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Avoiding problems or approaching solutions?

Revealing the effects of both problem-/solution-focused questioning, and their interplay with approach/avoidance goal-orientations on coaching outcomes

Joppe Dubbeld

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Supervision: Mw. Lara Solms

Student Number: 12737119

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Abstract

Coaching research has focused on uncovering process factors within the coaching conversation that actively impact coaching success. Coaches can exert influence on coaching outcomes through their coaching questions, and by helping the coachee with setting a coaching goal. Coaching questions can either be solution- (SF) or problem-focused (PF), and coaching goals can either be approach- (APP) or avoidance-oriented (AVD). Using an experimental 2 (coaching questions: SF vs. PF) x 2 (goal orientation: APP vs. AVD) manipulation design, we investigated the effect of both coaching process factors and their interplay on coaching outcomes in an online self-coaching exercise. After testing 117 participants and analysing the data using several ANOVA's, it was found that SF coaching questions as compared to PF coaching questions led to decreases in negative affect and increases in positive affect. The type of questions asked did not affect outcomes for self-efficacy and goal-attainment. Nevertheless, participants showed increases in perceived goal-attainment scores for both SF and PF coaching question conditions. Finally, no interaction was found between the type of goal set (APP vs. AVD) and the type of coaching questions (SF vs. PF). This study contributes to the existing literature by providing evidence for the effect of SF coaching questions on affective states. Evidence related to the working elements in coaching, and the process factors within the coaching conversation, greatly informs coaching practitioners and helps them to improve the quality of coaching.

*“Coaching done well may be the most effective intervention
designed for human performance”*

Atul Gawande

Introduction

We are living in times of unprecedented change. Standing amidst a technological revolution, facing a global pandemic, and being exposed to increasingly large quantities of information has changed the character of our work (Frese, 2008; Hite & McDonalds, 2020). Such developments are not easy, as most of us devote more time and energy to work than to any other waking human activity (Landy & Conte, 2016). Having to adapt to all of these new uncertainties and changes in our environment puts pressure on daily functioning (Gleicher & Petty, 1992; Wheatley et al., 2003). Everyone struggles sometimes to overcome the challenges faced at work. How to be most successful? How to devote our energy efficiently? How to ensure our own well-being, while managing increasing amounts of pressure and demands at work? For many, answers are difficult to find.

Over the last decade, a new branch within counseling emerged named ‘coaching’ (Palmer & Whybrow, 2018). Coaching finds its roots in positive psychology, a stream within psychology that focusses on the creation of happiness through meaning positive emotion and engagement. Equally to positive psychology, coaching aims to create interventions that enhance human functioning and well-being (Seligman & Csikszentmihalyi, 2000; Linley & Harrington, 2005; Grant, 2008). Being coached helps individuals arrange their interpersonal and intrapersonal resources in order to create purposeful and positive change in life (Grant, 2020). Increasingly, coaches are being employed in both the work and private domain by clients who hope to foster optimal performance and well-being, and find ways to deal with daily challenges (Grant, 2012; Elliot & Friedman, 2007).

Over the past two decades, studies have focused on unraveling the effectiveness and process factors that impact coaching outcomes (Grant, 2016). Coaching has been associated with many proximal outcomes such as the experience of positive emotions, increases in self-insight, and positive perceptions of one’s capability to overcome challenges (Theeboom,

Beersma, & Van Vianen, 2014). Moreover, it is linked to distal outcomes such as increases in performance, goal-attainment, and well-being (Theeboom, Beersma, & Van Vianen, 2014). While research initially focused on providing evidence for the effectiveness of coaching, a need occurred for studies looking further into what exactly makes coaching work (Theeboom et al., 2014; Bozer & Jones, 2018; Grant & Atad, 2021). Especially when it comes to the actual coaching conversation and the relationship between the coach and client, factors that determine positive coaching outcomes are still relatively unknown (Theeboom et al., 2014). Unveiling these ‘active ingredients’ and shedding light on the ‘black-box’ that is the coaching relationship can be of great value for scientists and practitioners, as it helps to develop effective coaching interventions (Bozer & Jones, 2018).

In order to inform practitioners, researchers started to investigate the role of the coach in the coaching relationship (Bozer & Jones, 2018; Grant & Atad, 2021). In essence, the coach’s function is to help the client in formulating goals that capture desired outcomes, and facilitate them in the process of moving towards that outcome (Grant & Atad, 2021). This is usually done through the exploration of possible routes towards goal attainment, while reflecting on the process and making adjustments in the course of action where needed (Grant & Atad, 2021). Just like there are different ways that lead to Rome, the ways in which people set goals and overcome challenge differ per person (Grant, 2020). For coaches, guiding this process well is essential for ensuring coaching success (Bozer & Jones, 2018; Grant, 2020).

To facilitate change, coaches make use of different techniques. One of these is asking questions (Fletcher, 2012). Originally, in psychological counseling, this was done by focusing on the problem (Wachtel & Messer, 1997; Rooney & Heuvel, 2004). By getting to the core of a problem, uncovering its nature, and finding out why it has occurred in the first place, one gains insight and can let go of suppressed thoughts and emotions (Grant & Gerrard, 2020). Doing so enlightens the client and provides renewed motivation to overcome the problem

(Rooney & Heuvel, 2004). More recently, inspired by the positive psychology movement, solution-focused therapy gained popularity as a means of overcoming problems (Grant, 2012). Using a solution-focus, the client is steered into looking at one's own potential and resources to solve a problem by seeing what is working well (De Shazer et al., 1986; Grant & Cavanagh, 2014). Having a strong focus on resources can help people (re-)gain their sense of agency and belief in their capacity to achieve their goals, and make them more inclined to find new ways of overcoming their problem (Grant & Gerrard, 2020). For coaches, knowing whether to ask problem- or solution-focused questions during the coaching conversation is important information. Asking the right questions, helps the client towards goal-attainment (Grant, 2012).

Besides of asking questions, coaches also assist their client in setting a coaching goal (Grant, 2020). The process of formulating a goal to work towards, is an important part of coaching (Grant, 2020). When it comes to goal setting, people take different routes (Elliot & Harackiewicz, 1996; Anderman, Austin, & Johnson, 2002). While some people might be looking to gain positive outcomes (e.g. *"I would like to get the most out of my next project at work!"*) others are focused on avoiding negative outcomes (e.g. *"I don't want to fail this project and get fired."*). Accordingly, the type of goal one has mind can be approach- or avoidance-oriented (Elliot & Harackiewicz, 1996). For coaches, knowing which goal (approach or avoidance) works best for their client, can impact coaching success (Grant, 2020).

While both type of coaching goal and type of coaching questions likely have an impact coaching success, it is unclear whether these factors exert influence on each other too (Braunstein & Grant, 2016). This study aims to find out how questioning style, in the form of problem- (PF) and solution-focused (SF) questioning, and goal-orientation, in the form of approach (APP) and avoidance (AVD) goal-orientation interact to determine coaching outcomes. Using an experimental 2 (coaching questions: SF vs. PF) x 2 (goal-orientation: APP vs. AVD) design, we investigate the effect of both coaching process factors and their interplay

on coaching outcomes. This study informs theory and practice by helping to better understand the working elements behind the coaching process (Theeboom et al., 2014).

Theoretical Framework

Coaching definition and background

Research on coaching has evolved over the past decades (Passmore & Theeboom, 2016). Whereas initially research focused mostly on testing whether coaching worked (e.g. Theeboom et al., 2014; Jones, Woods, & Guillaume, 2014), a large share of research today is aimed at uncovering the working mechanisms behind coaching (e.g. Bozer, & Jones, 2018). Alongside these developments, more consensus has been reached surrounding coaching's definition (Passmore, Stopforth, & Lai, 2018).

The most encapsulating definition is provided by Grant (2003), who defined coaching as “a result-oriented, systematic process in which the coach facilitates the enhancement of life experience and goal-attainment in the personal and/or professional life of normal, non-clinical clients” (p. 254). From this definition, it appears that coaching is systematic, consisting of a result-oriented process (Leonard-Cross, 2010); self-directed, meaning that the coach facilitates the coachee by asking questions rather than telling them what to do (Whitmore, 2009); focused on a non-clinical population, rather than being therapeutic in nature (Grant, 2003; Theeboom et al., 2014); and applicable to multiple domains, such as personal- and working-life (Theeboom et al., 2014).

Coaching effectiveness studies were conducted in a range of different settings, such as health-, educational-, and organizational settings (Spence, Cavanagh, & Grant, 2008; Green, Grant, & Rynsaardt, 2007; Grant, Green, & Rynsaardt, 2010; Grant, Curtayne, & Burton, 2009; Yu et al., 2008). Coaching was found to relate to a range of positive outcomes, such as increased goal-accomplishment, productivity, resilience, improved professional relationships, and workplace well-being (Jones et al., 2016; Fischer & Beimers, 2009; McGuffin & Obonyo, 2010; Kombarakaran et al., 2008; Olivero, Bane, & Kopelman, 1997; Grant, Curtayne, & Burton, 2009; Grant et al., 2010; Theeboom et al., 2014; Jones, Woods, & Guillaume, 2016).

Recently, more research set out to study the process factors that lay behind these beneficial coaching outcomes (Bozer, & Jones, 2018; Grant, 2016). A lot of factors related to the coachee and the coach-coachee relationship (Lambert & Barley, 2001; McKenna & Davis, 2009). Coachee's levels of self-efficacy (i.e., the belief in one's own ability to master a task or achieve a certain outcome; Bandura, 1982) function both as antecedent and outcome of coaching effectiveness, as they predict motivation, engagement, and performance (Bozer & Jones, 2018). Coaching motivation, or "the direction, effort, intensity, and persistence that people apply to their learning-oriented activities before, during, and after training" (Salas & Canon-Bowers, 2001; p.497), also plays an important role in the coaching process (Bozer & Jones, 2018). Finally, the coachee's goal-orientation seems a relevant determinant for coaching success, as it predicts how people will approach challenges and go about increasing their competency and skills (Bozer & Jones, 2018).

With regards to the coach-coachee relationship, it becomes clear that coaches can exert influence on the success of the coaching process through the kind of coaching techniques used. Research emphasized the importance of having a goal-focus in the coaching process and a mutual agreement about action plans (Smith & Brummel, 2013; Grant, 2014; Gessnitzer & Kauffeld, 2015; De Haan et al., 2016). As such, the coach could best facilitate the reflection on goals and outcomes of prior actions, and the development and implementation of new pathways towards goal attainment (Grant & Atad, 2021). Two important tasks for coaches are asking questions, and facilitating the goal-setting process.

A coaching process factor: asking problem- or solution-focused questions

One of the essential roles of the coach in the coaching relationship is to facilitate change and guide the coachee towards attaining their goal (Grant & O'Connor, 2010). An effective coaching method that can help bring about change is asking questions. Questioning is a central

technique in coaching, and can be done in different ways (Fletcher, 2012). Coaching questions can be problem- or solution-focused.

Problem-focused approach to coaching.

Originally, psychological counseling has taken a problem-focused approach: trying to uncover all aspects of the problem, and move towards solutions after a level of understanding has been reached (Freud, 1955; Grant & Cavanagh, 2014). In coaching, asking problem-focused coaching questions is a popular and long-used method, that stems from counseling techniques like ‘root cause analysis’ (Wilson, Dell, & Anderson, 1993; Rooney & Heuvel, 2004), psychodynamic approaches (Buckley et al., 1984; Killburg, 2004), or cognitive-behavioral therapy (CBT; Beck, 1995; Grant & O’Connor, 2010).

Problematic emotions and behaviors primarily result from cognitive processes, and can be countered by understanding their origins and changing thinking patterns. Talking about one’s problem and reflecting on its causes can lead to cognitive and emotional catharsis (relief from strong inhibiting thoughts or emotions), which can result in enhanced insight (Bushman, Baumeister, & Phillips, 2001; Grant & Gerrard, 2020). Through the use of problem-focused questions, coaches can help their coachee gain insight and proceed towards goal-attainment (Grant & O’Connor, 2010; Froggat, 2006; Proudfoot et al., 2009).

