, utilizing the GROW model). The nascent nature of coaching research means that we cannot confidently conclude from the literature that our null findings with respect to sustained performance change is not linked to these particular characteristics of our coaching intervention. Therefore, future research should seek to replicate and extend our findings by utilizing face-to-face coaching, a longer coaching intervention and different coaching approaches.

Limitations

As is common with longitudinal designs, a limitation of our study was participant attrition. Therefore, our total sample decreased from 84 participants at time two to 67 at time three. Furthermore, we were unable to collect supervisor-ratings of performance at all time points for all participants, with further attrition within this group. This procedural limitation must be considered in the appreciation of our data and results.

A further methodological limitation is the variety of job roles that were undertaken by coachees. The personal nature of coaching means that it is entirely possible to adapt coaching to meet the individual demands of coachees. However, different jobs may have somewhat different degrees of potential to apply learning and development (Jones, Woods & Zhou, 2018). This property of our sample is a result of sampling within a single organization, a strategy that simultaneously confers the advantage of controlling for organizational function and culture factors that may otherwise confound results.

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An additional potential limitation is our use of the GROW approach to structure the coaching sessions. In order to maintain as much consistency across the sessions as possible, we decided that it would be appropriate to utilize the GROW model to provide a basic structure that could be applied to all sessions for all participants. Whilst this offered a degree of consistency, which is important in a quantitative study such as ours, the use of a formulaic structure such as GROW may limit the potential impact of the coaching. For example, Bachkirova and Borrington (2018) argue that for coaches who adopt a systemic perspective, coaching practice is influenced by the subjective experience of the interaction between the coach and the coachee. Coaches subsequently make adjustments to their coaching practice in line with these experiences, beliefs, expectations and mutual sense-making. Furthermore, the local context and the wider environment become entangled in the coaching intervention. Therefore, it could be argued that an effective coach is unlikely to restrict the structure of their coaching sessions with a formulaic structure, as a framework such as GROW may be too simplistic and reductionist to accurately capture the complexity of inter and intra personal performance developed during the coaching intervention.

A final limitation to consider is that we chose to match our coaching intervention group with a control group who received no contact with the research team between completion of their questionnaires. As such, we cannot confidently conclude that the same results could not have been achieved through an increase in social contact, where participants benefitted from someone just listening to them for four hours (instead of coaching them). Consequently, future research should seek to compare a coaching intervention against a control group and a further intervention group where participants are encouraged to talk about work however do not receive any specific input from the listener.

Conclusions

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The literature has consistently demonstrated that individual differences influence outcomes from learning and development at work. The role of attribute-treatment interactions has been demonstrated to be one of the explanatory mechanisms that enables us to predict the nature of these interactions. To address the need for research to enhance our understanding of factors that influence coaching effectiveness, we conducted an experimental field study in which we address the problematic tendency for coaching research to treat coachees as a homogeneous group. By examining the interaction of coaching with individual differences of coachees across multiple time points, and compared to a control group, we found that in respect of self-rated performance, coaching was most beneficial for people high in openness, low in CSEs, and high in avoidant orientation to goals. The findings have implications for the theory and practice of coaching. Especially positive among our findings, was the prospect that coaching can be a potentially effective development technique for people who may respond less well to other forms of instructional learning; in short, people that appeared to benefit most from coaching were arguably those most in need of a form of development intervention to fit their characteristics and styles.

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