Solution-focused approach in coaching.

On the flipside of the coin are the solution-focused approaches in coaching. Similar to Solution-Focused Brief Therapy (SFBT; De Shazer et al., 1986), solution-focused coaching aims to elicit thoughts in the coachee about how to best attain their goal based on their own personal resources (Grant & O’Connor, 2010). Asking solution-focused coaching questions triggers goal-orientated ways of thinking that enhance the motivation to pursue goals, boosts

one's belief in one's capacity to achieve those goals, and foster the development of routes towards goal-attainment (Grant, & Gerrard, 2020; p.3). One popular and often used solution-focused coaching method is 'the miracle question', a type of questioning in which the coachee is pushed to think about situations in which the problem has magically disappeared (De Shazer et al., 1986). In this way, hidden solutions and resources for present problems can be found (Yu, 2019). Moreover, asking 'miracle questions' has been shown to lead to an increased sense of agency and more pathway thinking (explained later), while decreasing rumination (Martin & Tesser, 1996; Grant & Gerrard, 2020).

A coaching process factor: approach and avoidance goals in coaching

Besides of asking questions, another important role for the coach is to assist in the goal-setting process (Grant & Atad, 2021). Goals, or "internal representations of desired states or outcomes" (Austin & Vancouver, 1996; p.388), are cognitive images of envisioned ideal states, and function as a source of motivation and incentive (Cochran & Tesser, 1996). Over twenty different types of goals have been specified in the literature, making it important to be specific when talking about the value of goals for coaching (Grant, 2020).

An idea that is by no means new, is that self-regulatory (goal-pursuing) behavior can be divided into two elementary different tendencies: approach- and avoidance-oriented behavior (Carver, 2006; Elliot, 2013). When pursuing a goal, one identifies a discrepancy (gap) between an existing state and an envisioned state, and is motivated to change this discrepancy by either enlarging it (avoidance) or making it smaller (approach; Carver, 2006). Whether people set an approach or avoidance goal, decides the course of action, and the type of behavior people engage in.

Meaningful differences have been found in the effects of approach and avoidance goals in psychological counseling (Wollburg & Braukhaus, 2010). Generally, more positive

outcomes are associated with setting approach goals. Firstly, avoidance goals are argued to be less capable of fostering self-efficacy (Pajares, Britner, & Valiante, 2000; Ryan & Shim, 2005). Avoidance goals, however, have been linked to more negative thoughts, less subjective well-being, and higher chances of depression (Coats et al., 1996; Wollburg & Braukhaus, 2010). Additionally, setting an avoidance goal can impede the goal progress (Elliot et al., 1997). Related to the goal-process, Wollburg and Braukhaus (2010) reported less symptomatic improvement for those who set an avoidance goal (in a group that received psychotherapy), however did not find any differences in perceived goal-attainment between the two different goals.

Even though (approach and avoidance) goal setting is a widely used and investigated topic, barely any studies have investigated their role in the coaching process (Grant, 2020). Braunstein and Grant (2016) asked participants in a coaching experiment to set either approach or avoidance goals, and investigated the role of goal-type on several outcome measures (i.e. positive/negative affect, self-efficacy, goal-progress). No effect was found on any of the outcome measures. Nonetheless, according to Braunstein and Grant (2016), the use of avoidance goals is discouraged in ‘coaching folklore’ despite the lacking evidence, because of the negative effects associated with avoidance goals in other types of counseling.

Comparing techniques: solution-focused vs. problem-focused coaching questions

As previously mentioned, coaching questions can be problem- or solution-focused. For coaches, it is important to know what questioning method is most effective at ensuring coaching success. Coaching success is a relatively vague concept, but good indicators are the affective states of the coachee, their levels of self-efficacy, and perceived goal-attainment (Jones et al., 2016).

Impact of coaching questions on affective states.

Emotions are important coaching outcomes. Experiencing positive emotions can increase learning ability, development of new skills, and openness to experience (Fredrickson & Cohn, 2008). They broaden our awareness as they build resources, they help us cope effectively with challenge, buffer against depression, foster resiliency, and improve memory (Fredrickson, 1998; Dolphin, Steinhart, & Cance, 2015; Cohn et al., 2009). Moreover, they foster health and emotional well-being (Fredrickson & Joiner, 2002). Negative emotions have undesirable effects such as increases in stress, depression, or feelings of helplessness (Kiefer, 2005). The type of questions asked during coaching can decide the course of the emotions experienced by the coachee.

Firstly, when trying to find out about the roots of a problem, coachees are asked to think about their problem (Grant, 2012). For some, this approach may lead to rumination, an unhelpful mode of thinking in which one keeps thinking about the problem over and over again without engaging in a more constructive goal-focused reflective process (Grant & Gerrard, 2020). Ruminative thoughts put positive problem-solving to a hold (Nolen-Hoeksema, 2000). Even though expressing negative thoughts might be cathartic, rumination is associated with depression and dysphoria (Spasojevic & Alloy, 2001). On the contrary, making people think about desired states is often associated with reduced negative affect, mainly because it diminishes the demoralization experienced by coachees that stems from thinking about their problem (Frank & Frank, 1993; Neipp et al., 2021). Finally, focusing on a desired situation through solution-focused questioning can elicit positive activating states such as feeling vigorous and activated, whereas thinking about negative and undesirable experiences/events is likely to elicit negative states (Theeboom et al., 2016).

Several studies have tested for the effect of problem- and solution-focused coaching questions on coachees' affective states. They found that participants who were coached with

solution-focused questions scored higher for positive affect, and scored lower for negative affect than participants in problem-focused coaching question conditions (Grant, & O'Connor, 2018; Theeboom et al., 2016; Grant, 2012; Neipp et al., 2015; Neipp et al., 2021). Based on the aforementioned arguments, it is hypothesized that:

Hypothesis 1: *SF as opposed to PF coaching questions are associated with more positive affect (H1a) and less negative affect (H1b).*

Impact of coaching questions on self-efficacy.

Self-efficacy too, is seen as an important coaching outcome (Bandura, 1995; Grant, 2012). Self-efficacious beliefs are a central aspect of personal agency, the capacity to exert control over one's own outcomes and make decisions (Bandura, 1990; Grant, 2012). Accordingly, self-efficacious people are more prone to devote effort to achieving change, and persevere longer in the face of adversity (Grant & Cavanagh, 2014). Building self-efficacy through coaching questions has great value, as personal agency is key to goal attainment and psychological well-being (Grant & Atad, 2021).

The concept of self-efficacy has gained popularity in positive-psychological literature partially because it can be developed (Bandura & Wessels, 1994). Building self-efficacy can be done in different ways (Grant & Cavanagh, 2014). Firstly, through 'vicarious experiences', observing someone with similar skills be successful in executing a task (Bandura & Wessels, 1994). Secondly, through 'imaginal experiences', imagining oneself behave effectively in a hypothetical situation (Bandura & Wessels, 1994). Focusing on personal strengths, and imagining desirable situations using the 'miracle' question therefore contribute to the development of self-efficacy (Grant, 2012). On the contrary, negative mental and physical states that are the result of negative experiences and stress can negatively affect perceived self-

efficacy, as they shape our sense of the self (Bandura, 1995). Using problem-focused coaching questions can lead to the experience of stress, as coachees think about situations in the past where their problem was present (Grant, 2012). Problem-focused questions might be less beneficial for self-efficacy enhancement, as they focus on weaknesses rather than strengths when encountering the problem.

Grant (2012) found that solution-focused coaching questions were associated with significantly higher raises in self-efficacy compared to problem-focused questions. Neipp et al. (2015) found increases in self-efficacy for both problem- and solution-focused questions, but reported higher increases for the solution-focus question condition. Similarly, Braunstein and Grant (2016) also found increases for both questioning conditions, with a larger effect of solution-focused coaching questions on self-efficacy scores. Neipp et al. (2021) however, did not find any significant effects of coaching question type on self-efficacy. Based on the aforementioned rationale and findings, we hypothesize that:

Hypothesis 2: SF as opposed to PF coaching questions are associated with higher levels of self-efficacy.

Impact of coaching questions on goal attainment.

Central to coaching is the goal-striving process (Grant, 2020). Hence, goal-attainment forms the ultimate measure for coaching effectiveness. In order to get closer to attaining their goal, coachees have to find routes and create action plans towards goal-attainment; they need to engage in pathway thinking (Grant, 2012). The action planning and expression of implementation intentions that is part of pathway thinking ('if-then plans') often leads to goal-attainment (Gollwitzer, 1999; Oettingen, Hönig, & Gollwitzer, 2000). In order to assist the coachee in pathway thinking, coaches can aim to enhance coachees' cognitive flexibility

(Neenan, 2009). Cognitive flexibility, or the ability to adapt our thinking and behavior in response to the environment, helps us to think divergently (creatively) and can empower coachees to generate a wider variety of strategies when confronted with a challenge or problem (Theeboom et al., 2016). Cognitive flexibility can be trained in coaching by asking solution-focused questions (Theeboom et al., 2016). Clapham (2003) showed that wishful thinking as is done using the ‘miracle question’, can stimulate divergent thinking and creative problem-solving. De Bono (1995) too, argued that thinking about solutions fosters the process of developing creative solutions that are not immediately obvious.

Moreover, goal-attainment might feel closer for those who focus on developing solutions in coaching as opposed to those who focus on the problem. Many problems are multi-faceted and not easily solved in a couple of coaching sessions. In the time one is busy bringing to light the root causes of a problem, no concrete solutions are formed (yet), thereby contributing to perceived goal-attainment to a lesser extent (Theeboom et al., 2016).

Several studies have tested the effect of solution- and problem-focused coaching questions goal-attainment. Many studies found increases in perceived goal-attainment after both problem- and solution-focused interventions. However, they also found that solution-focus questions related to larger increases in perceived goal-attainment (Grant, 2012; Theeboom et al., 2016; Neipp et al., 2016; Braunstein & Grant, 2016). Neipp et al. (2021) also found that both styles made people feel closer to attaining their goal, but did not find that one type of questioning outperformed the other. Generally, however, solution-focused questioning leads to bigger increases in goal-attainment than problem-focused questioning. Therefore, we expect the following:

Hypothesis 3: SF as opposed to PF coaching questions are associated with higher levels of goal-attainment.

Coaching questions and coaching goals: a possible interaction?

Changing and overcoming difficulties is not easy. It requires being aware of one's own behavior, being able to judge whether it is in line with what we want, and react to it (Bandura, 1991). This process of continuous monitoring and adapting our behavior in order to pursue our goals and interests is called self-regulation, and requires both cognitive resources and willpower (Grant & Atad, 2021). Undeniably, self-regulatory skills are essential when it comes to behavior change (Bandura, 1991). If self-regulation is done successfully, it helps people attain their goals and develop self-efficacy in a positively spiraled manner (Bandura, Freeman, & Lightsey, 1999; Gaskill, & Hoy, 2002).

Coaching in essence, is about facilitating the process of self-regulation (Grant & Atad, 2021). After initial goal setting, it is the role of the coach to guide the coachee by providing support, assisting in the development of action plans, and helping them to monitor and evaluate the progress (Grant & Atad, 2021; Neipp et al., 2016). Having their goal in mind, coachees 'measure' their behavior and compare it to a set of (usually self-created) standards. This ongoing self-regulatory process is based on feedback loops that provide either positive or negative feedback (Bandura, Freeman, & Lightsey, 1999; Gaskill, & Hoy, 2002). Based on this feedback, behavior is modified.

Since goals are central to the self-regulation process in coaching, an interplay between goals and coaching-questions is likely. Specifically, the effectiveness of solution-focused and problem-focused coaching questions might depend on the type of goal set (Braunstein & Grant, 2016). Previous findings have shown that solution-focused questions led to more positive outcomes than problem-focused coaching questions. Furthermore, avoidance goals are associated with less positive outcomes than approach goals (see previous section on "goal setting in coaching"). What would happen to coachees' levels of self-efficacy and goal-

attainment when a coach adopted a solution-focused questioning style, in order to pursue an avoidance goal?

It is expected that setting an avoidance goal will weaken the positive effect of solution-focused questions on self-efficacy. Inherently, avoidance goals are less enjoyable, more ambiguous, and more difficult to measure (Elliot, 2013). In comparison to approach goals, it is harder to define an end state with avoidance goals (Bandura & Locke, 2003). This ambiguity partially stems from the fact that many external factors can form a threat or danger to the avoidance goal (Maner & Schmidt, 2006). Being reliant on external factors reduces the sense of agency over one's own outcomes (Bandura & Locke, 2013). Moreover, even when attaining the goal, those with avoidance goals are not done yet in their process of self-regulatory behavior as new threats to their goal might come up. Being constantly on the lookout for potential impeding factors is a cognitively demanding process, and leads to negative feedback every time the goal process is disturbed (Bandura & Locke, 2003). This continuous process of looking over one's shoulder in order to maintain a gap is demotivating, and makes solutions less worthwhile (thereby slowly deteriorating self-efficacy and self-satisfaction; Bandura & Locke, 2003). Even when the focus of the coaching conversation is on finding solutions, which is argued to be self-efficacy promoting (see previous section), having an avoidance goal might weaken this effect.

The effect of solution-focused coaching questions on goal-attainment might also be negatively impacted by avoidance goals. Applying knowledge from regulatory fit theory, one could expect a 'misfit' to occur between the goal set and the approach used to achieve that goal (Higgins, 2008). The regulatory fit theory explains that "the relation between the motivational orientation of the actor and the manner in which the actor pursues the goal (e.g., the strategic means used by that actor)" impact how one feels about their actions and whether they invest effort (Cesario, Higgins, & Scholer, 2007; p.444-445). Whereas with solution-focused questioning, the aim is to find pathways to overcome a problem (approach), the aim of

avoidance goals is to avoid negative outcomes. This ‘misfit’ can distract from the type of solutions formed during coaching and reduces engagement in the regulatory process (Higgins, 2008). Therefore, it is hypothesized that:

Hypothesis 4: Avoidance goals will weaken the positive effects of solution-focused coaching questions on self-efficacy (H4a) and goal attainment (H4b).

Similarly, it could be expected that the (as opposed to solution-focused questions) less desirable effects of problem-focused questions on self-efficacy and goal-attainment might be buffered by approach goals. When focusing on problems during coaching, coachees are more likely to experience negative emotions (Grant & Gerrard, 2020). Deeply thinking about a problem can result in a negative feedback loop, triggered by ruminative thoughts (Nolen-Hoeksema, 2000; Grant & Gerrard, 2020). Having an approach goal however, coachees are more prone to recognize opportunities to overcome their problem and achieve a positive outcome (Bandura & Locke, 2003). Accordingly, they will shield themselves against potential negative feedback arising from ruminative thoughts. As self-efficacy is built by attaining positive feedback during the goal progress, thereby buffering the effect of problem-focused questions (Bandura & Locke, 2003; Grant, 2012). Based on the motivation to pursue a positive outcome, coachees are more resilient when facing adversity and pertain their effort in the regulatory process (Bandura & Locke, 2003).

Such pertained effort and resilience provide the necessary motivation to keep engaged in the process of attaining one’s goal (Li, Eschenauer, & Persaud, 2018). Having an approach goal then leads to more positive emotions than having an avoidance goal, which can counter negative emotionality and make coachees more focused on opportunities (Bandura & Locke, 2003; Fredrickson, 2001; Garland et al., 2010). Especially, focusing on an approach goal in the

regulatory process is associated with increased positive effort (in comparison to avoidance goals; Shah & Higgins, 1997). Based on the expected value of the goal, and the perceived likelihood of attaining it, those with an approach goal will attempt to accomplish the highest attainable (Wigfield, 1994; Shah & Higgins, 1997). Doing so, might compensate for the lack of solution-focus and make coachees motivated to find possible pathways towards goal-attainment. Therefore, we hypothesize that:

Hypothesis 5: Approach goals will buffer against the negative effects of problem-focused coaching on self-efficacy (H5a) and goal attainment (H5b).

Method

Design and participants

Participants in this experimental study took part in an online self-coaching exercise. To investigate the impact of solution- and problem-focused coaching questions in combination with approach and avoidance goal orientations, a 2(SF-questions/PF-questions) x 2(approach/avoidance goal-orientation) research design was used. The effects of the manipulations were tested on participant's levels of positive/negative affect, self-efficacy, and perceived goal-attainment. Approval was granted by the ethics-review board of the University of Amsterdam.

Initially, 274 participants took part in the study. In order to assess the participants for eligibility, a couple of checks were performed. Firstly, it was checked whether participants were part of the target group (i.e., employed, between 18-65 years old). Second, participants with incomplete survey responses and/or didn't complete the survey in one go were excluded ($n = 116$). Additionally, participants were screened using the emotional exhaustion subscale of the burnout inventory (UBOS; Evers et al., 2002). Those that scored in the range of the clinical population (UBOS sub-scale score > 5.20 ; $n = 2$) and therefore did not fit Grant's (2003) definition of coaching were allocated to the solution-focused questioning condition as to reduce the chance of adverse effects for participants. Later on, they were excluded from our study (Schaufeli et al., 1996; Schaufeli & Van Dierendonck, 2000).

After applying an exclusion procedure (see Appendix 1 for a CONSORT flowchart), our final sample comprised $n = 117$ participants. Within this sample, there were almost as many women ($n = 58$, 50%) as men ($n = 59$, 50%), with a mean age of 29.64 ($SD = 11.07$). The participants were randomly divided over the four conditions (see Appendix 1).

Procedure and manipulations.

Participants were recruited through word of mouth, and through online social media announcements. The study took place online using Qualtrics (<https://www.qualtrics.com>). Participation was voluntary and all data was processed anonymously. Before starting, participants completed an informed consent form. Subsequently, they provided demographic information (i.e., gender, age, profession, and years of working experience). Participants were then screened for emotional exhaustion and burnout (Schaufeli & Van Dierendonck, 2000).

To kick-off the experiment, participants were asked to think about and describe a work-related problem they were currently facing. Subsequently, they were asked to indicate on a scale from 1 (“totally not bothered”) - 10 (“very bothered”) to what extent they felt like the problem bothered them and how it negatively affected them at work or at life in general. Finally, respondents indicated on a scale from 1 (“solution not at all reached”) - 10 (“solution reached”) how close they felt to reaching a solution to their previously described problem (goal-attainment 1st time).

All participants were asked to set a goal in order to address their previously described problem. Those in the approach condition were instructed to set a goal focused on moving towards a certain outcome, event, or action which is positive, desirable, or beneficial to helping them solving their problem (Braunstein & Grant, 2016). In order to help them set the right type of goal, participants were told that they could start with: “I want to increase...”, or “I would like to be more...”. Participants allocated to the avoidance condition were instructed to set a goal that was focused on moving away from an outcome, event or action, which was negative, undesirable or detrimental to helping them solve their problem (Braunstein & Grant, 2016). In order to help them set the right type of goal, participants in this condition were told that they could start with: “It is important for me to avoid...”, “I would like to do less of...”, or “I would like to not ... anymore”.

After participants set their goal, they were randomly allocated to either the solution-focused or the problem-focused coaching question condition. In the solution-focused condition, participants answered a series of questions designed to make them think about a situation in which the solution to their problem has magically come about and made the problem disappear (i.e., the miracle question; de Shazer, 1988). These questions were for example “What is the first thing you notice when you wake up?” or “How do you feel in this situation in which the solution has magically come about?” Participants allocated to the problem-focus condition were asked to think about a situation in which the problem was very present, after which they answered a short series of questions such as “How did you behave in the situation when the problem was very present?”, and “How did other people notice that the problem was very present during this situation in the past?” The exact wording of the manipulation questions was based on previous studies (Theeboom et al., 2016; Wehr, 2010; Grant & O’Connor, 2010; Braunstein & Grant, 2016). Finally, participants were asked to fill out the measures for positive/negative affect, self-efficacy, and goal-attainment (2nd time). After filling out several manipulation-check questions, participants were thanked for their participation. Table 1 provides an overview of the whole experimental procedure (see Table 1).

Table 1. Structure and procedure of the experiment for all participants.

Process	Content
Step 1	Informed consent, demographics, UBOS measurement
Step 2	Identification and description of the problem; first measurement of goal-attainment
Step 3	Approach/avoidance goal manipulation
Step 4	SF/PF coaching question manipulation
Step 5	Measurement of dependent variables* (i.e. positive/negative affect, self-efficacy, second measurement of goal-attainment)
Step 6	Manipulation checks and end of the survey

Note: *Description and reliability of measurements and scales can be found in the ‘Measurements’ section.

Measures

The Emotional Exhaustion subscale of the Maslach burnout inventory (UBOS; Schaufeli et al., 1996) was used to measure emotional exhaustion. The eight items (e.g. ‘I feel mentally exhausted because of my work’) were answered on a 7-point Likert scale, ranging from 1 (never) - 7 (always). Cronbach alpha was $\alpha = 0.82$.

Positive and negative affect were measured with three subscales of the UWIST Mood Adjective Checklist (Matthews, Jones, & Chamberlain, 1990). Positive affect was measured using eight items of the energetic arousal scale ($\alpha = 0.88$; e.g. ‘active’) and eight items of the hedonic arousal scale ($\alpha = 0.88$; e.g. ‘cheerful’). Negative affect was measured with eight items from the tense arousal scale ($\alpha = 0.80$; e.g. ‘anxious’).

Self-efficacy was measured with the following four items based on the Core Self-Evaluations Scale ($\alpha = 0.84$) that were adapted to fit the context of the study (CSES; Judge et al., 2004): (1) “I am confident that I can solve my problem”; (2) “If I try my best, I will be able to solve my problem”; (3) “I am full of doubts about my abilities to master my problem”; (4) “I am able to handle my problem well.”

Goal-attainment was measured by asking participants the question: “Please rate how close you feel right now to reaching the goal you set based on your problem”. Participants answered on a 1 (“solution not at all reached”) -10 (“solution reached”). Several previous studies successfully incorporated a similar measure of goal-attainment (e.g. Linley et al., 2010).

The manipulation check consisted of six questions that were designed to check whether participants were manipulated correctly into the different conditions. Rating on a Likert scale from 1 (“not at all applicable”) - 7 (“completely applicable”), participants indicated whether they were asked problem- or solution-focused questions, and whether they set a goal aimed at avoiding or approaching a certain outcome.

Results

Analytical approach and test of assumptions

Factorial ANOVA's were used in order to analyze the data for hypotheses 1, 2, 4a, 5a. For hypothesis 3, 4b, and 5b, repeated measures ANOVA's were used as to best analyze the effect of the goal-attainment measure that was measured twice.

In order to comply with the ANOVA assumptions for analysis of variance we conducted a number of initial tests. First, we checked whether our data was normally distributed. Following Kozak and Piepho (2018), we depicted the distribution of the standardized residuals of our study variables in histograms in order to check for normality (see Appendix 2). Visually all histograms approached a normal distribution (Das & Imon, 2016). Regardless, to control for potential violations of the normality assumption, we applied bootstrapping in all models using 1000 iterations.

Second, in order to test for the homogeneity of the variance within our sample, Levene's tests were performed. After checking the p -values, homogeneity of variance was assumed. Only for the hedonic arousal scale a significant p -value was found ($F(3,113) = 2.826, p = .042$), indicating that homogeneity was violated. However, it was concluded that no adjustments needed to be made (Zimmerman, 2004). This decision was based on the fact that this assumption matters most for very unequal group sizes, and because Levene's test for homogeneity of variance tends to work best for large samples and not really for smaller samples (Schmider et al, 2010; Field, 2013). Additionally, ANOVA is a very robust statistical method that does a great job at ruling out for potential biases (Zimmerman, 2004).

Preliminary analysis

See table 2 for the descriptive statistics of the key study variables. Correlations among the study variables (see table 3) showed a significant relationship between self-efficacy and the first goal-

attainment measure in the problem-focus condition ($r = 0.33$). Also, significant negative correlations were found between the positive affect scores and measure of negative affect for both conditions ($r = -0.27, r = -0.57; r = -0.74, r = -0.54$). Moreover, levels of self-efficacy were found to correlate positively with the positive affect scores (energetic arousal, $r = 0.35$, and hedonic arousal, $r = 0.45$) and negatively with negative (tense arousal) affect scores ($r = -0.34$) for the solution-focused condition. In the problem condition, only a negative correlation between self-efficacy and negative affect was found ($r = -0.28$). Finally, self-efficacy correlated with goal-attainment in both conditions (PF: $r = 0.33$ (pre), $r = 0.61$ (post); SF: $r = 0.31$ (post)).

Table 2. Descriptive statistics for key study variables

	SF condition M(SD)	PF condition M(SD)
Pos. Affect (energetic)	4.97 (1.14)	4.20 (0.98)
Pos. Affect (hedonic)	5.17 (1.20)	3.80 (0.90)
Neg. Affect (tense)	2.90 (1.17)	3.80 (1.21)
Self-efficacy	3.66 (0.76)	3.52 (0.75)
Goal-Attainment (pre)	4.85 (1.85)	4.34 (2.10)
Goal-Attainment (post)	5.43 (1.77)	5.41 (1.93)

Note: $N = 117$. M and SD represent 'mean' and 'standard deviation' respectively.

Table 3. Correlations among the key study variables

	Pos. Affect (energetic)	Pos. Affect (hedonic)	Neg. Affect (tense)	Self- Efficacy	Goal-Attainment (pre)	Goal-Attainment (post)
Pos. Affect (energetic)	-	0.77**	-0.47**	0.35*	0.30*	0.25
Pos. Affect (hedonic)	0.34**	-	-0.54**	0.42**	0.45**	0.32*
Neg. Affect (tense)	-0.27*	-0.57**	-	-0.34**	-0.25	-0.26
Self-efficacy	-0.19	0.10	-0.28*	-	0.18	0.31*
Goal-Attainment (pre)	0.14	0.21	-0.22	0.33**	-	0.57**
Goal-Attainment (post)	-0.10	0.245	-0.26*	0.61**	0.69**	-

Note: $N = 117$. Correlations for PF condition ($n = 63$) are to the left and below the diagonal. Correlations for the SF condition ($n = 54$) are to the right and above the diagonal. * $p < 0.05$, ** $p < 0.01$.

Manipulation check

The results of the manipulation check showed that the manipulations were successful. Compared to participants in the PF condition ($M = 1.89, SD = 1.29$), participants in the SF condition scored higher on the degree to which they felt that the experiment prompted them to think about positive, solution-oriented situations ($M = 5.97, SD = 1.45; F(1, 115) = 258.80, p$

< 0.001). Participants in the SF condition scored lower ($M = 2.84$, $SD = 1.72$) than participants in the PF condition on the degree to which they felt that the experiment prompted them to think about a situation in which the problem was very present ($M = 6.10$, $SD = 1.07$; $F(1, 115) = 156.96$, $p < 0.001$). For the goal setting manipulation, those in the approach goal condition scored higher on the degree to which they felt that they were asked to set a goal aimed at achieving a certain positive outcome ($M = 5.55$, $SD = 1.93$) than those in the avoidance goal condition ($M = 3.46$, $SD = 2.46$; $F(1, 115) = 26.55$, $p < 0.001$). Participants in the avoidance goal condition scored higher on the degree to which they felt they were asked to set a goal aimed at avoiding a negative outcome ($M = 4.98$, $SD = 2.29$) compared to those in the approach goal condition ($M = 2.70$, $SD = 1.96$; $F(1, 115) = 33.45$, $p < 0.001$).

Hypothesis testing

Hypothesis 1 predicted that SF coaching questions would elicit higher positive affect (H1a), and lower negative affect as opposed to PF coaching questions (H1b).

In support of H1a, SF coaching questions resulted in higher positive affect scores for energetic arousal ($M = 4.97$, $SD = 1.14$) as opposed to PF questions ($M = 4.20$, $SD = 0.98$; $F(1, 113) = 15.123$, $p < .001$). Moreover, those in the SF coaching question condition scored significantly higher on hedonic arousal ($M = 5.17$, $SD = 1.20$) as opposed to those in the PF condition ($M = 3.80$, $SD = 0.91$; $F(1, 113) = 49.317$, $p < .001$).

In support of H1b, it was shown that those in the SF coaching question condition scored significantly lower for negative affect ($M = 2.90$, $SD = 1.17$) than those in the PF coaching question condition ($M = 3.80$, $SD = 1.21$; $F(1, 113) = 15.175$, $p < .001$ (see Figure 2.).

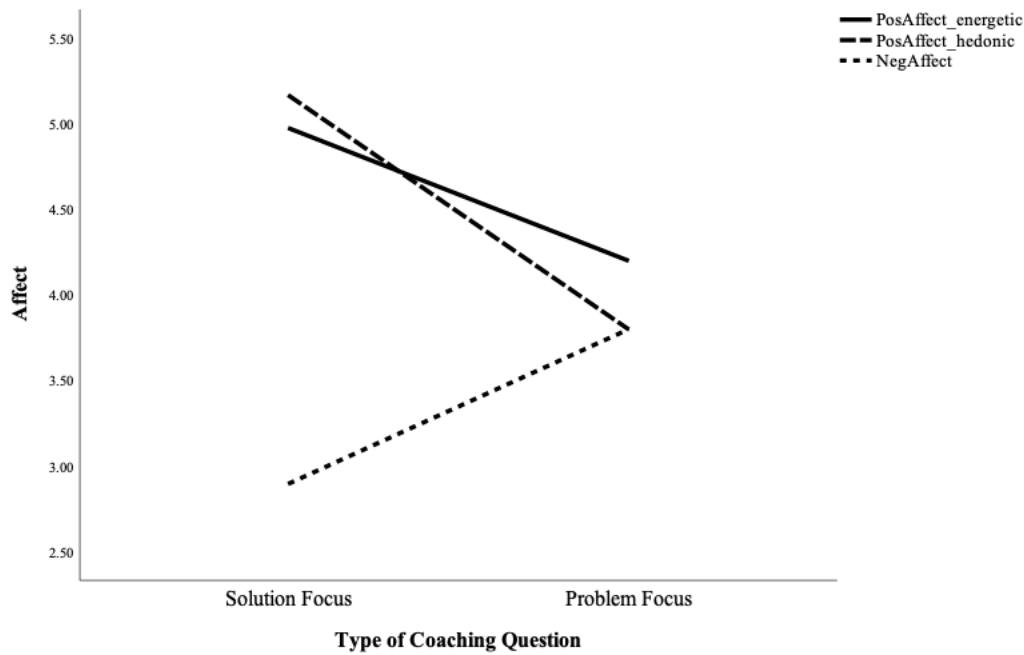


Figure 2. Effect of SF and PF coaching on measures of affect

Hypothesis 2 predicted that respondents in the SF coaching question condition would report higher levels of perceived self-efficacy after the coaching intervention as compared to those put in the PF coaching question condition. The hypothesis was not supported, as no significant differences were found for perceived levels of self-efficacy between participants in the SF coaching question condition ($M = 3.66$, $SD = 0.76$) and those in the PF coaching question condition ($M = 3.52$, $SD = 0.75$; $F(1, 113) = 0.823$, $p = .366$).

Hypothesis 3 predicted that participants in the SF condition would report stronger increases of goal-attainment after the self-coaching exercise as compared to participants in the PF condition. The results of this study do not support this hypothesis, as no interaction effect was found between time and questioning condition on goal-attainment ($F(1, 113) = 2.27$, $p = .135$). Nevertheless, there was a statistically significant main effect of time on goal-attainment ($F(1,113) = 28.17$, $p < .001$). This indicates that the online coaching experiment significantly increased perceptions of goal-attainment.

Our hypothesis 4 and 5 predicted an interaction between coaching question condition and goal condition. Specifically, it was expected that avoidance goals would weaken the positive effects of solution-focused coaching questions on self-efficacy (H4a) and goal attainment (H4b), and that approach goals would buffer against the negative effects of PF coaching questions on self-efficacy (H5a) and goal-attainment (H5b). For self-efficacy, no interaction effect of goal-type and coaching questions was found ($F(1, 113) = 0.136, p = .713, \eta^2 = 0.00$; see Figure 3a). Therefore, hypothesis 4a and 5a are not supported. For goal-attainment too, no interaction effect between goal type and coaching questions was found ($F(1,111) = 0.002, p = 0.963, \eta^2 = 0.00$; see Figure 3b). As such, hypothesis 4b and 5b were rejected.

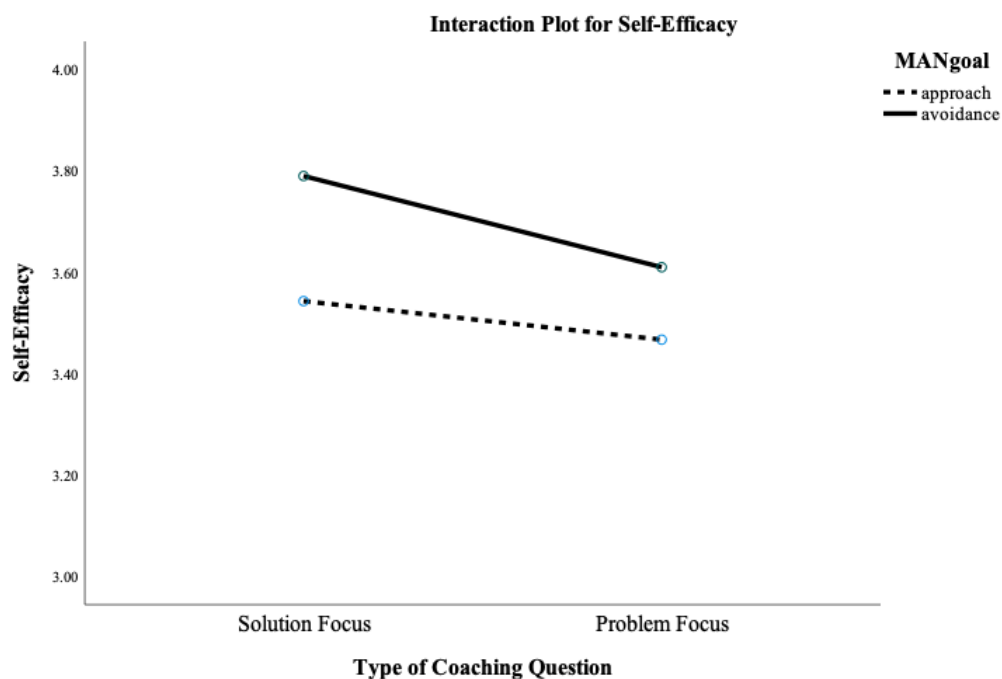


Figure 3a. Interaction plot for self-efficacy

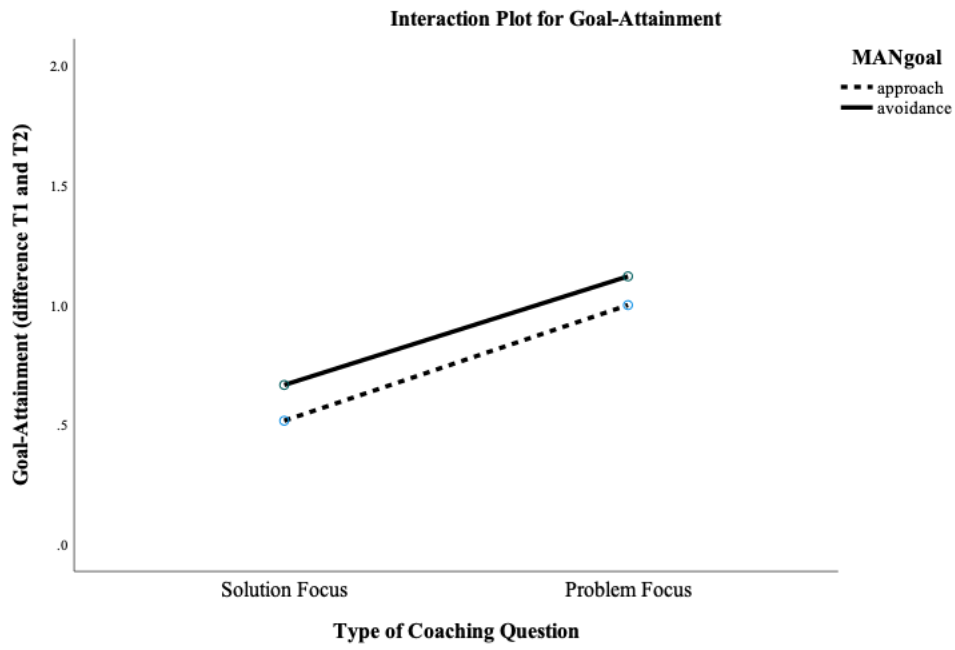


Figure 3b. Interaction plot for goal-attainment (difference score between T1 and T2).

Discussion

This study showed that SF coaching questions as compared to PF coaching questions led to decreases in negative affect and increases in positive affect. For self-efficacy and goal-attainment scores, the type of questions asked did not affect outcomes. Nevertheless, goal-attainment scores significantly increased for both questioning conditions after the intervention. Finally, no interaction effect was found for type of goal (approach vs. avoidance) and type of coaching questions (SF vs. PF) on self-efficacy and goal-attainment outcomes.

Our findings concerning respondents' affective states are in line with the findings of previous studies (Grant, 2012; Braunstein & Grant, 2016; Neipp et al., 2016; Neipp et al., 2021). Neipp and colleagues (2021) too, found that asking the 'miracle' question led to a reduction in negative affect in an online self-coaching exercise. Grant and O'Connor (2018) found that SF questions had a positive impact on affective states, and that experiencing positive emotions contributed to participant's levels of self-efficacy. With our findings, a stronger case is built for the desirable effects of SF coaching questions on affective states.

Contrary to our expectations, SF questions did not increase levels of self-efficacy. An alternative explanation can be found by looking at mindset theory (Gollwitzer & Bayer, 1999). Mindset theory describes two different mindsets: a deliberative mindset ("the careful exploring of pros and cons of potential goals and actions") and an implementational mindset ("identifying means of change"; Grant & Cavanagh, 2014; p.61). Asking the 'miracle' question when someone is still exploring the problem in a deliberative mindset, can lead to confusion, a lack of engagement, or even negative affect such as anger or resentment (Bayer & Gollwitzer, 2005; Grant & Cavanagh, 2014). Some participants might not have been ready to think about practical solutions to their problem yet and needed to explore their problem more thoroughly. This could have led to confusion and lower reports of self-efficacy when asked how capable they felt of solving their problem (Grant & Cavanagh, 2014). For coaches, it is important to recognize the

state of their coachee and adjust their method to that. Several studies have argued for an integrative approach to coaching, in which coaches adopt both problem- and solution-focused coaching styles (Passmore, 2007; Theeboom et al., 2016; Neipp et al., 2016). This alternative explanation stresses the importance of a tailored approach to coaching, in which empathizing with the client can lead to a sensible decision of what approach to adopt in the moment.

For goal-attainment too, no significant difference was found between the SF and PF condition. In line with our findings, Neipp et al. (2021) recently also did not find a stronger effect for SF questions on perceived goal-attainment when comparing it to PF questions. Theeboom et al. (2016) found that cognitive flexibility resulted from SF questioning and argued that this was likely to underlie positive coaching outcomes such as creative problem-solving. The more cognitive flexible, the more action plans generated that lead to goal-attainment (Neipp et al., 2016; Theeboom et al., 2016). An alternative explanation to our findings is that asking the miracle question solely is not enough for building cognitive flexibility and developing action plans (Neipp et al., 2021). Neipp and colleagues (2021) describe how different types of SF questions have different effects. Where the miracle question is useful for spotting opportunities of overcoming a problem, another type of SF question (i.e. scaling questions) is more effective at helping to define action steps towards goal-attainment (Neipp et al., 2021). Based on this finding, it seems likely that solely using miracle questions is not enough in order to find the hypothesized effect, and that coaches should integrate various types of SF questions instead. Another speculation is that both PF and SF questions contribute to the creation of action plans (de Haan et al., 2016). It would be useful for future studies to include action planning in their study design in order to provide more clarity.

Finally, our results did not show an interplay between type of coaching goal and type of coaching questions. Apparently, and similar to Braunstein and Grant (2016), setting approach or avoidance goals does not impact the effects of coaching questions on self-efficacy and goal-

attainment. Firstly, it might be that the type of coaching goal needs to be further specified in order to find an interaction effect. Goal-orientation theory states that goals are not only characterized by an approach and avoidance orientation but that they can be further distinguished by mastery and performance orientations (Ames & Archer, 1988; Elliot & McGregor, 2001; Bardach et al., 2020). People with a mastery-approach goal hope to improve their knowledge, skills, and learning. A mastery-avoidance orientation represents a focus on avoiding misunderstanding or failing to master a task (e.g. falling short on one's own past performance). Performance-approach orientations then are about performing better as compared to others, and performance-avoidance orientation refers to not failing, avoiding negative judgements, or looking inferior to others. Mastery goals (including mastery-avoidance) are usually associated with more goal-attainment and feelings of self-efficacy than performance goals (e.g. Duda & Nicholls, 1992; Kaplan & Midgley, 1997; Liem, Lau, Nie, 2008; Diseth, 2011). Recognizing that our study does not distinguish between mastery and performance goals, it could be speculated that this has levelled out a potential effect of approach and avoidance goals.

Limitations

Undeniably, this study had some limitations. First and foremost, it should be stated that investigating coaching in an experimental setting is not representative for real-life coaching (Braunstein & Grant, 2016). The generalizability of this study might be limited due to the simplified nature of the experiment. In reality, coaches often adopt a more integrative approach using both SF and PF coaching questions. Moreover, goals often consist of multiple dimensions, and are not limited to only an approach or avoidance goal (Elliot & Church, 1997). In reality, it might be that one type of goal is predominant while other goals are present too. Nevertheless, adopting a simplified 'micro-focus' within an experimental setting allows for close examination

of specific coaching constructs, while ruling out other variables that might impact the findings (Braunstein & Grant, 2016).

Secondly, a limitation relates to the high drop-out rate, which might have affected the external validity of the results. Out of the 274 participants that started the experiment, 99 (36.1%) did not finish the study. The high dropout rate might have been due to the relatively high complexity of this study, something that could also be a source of bias for our sampling population.

Also, a limitation comes with the goal-attainment measure in our study. As our study measured goal-attainment before and after the coaching intervention, respondents might have speculated about the purpose of the measure. Therefore, the results could have become the victim of response bias, in which people report higher levels of goal-attainment after the intervention out of the motivation to act in line with what they think is the purpose of the experiment; namely, testing whether the ‘online coaching experiment’ makes them feel closer to attaining their goal; Furnham, 1986).

Practical implications and suggestions for future research

The current study adds value in several ways. Firstly, it provided further evidence for the effect of SF and PF coaching questions on positive/negative affective states. Secondly, it contributed to the debate surrounding the effect of coaching questions on self-efficacy and goal-attainment. Whereas SF coaching questions (as compared to PF coaching questions) have been associated with an array of positive coaching outcomes, this study stands in line with a stream of recent research studies (e.g. Neipp et al., 2021) that question these findings by providing evidence suggesting that these relationships are not as clear-cut. In order to provide more clarity about the effects of type of coaching questions on self-efficacy and goal-attainment, more replication studies are needed.

Secondly, this study was the first to examine for a potential interplay between coaching questions and goal-type since the pioneering study by Braunstein and Grant (2016). Like Braunstein and Grant (2016), no interaction effect of approach and avoidance goals was found, suggesting that the type of goal set indeed might not be of great impact on coaching outcomes. This study too found that manipulating participants into setting an avoidance goal was fairly difficult: 38% of the participants allocated to the avoidance goal manipulation had to be excluded for our analysis, as they formulated an approach goal instead (failing to conform to the clear instructions). This is an interesting discovery, that was also found by Braunstein and Grant (2016). It makes us believe that the majority of people tend to think in approach goals when being coached.

Thirdly, our study has provided a different angle to existing research examining coaching process factors, by using a working population rather than the way more often used student sample. Even though coaching can be useful for students, reality is that the largest share of people being coached does so based on work-related objectives, making it a better fitting population for coaching research.

Finally, this study adds value by investigating coaching in an online self-coaching format. As the nature of work is shifting towards a predominantly online environment, coaching too would benefit from more in-depth investigation of 'online (self-)coaching' methods. Not only those that undergo coaching, but also coaching itself is subject of continuous change and would do good to keep forging ahead.

Conclusion

The type of questions asked during coaching can determine coaching success. As found, solution-focused questions do a better job at making coachees experience more positive emotions and less negative emotions than problem-focused coaching questions. For coaches it is important to observe the coaching process and anticipate on the coachee's needs and wants. Focusing on solutions has the capacity to give coachees the boost they needed when striving for overcoming their problem and attaining their goal. In general, knowing the impact of the type of questions asked can greatly help to ensure positive coaching outcomes. If coaching research keeps focusing on the active process factors within the coaching conversation, this can improve the level of coaching worldwide.

Bibliography:

- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of educational psychology*, 80(3), 260.
- Anderman, E. M., Austin, C. C., & Johnson, D. M. (2002). The development of goal orientation. In *Development of achievement motivation* (pp. 197-220). Academic Press.
- Austin, J.T. & Vancouver, J.B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, 120(3), 338–375.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37, 122–147.
- Bandura, A. (1990). Perceived self-efficacy in the exercise of personal agency. *Journal of applied sport psychology*, 2(2), 128-163.
- Bandura, A., & Wessels, S. (1994). Self-efficacy.
- Bandura, A. (1995). *Self-efficacy in changing societies*. New York: Cambridge university Press.
- Bandura, A., Freeman, W. H., & Lightsey, R. (1999). Self-efficacy: The exercise of control.
- Bandura, A., & Locke, E. A. (2003). Negative self-efficacy and goal effects revisited. *Journal of applied psychology*, 88(1), 87.
- Bardach, L., Oczlon, S., Pietschnig, J., & Lüftenegger, M. (2020). Has achievement goal theory been right? A meta-analysis of the relation between goal structures and personal achievement goals. *Journal of Educational Psychology*, 112(6), 1197.
- Bayer, U. C., & Gollwitzer, P. M. (2005). Mindset effects on information search in self-evaluation. *European Journal of Social Psychology*, 35(3), 313-327.
- Beck, A. T. (1995). Cognitive therapy: present, and future. *Cognitive and constructive psychotherapies: theory, research, and practice*, 29-40.
- Bozer, G., & Jones, R. J. (2018). Understanding the factors that determine workplace coaching effectiveness: A systematic literature review. *European Journal of Work and Organizational Psychology*, 27(3), 342-361.

- Braunstein, K., & Grant, A. M. (2016). Approaching solutions or avoiding problems? The differential effects of approach and avoidance goals with solution-focused and problem-focused coaching questions. *Coaching: An International Journal of Theory, Research and Practice*, 9(2), 93-109.
- Buckley, P., Conte, H. R., Plutchik, R., Wild, K. V., & Karasu, T. B. (1984). Psychodynamic variables as predictors of psychotherapy outcome. *The American journal of psychiatry*.
- Bushman, B. J., Baumeister, R. F., & Phillips, C. M. (2001). Do people aggress to improve their mood? Catharsis beliefs, affect regulation opportunity, and aggressive responding. *Journal of personality and social psychology*, 81(1), 17.
- Carver, C. S. (2006). Approach, avoidance, and the self-regulation of affect and action. *Motivation and emotion*, 30(2), 105-110.
- Cesario, J., Higgins, E. T., & Scholer, A. A. (2008). Regulatory fit and persuasion: Basic principles and remaining questions. *Social and Personality Psychology Compass*, 2(1), 444-463.
- Clapham, M. M. (2003). The development of innovative ideas through creativity training. *The international handbook on innovation*, 366-376.
- Coats, E. J., Janoff-Bulman, R., & Alpert, N. (1996). Approach versus avoidance goals: Differences in self-evaluation and well-being. *Personality and Social Psychology Bulletin*, 22(10), 1057-1067.
- Cochran, W. & Tesser, A. (1996). The 'What the hell' effect: Some effects of goal proximity and goal framing on performance. In L. Martin & A. Tesser (Eds.), *Striving and feeling* (99–123). New Jersey: LEA.
- Cohn, M. A., Fredrickson, B. L., Brown, S. L., Mikels, J. A., & Conway, A. M. (2009). Happiness unpacked: Positive emotions increase life satisfaction by building resilience. *Emotion*, 9, 361-368.
- Das, K. R., & Imon, A. H. M. R. (2016). A brief review of tests for normality. *American Journal of Theoretical and Applied Statistics*, 5(1), 5-12.
- De Bono, E. (1995). Serious creativity. *Journal for Quality and Participation*, 18(5), 12–18.

- De Haan, E., Grant, A. M., Burger, Y., & Eriksson, P. O. (2016). A large-scale study of executive and workplace coaching: The relative contributions of relationship, personality match, and self-efficacy. *Consulting Psychology Journal: Practice and Research*, 68(3), 189.
- De Shazer, S. (1988). *Clues: Investigating solutions in brief therapy*. New York, NY: Norton.
- De Shazer, S., Berg, I. K., Lipchik, E. V. E., Nunnally, E., Molnar, A., Gingerich, W., & Weiner-Davis, M. (1986). Brief therapy: Focused solution development. *Family process*, 25(2), 207-221.
- Diseth, Å. (2011). Self-efficacy, goal orientations and learning strategies as mediators between preceding and subsequent academic achievement. *Learning and Individual Differences*, 21(2), 191-195.
- Dolphin, K. E., Steinhardt, M. A., & Cance, J. D. (2015). The role of positive emotions in reducing depressive symptoms among Army wives. *Military Psychology*, 27, 22-35.
- Duda, J. L., & Nicholls, J. G. (1992). Dimensions of achievement motivation in schoolwork and sport. *Journal of educational psychology*, 84(3), 290.
- Elliot, A. J. (2013). *Handbook of approach and avoidance motivation*. Psychology Press.
- Elliot, A. J., & Friedman, R. (2007). Approach-avoidance: A central characteristic of personal goals.
- Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of personality and social psychology*, 70(3), 461.
- Elliot, A. J., & McGregor, H. A. (2001). A 2 × 2 achievement goal framework. *Journal of personality and social psychology*, 80(3), 501.
- Elliot, A. J., Sheldon, K. M., & Church, M. A. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychology Bulletin*, 23(9), 915-927.
- Evers, A., van Vliet-Mulder, J. C., Resing, W. C., Starren, J. C. M. G., de Veer, R. V. A., & Van Boxtel, H. (2002). *Cotan testboek voor het onderwijs*. NDC-Boom.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. sage.

- Fischer, R. L., & Beimers, D. (2009). "Put me in, Coach": A pilot evaluation of executive coaching in the nonprofit sector. *Nonprofit Management and Leadership*, 19(4), 507-522.
- Fletcher, S. J. (2012). Coaching: an overview. *The SAGE handbook of mentoring and coaching in education*, 24-40.
- Frank, J. D., & Frank, J. B. (1993). *Persuasion and healing: A comparative study of psychotherapy*. JHU Press.
- Fredrickson, B. L. (1998). What good are positive emotions?. *Review of general psychology*, 2(3), 300-319.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American psychologist*, 56(3), 218.
- Fredrickson, B. L., & Cohn, M. A. (2008). Positive emotions.
- Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological science*, 13(2), 172-175.
- Frese, M. (2008). The changing nature of work. *An introduction to work and organizational psychology*, 397-413.
- Freud, S. (1955). Lines of advance in psycho-analytic therapy. In *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XVII (1917-1919): An Infantile Neurosis and Other Works* (pp. 157-168).
- Froggatt, W. (2006), "A brief introduction to cognitive-behaviour therapy", available at: www.rational.org.nz/ (accessed 25th July 2021).
- Furnham, A. (1986). Response bias, social desirability and dissimulation. *Personality and individual differences*, 7(3), 385-400.
- Garland, E. L., Fredrickson, B., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical psychology review*, 30(7), 849-864.

- Gaskill, P. J., & Hoy, A. W. (2002). Self-efficacy and self-regulated learning: The dynamic duo in school performance. In *Improving academic achievement* (pp. 185-208). Academic Press.
- Gessnitzer, S., & Kauffeld, S. (2015). The working alliance in coaching: Why behavior is the key to success. *The Journal of Applied Behavioral Science*, 51, 177–197.
- Gleicher, F., & Petty, R. E. (1992). Expectations of reassurance influence the nature of fear-stimulated attitude change. *Journal of Experimental Social Psychology*, 28(1), 86-100.
- Gollwitzer, P. M. (1999). Implementation intentions: Simple effects of simple plans. *American Psychologist*, 54(7), 493–503.
- Gollwitzer, P. M., & Bayer, U. C. (1999). *Deliberative versus implemental mindsets in the control of action* (pp. 403-422).
- Grant, A. M. (2003). The impact of life coaching on goal- attainment, metacognition and mental health. *Social Behavior and Personality*, 31, 253–264.
- Grant, A. M. (2008). Past, present and future: The evolution of professional coaching and coaching psychology.
- Grant, A. M. (2012). Making positive change: A randomized study comparing solution-focused vs. problem-focused coaching questions. *Journal of Systemic Therapies*, 31(2), 21-35.
- Grant, A. M. (2014). Autonomy support, relationship satisfaction and goal focus in the coach–coachee relationship: Which best predicts coaching success?. *Coaching: An International Journal of Theory, Research and Practice*, 7(1), 18-38.
- Grant, A. M. (2016). What can Sydney tell us about coaching? Research with implications for practice from down under. *Consulting Psychology Journal: Practice and Research*, 68(2), 105.
- Grant, A. M. (2020). An integrated model of goal-focused coaching: an evidence-based framework for teaching and practice. *Coaching Researched: A Coaching Psychology Reader*, 115-139.
- Grant, A. M., & Atad, O. I. (2021). Coaching psychology interventions vs. positive psychology interventions: The measurable benefits of a coaching relationship. *The Journal of Positive Psychology*, 1-13.

- Grant, A. M., & Cavanagh, M. J. (2014). The solution-focused approach to coaching. *The complete handbook of coaching*, 327-344.
- Grant, A. M., Curtayne, L., & Burton, G. (2009). Executive coaching enhances goal attainment, resilience and workplace well-being: A randomised controlled study. *The Journal of Positive Psychology*, 4, 396–407.
- Grant, A. M., & Gerrard, B. (2020). Comparing problem-focused, solution-focused and combined problem-focused/solution-focused coaching approach: Solution-focused coaching questions mitigate the negative impact of dysfunctional attitudes. *Coaching: An International Journal of Theory, Research and Practice*, 13(1), 61-77.
- Grant, A. M., Green, L. S., & Rynsaardt, J. (2010). Developmental coaching for high school teachers: Executive coaching goes to school. *Consulting Psychology Journal: Practice and Research*, 62, 151–168.
- Grant, A. M., & O'Connor, S. A. (2010). The differential effects of solution-focused and problem-focused coaching questions: A pilot study with implications for practice. *Industrial and Commercial Training*, 42(2), 102–111.
- Grant, A., & O'Connor, S. (2019). A brief primer for those new to coaching research and evidence-based practice. *The Coaching Psychologist*, 15(1), 3.
- Green, S., Grant, A., & Rynsaardt, J. (2007). Evidence-based life coaching for senior high school students: Building hardiness and hope. *International Coaching Psychology Review*, 2, 24–32.
- Higgins, E. T. (2008). Regulatory fit. *Handbook of motivation science*, 356-72.
- Hite, L. M., & McDonald, K. S. (2020). Careers after COVID-19: challenges and changes. *Human Resource Development International*, 23(4), 427-437.
- Jones, R. J., Woods, S. A., & Guillaume, Y. (2014). A meta-analysis of the effectiveness of executive coaching at improving work-based performance and moderators of coaching effectiveness.
- Jones, R. J., Woods, S. A., & Guillaume, Y. R. (2016). The effectiveness of workplace coaching: A meta-analysis of learning and performance outcomes from coaching. *Journal of occupational and organizational psychology*, 89(2), 249-277.

- Judge, T. A., Van Vianen, A. E., & De Pater, I. E. (2004). Emotional stability, core self-evaluations, and job outcomes: *A review of the evidence and an agenda for future research. Human performance*, 17(3), 325-346.
- Kaplan, A., & Midgley, C. (1997). The effect of achievement goals: Does level of perceived academic competence make a difference?. *Contemporary educational psychology*, 22(4), 415-435.
- Kiefer, T. (2005). Feeling bad: Antecedents and consequences of negative emotions in ongoing change. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 26(8), 875-897.
- Kilburg, R.R. (2004), “When shadows fall: using psychodynamic approaches in executive coaching”, *Consulting Psychology Journal: Practice & Research*, Vol. 56 No. 4, pp. 246-68.
- Kombarakaran, F. A., Yang, J. A., Baker, M. N., & Fernandes, P. B. (2008). Executive coaching: It works!. *Consulting Psychology Journal: Practice and Research*, 60(1), 78.
- Kozak, M., & Piepho, H. P. (2018). What's normal anyway? Residual plots are more telling than significance tests when checking ANOVA assumptions. *Journal of Agronomy and Crop Science*, 204(1), 86-98.
- Lambert, M. J., & Barley, D. E. (2001). Research summary on the therapeutic relationship and psychotherapy outcomes. *Psychotherapy: Theory, Research, Practice, Training*, 38, 357–361.
- Landy, F. J., & Conte, J. M. (2016). *Work in the 21st century: An introduction to industrial and organizational psychology*. John Wiley & Sons.
- Leonard-Cross, E. (2010). Developmental coaching: Business benefit – Fact or fad? An evaluative study to explore the impact of coaching in the workplace. *International Coaching Psychology Review*, 5, 36–47.
- Li, M. H., Eschenauer, R., & Persaud, V. (2018). Between avoidance and problem solving: Resilience, self-efficacy, and social support seeking. *Journal of Counseling & Development*, 96(2), 132-143.

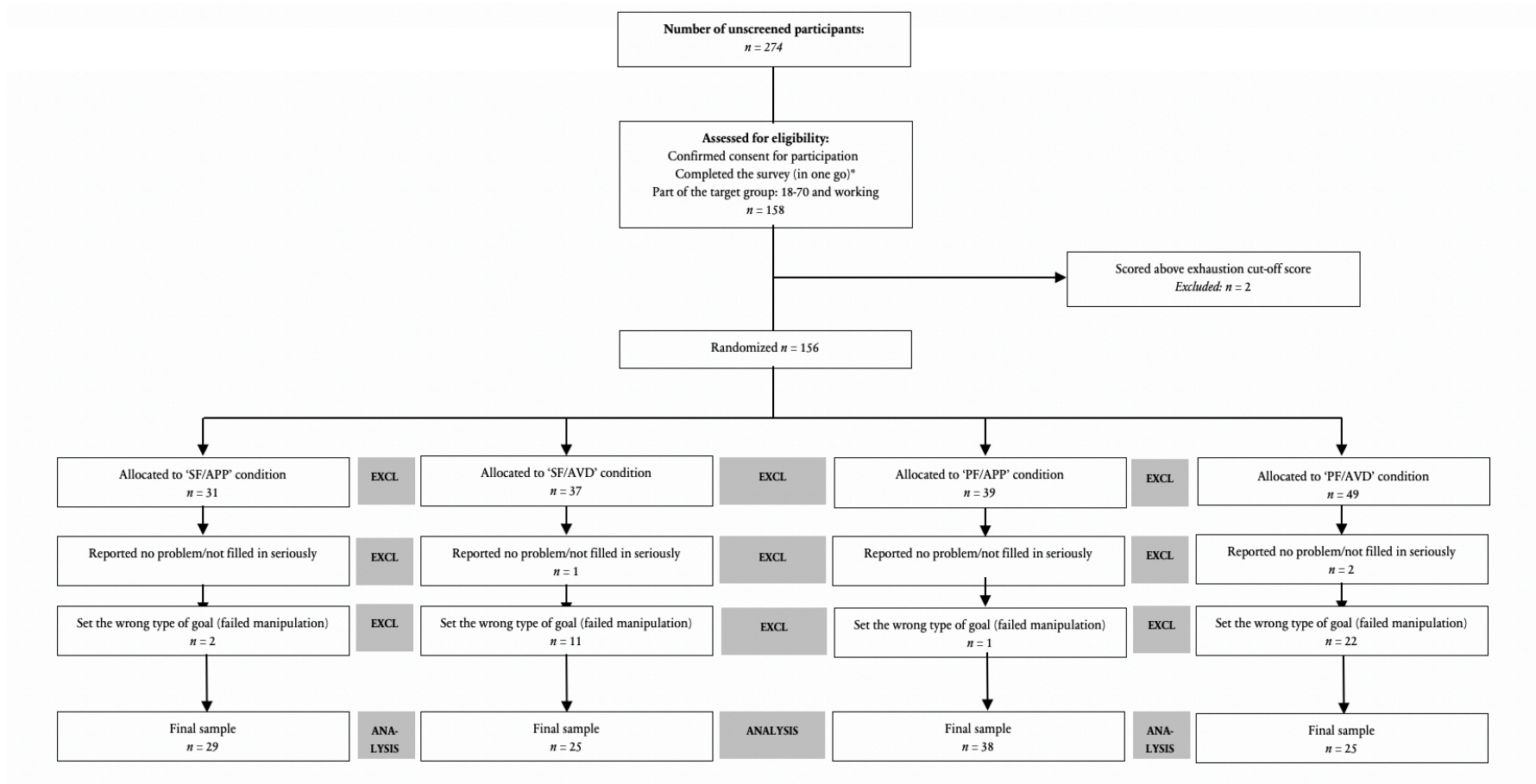
- Liem, A. D., Lau, S., & Nie, Y. (2008). The role of self-efficacy, task value, and achievement goals in predicting learning strategies, task disengagement, peer relationship, and achievement outcome. *Contemporary educational psychology*, 33(4), 486-512.
- Linley, P. A., & Harrington, S. (2005). Positive psychology and coaching psychology: Perspectives on integration. *The Coaching Psychologist*, 1(1), 13-14.
- Linley, P., Nielsen, K. M., Gillett, R., & Biswas-Diener, R. (2010). Using signature strengths in pursuit of goals: Effects on goal progress, need satisfaction, and well-being, and implications for coaching psychologists. *International Coaching Psychology Review*, 5(1), 6-15.
- Maner, J. K., & Schmidt, N. B. (2006). The role of risk avoidance in anxiety. *Behavior Therapy*, 37(2), 181-189.
- Martin, L. L., & Tesser, A. (1996). Some ruminative thoughts. *Advances in social cognition*, 9(1996), 1-47.
- Matthews, G., Jones, D. M., & Chamberlain, A. G. (1990). Refining the measurement of mood: The UWIST mood adjective checklist. *British journal of psychology*, 81(1), 17-42.
- McGuffin, A. A., & Obonyo, E. (2010). Enhancing performance: A case study of the effects of employee coaching in construction practice. *Construction Management and Economics*, 28(2), 141-149.
- McKenna, D., & Davis, S. L. (2009). Hidden in plain sight: The active ingredients of executive coaching. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 2, 244-260.
- Neenan, M. (2009). Using Socratic questioning in coaching. *Journal of rational-emotive & cognitive-behavior therapy*, 27(4), 249-264.
- Neipp, M.C., Beyebach, M., Nuñez, R. M., & Martínez-González, M.C. (2015). The effect of solution-focused versus problem-focused questions: A replication. *Journal of Marital and Family Therapy*.
- Neipp, M. C., Beyebach, M., Sanchez-Prada, A., & Delgado Álvarez, M. D. C. (2021). Solution-Focused versus Problem-Focused Questions: Differential Effects of Miracles, Exceptions and Scales. *Journal of Family Therapy*.

- Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of abnormal psychology, 109*(3), 504.
- Oettingen, G., Hönig, G., & Gollwitzer, P. M. (2000). Effective self-regulation of goal attainment. *International journal of educational research, 33*(7-8), 705-732.
- Olivero, G., Bane, K. D., & Kopelman, R. E. (1997). Executive coaching as a transfer of training tool: Effects on productivity in a public agency. *Public personnel management, 26*(4), 461-469.
- Pajares, F., Britner, S. L., & Valiante, G. (2000). Relation between achievement goals and self-beliefs of middle school students in writing and science. *Contemporary Educational Psychology, 25*(4), 406–422.
- Palmer, S., & Whybrow, A. (Eds.). (2018). *Handbook of coaching psychology: A guide for practitioners*. Routledge.
- Passmore, J. (2007). An integrative model for executive coaching. *Consulting Psychology Journal: Practice and Research, 59*(1), 68.
- Passmore, J., Stopforth, M., & Lai, Y. (2018). Defining coaching psychology: Debating coaching and coaching psychology definitions. *The Coaching Psychologist, 14*(2), 120-122.
- Passmore, J., & Theeboom, T. (2016). *Coaching Psychology: A journey of development in research. Coaching psychology: Meta-theoretical perspectives and applications in multicultural contexts*. New York: Springer.
- Proudfoot, J.G., Corr, P.J., Guest, D.E., & Dunn, G. (2009), “Cognitive-behavioural training to change attributional style improves employee wellbeing, job satisfaction, productivity, and turnover”, *Personality and Individual Differences*, Vol. 46 No. 2, pp. 147-53.
- Rooney, J. J., & Heuvel, L. N. V. (2004). Root cause analysis for beginners. *Quality Progress, 37*(7), 45–56.
- Ryan, A., & Shim, S. (2005). Changes in self-efficacy, challenge avoidance, and intrinsic value in response to grades: The role of achievement goals. *The Journal of Experimental Education, 73*(4), 333–349.

- Salas, E., & Cannon-Bowers, J. A. (2001). The science of training: A decade of progress. *Annual review of psychology*, 52(1), 471-499.
- Schaufeli, W. B., & Van Dierendonck, D. (2000). Handleiding van de Utrechtse burnout schaal (UBOS)[manual Utrecht burnout scale]. *Lisse: Swets Test Services*, 177-196.
- Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). MBI manual (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Schmider, E., Ziegler, M., Danay, E., Beyer, L., & Bühner, M. (2010). Is it really robust? Reinvestigating the robustness of ANOVA against violations of the normal distribution assumption. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, 6(4), 147–151
- Seligman, M. E., & Csikszentmihalyi, M. (2000). Positive Psychology.
- Shah, J., & Higgins, E. T. (1997). Expectancy× value effects: Regulatory focus as determinant of magnitude and direction. *Journal of personality and social psychology*, 73(3), 447.
- Smith, I. M., & Brummel, B. J. (2013). Investigating the role of the active ingredients in executive coaching. *Coaching: An International Journal of Theory, Research and Practice*, 6, 57–71.
- Spasojević, J., & Alloy, L. B. (2001). Rumination as a common mechanism relating depressive risk factors to depression. *Emotion*, 1(1), 25.
- Spence, G. B., Cavanagh, M. J., & Grant, A. M. (2008). The integration of mindfulness training and health coaching: An exploratory study. *Coaching: An International Journal of Theory, Research and Practice*, 1(2), 145-163.
- Theeboom, T., Beersma, B., & van Vianen, A. E. (2014). Does coaching work? A meta-analysis on the effects of coaching on individual level outcomes in an organizational context. *The Journal of Positive Psychology*, 9(1), 1-18.
- Theeboom, T., Beersma, B., & Van Vianen, A. E. (2016). The differential effects of solution-focused and problem-focused coaching questions on the affect, attentional control and cognitive flexibility of undergraduate students experiencing study-related stress. *The Journal of Positive Psychology*, 11(5), 460-469.

- Wachtel, P. L., & Messer, S. B. (1997). *Theories of psychotherapy: Origins and evolution*. American psychological association.
- Wehr, T. (2010). The phenomenology of exception times: Qualitative differences between problem-focused and solution-focused interventions. *Applied Cognitive Psychology*, 24, 467–480.
- Wheatley, M., Tannenbaum, R., Griffin, P. Y., & Quade, K. (2003). *Organization development at work: Conversations on the values, applications, and future of OD* (Vol. 22). John Wiley & Sons.
- Whitmore, J. (2009). *Coaching for performance* (3 ed.). London: Nicholas Brealey
- Wigfield, A. (1994). Expectancy-value theory of achievement motivation: A developmental perspective. *Educational psychology review*, 6(1), 49-78.
- Wilson, P. F., Dell, L. D., & Anderson, g. F. (1993). *Root cause analysis: A tool for total quality management*. New York: american Society for Quality improvement.
- Wollburg, E., & Braukhaus, C. (2010). Goal setting in psychotherapy: The relevance of approach and avoidance goals for treatment outcome. *Psychotherapy Research*, 20(4), 488-494.
- Yu, F. (2019). Miracle Question in Couple and Family Therapy. *Encyclopedia of Couple and Family Therapy*, 1930-1932.
- Yu, N., Collins, C. G., Cavanagh, M., White, K., & Fairbrother, G. (2008). Positive coaching with frontline managers: Enhancing their effectiveness and understanding why. *International Coaching Psychology Re- view*, 3, 110–122.
- Zimmerman, D. W. (2004). A note on preliminary tests of equality of variances. *British Journal of Mathematical and Statistical Psychology*, 57(1), 173-181.

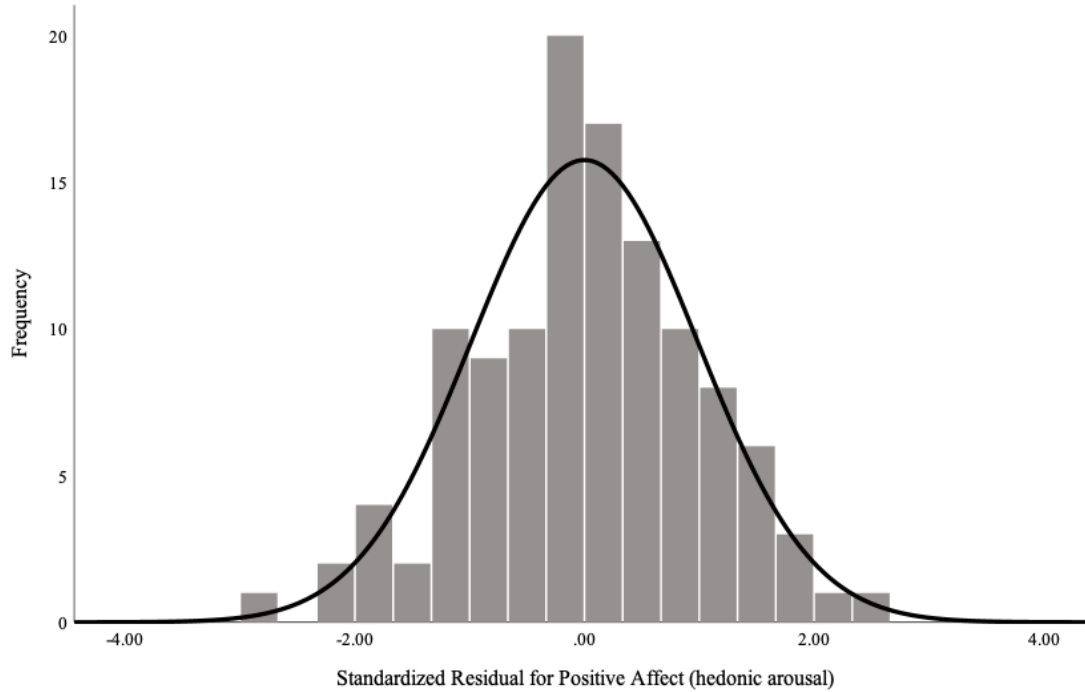
Appendix 1: CONSORT diagram depicting screening and exclusion procedures



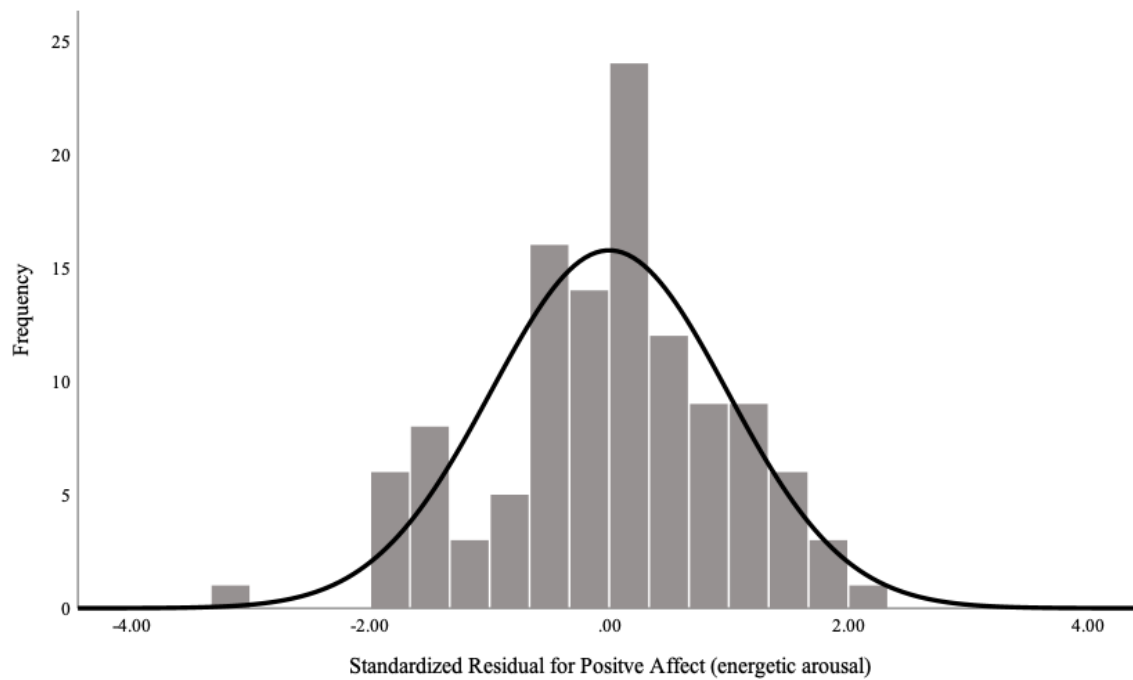
Note: *Since this experiment makes use of manipulation, it was required for participants to finish the study in one go. No scientific backing was found for excluding responses based on time. Based on the obtained data, a data-driven line was drawn after excluding the most extreme outliers (> 70 minutes). Everyone that took longer than 70 minutes was assumed to have not finished the experiment in on go, and therefore excluded from this study.

Appendix 2: Standardized residual plots

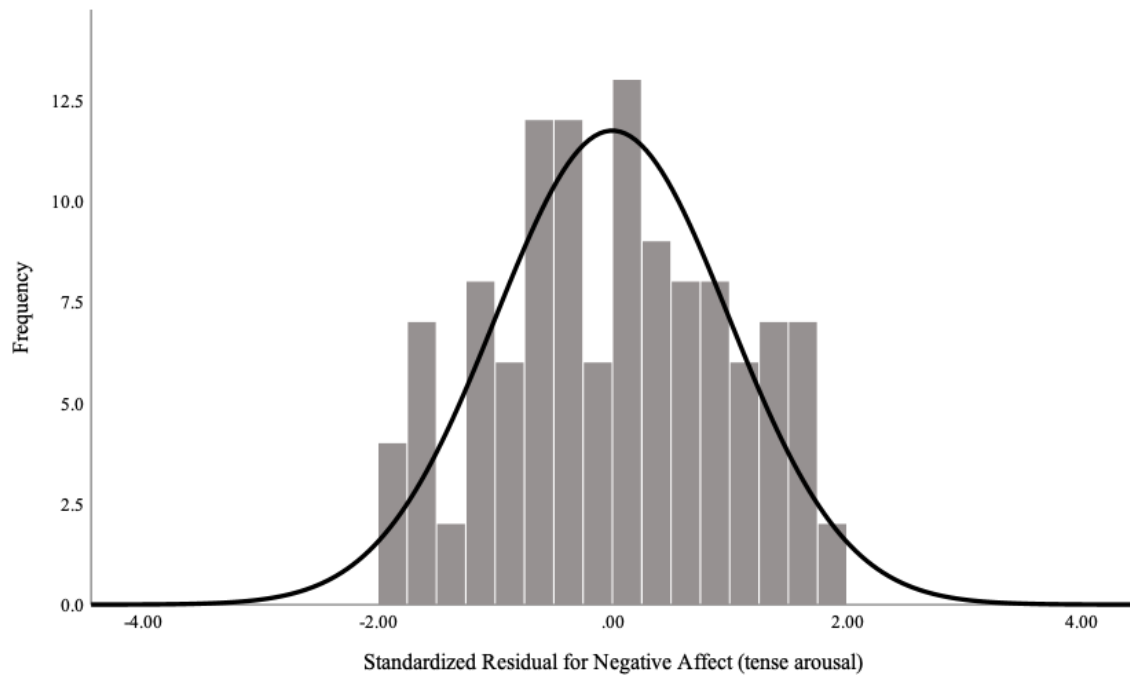
- Appendix 2a: Standardized residual plot for positive affect (hedonic arousal)



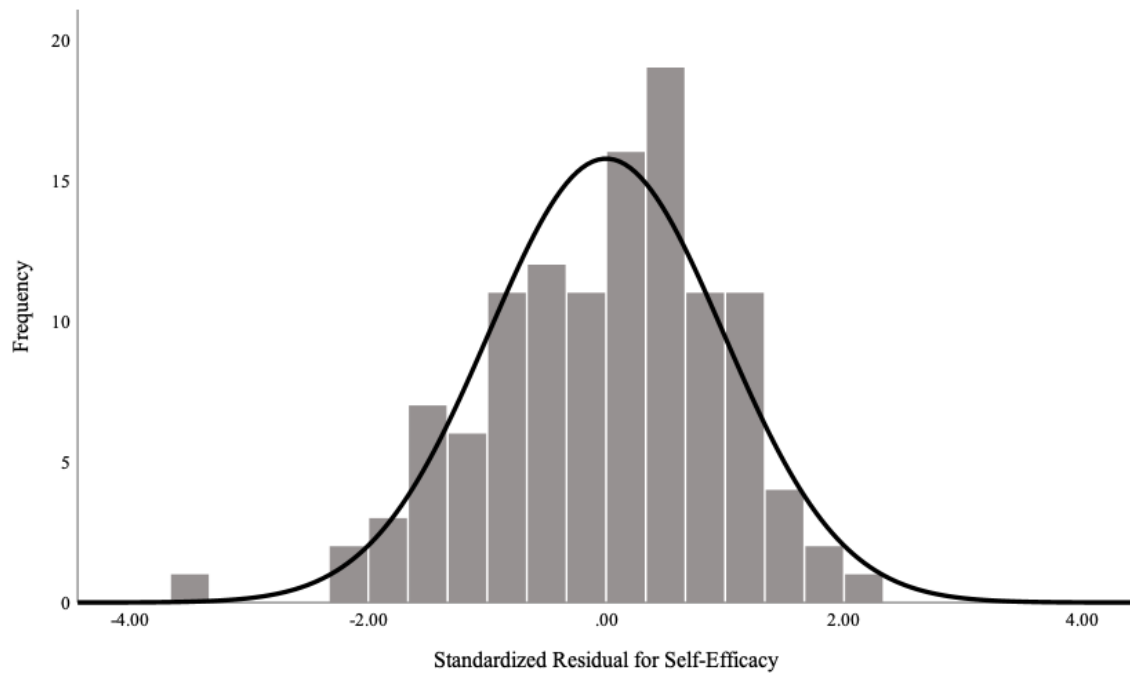
- Appendix 2b: Standardized residual plot for positive affect (energetic arousal)



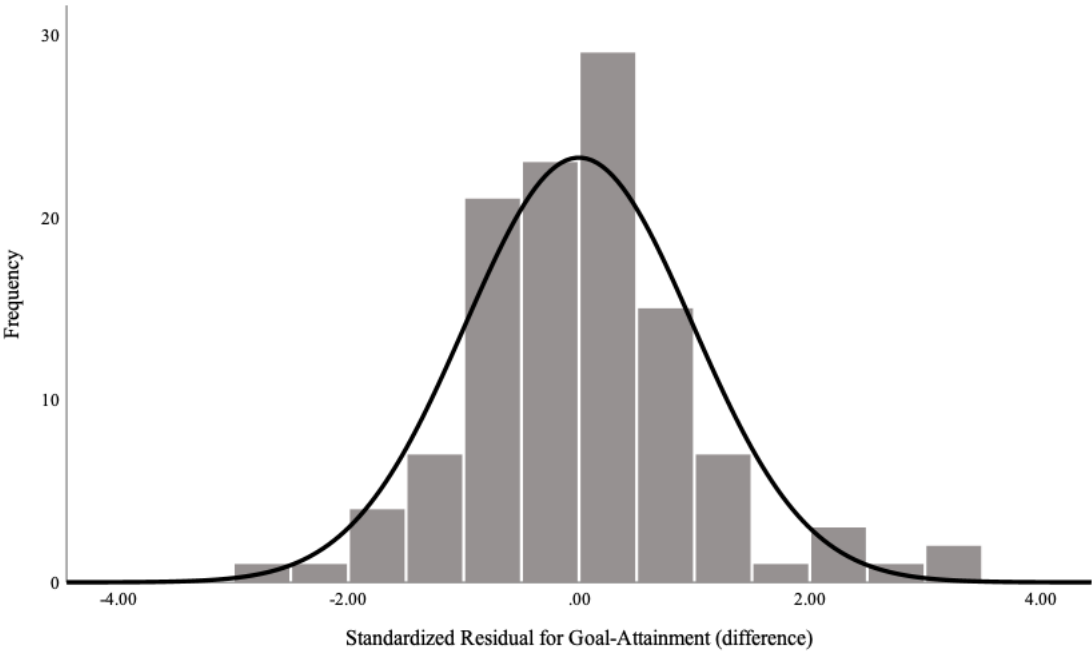
- Appendix 2c: Standardized residual plot for negative affect (tense arousal)



- Appendix 2d: Standardized residual plot for self-efficacy



Appendix 2e: Standardized residual plot for goal-attainment (difference)*



* In order to show the standardized residual plot for the goal-attainment scores, the difference between the pre- and post- scores were calculated and standardized.