



From Aha to Ta-dah: insights during life coaching and the link to behaviour change

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ABSTRACT

Insight represents a cognitive leap in understanding that is distinct from other types of problem-solving. How moments of insight subsequently link to behaviour has not been investigated in real world settings such as coaching. By extending findings from neuroscience into the field of life coaching, our study examined the link between moments of insight and changes in behaviour in a one group, pre-post, mixed method design. Moments of insight and non-insight were tracked over nine life-coaching sessions with a population of women ($N = 6$) and their coaches ($N = 6$). Changes in behaviour were assessed at eight weeks post intervention. Insights occurred five times more often ($p = .03$) during life coaching than in the previous six months. Analysis of qualitative data showed a narrative pattern between goal-progress, moments of insight, and sustained behaviour change. The coach's role in evoking insight is explored.

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KEYWORDS

Life coaching; behaviour change; role of coach; problem-solving; creativity; insight; mixed methods

Practice Points

1. To which field of practice area(s) in coaching is your contribution directly relevant?
This study is relevant to life coaches and coaching researchers.
2. What do you see as the primary contribution your submission makes to coaching practice?
Our key finding is that moments of insight increase significantly during coaching, and can be tracked to behaviour change and coaching technique.
3. What are its tangible implications for practitioners? Practice implications include:
 - the significance of an insight during life coaching
 - a refined understanding of how life coaching produces behaviour change

Background

Problems can be solved using logic or insight, sometimes referred to as left-brain or right-brain thinking (Kounios & Beeman, 2015). Psychology researchers have studied insight for

over a century and found the main features of insight include: reaching an impasse, having a solution arrive suddenly, having a feeling of confidence about the solution, and looking at the problem from a new perspective (Sternberg & Davidson, 1995). What is known about insight has been derived from lab-based simulations or personal accounts of spontaneous problem-solving. Often referred to as the ‘aha moment’, narratives from Archimedes to Einstein have shown a consistent pattern of being stuck on a problem, followed by the arrival of a spontaneous solution and a new perspective on the topic (Klein & Jarosz, 2011).

Recently, neuroscientists have examined problem-solving using functional magnetic resonance imaging and electroencephalogram (EEG), technologies that enable researchers to isolate and further characterise moments of insight by examining blood flow and electrical impulses (Bowden & Jung-Beeman, 2003b; Jung-Beeman et al., 2004; Kounios & Beeman, 2009; Subramaniam, Kounios, Parrish, & Jung-Beeman, 2009). These studies have confirmed that insight is not a business-as-usual cognitive process and that moments of insight occur consistently on the right side of the brain, which is associated with creative thinking (Bowden & Jung-Beeman, 2003a; Kounios & Beeman, 2015).

In terms of the organisation of the brain, the right side of the brain is the intuitive part and connects parts of the brain we share with mammals and reptiles. Scientists sometimes call these older areas the emotional and instinct brains, respectively (Siegel, 2010). The system extends through the body via the vagus nerve, along with nerve transmitters and nerve hormones in a complex and continuous network (Siegel, 2010; Van Der Kolk, 2015).

While it is a simplification to use terms like left-brain and right-brain or even to separate mind from body, for the purpose of this discussion we define non-insight thinking as a left-brain logic process in which problem-solvers are typically aware of how they derive an answer from repeated attempts. This type of analysis takes place mostly in the pre-frontal cortex, and is sometimes referred to as the thinking section of the brain. It is not until problem-solvers get stuck or reach an impasse that neural resources outside of the pre-frontal cortex become available. At this point, the brain keeps trying to solve the problem at a subconscious level and attempts more remote and more distant connections. If a solution is discovered, the brain will consciously consider this as a moment of insight (Kounios & Beeman, 2015; Siegel, 2010).

Insight also produces a surge of electricity that corresponds to the ‘aha’ effect and other observable signs of insight, such as a look of surprise, widening of the eyes, or sudden body movement. Owing to the unique features of insight, participants are able to report when they have produced a solution using left-brain logic or right-brain insight, and these self-reports have been confirmed with objective measures of neural activity (Jung-Beeman et al., 2004; Luo & Knoblich, 2007).

Klein and Jarosz (2011) sampled 120 reports of insight, qualified by a sudden shift in perception and subsequent change of perspective on the problem. Their naturalistic inquiry of spontaneous insights examined the mechanisms that shaped subsequent behaviour. They found a strong relation for noticing contradictions (82%) and willingness to explore these contradictions (93%), and reported that 46% of the insights resulted in a new behaviour (Klein & Jarosz, 2011).

If insight ‘enables subconscious quantum leaps during the generation of new mental products’ (Sternberg & Davidson, 1995, p. 75), it might be predicted that evidence of these moments would extend to changes in behaviour compared to non-insight.

Examining a spontaneous phenomenon like insight during life coaching may address the functional purpose of insight and whether it links to behaviour change.

Coaching has become a popular and practical strategy to manage change in organisations and wellness strategies (Rock & Page, 2009). Evidence on the efficacy of coaching is currently supported by over 40 randomised controlled trials (Passmore, 2014). A recent meta-analysis of 18 studies of coaching within organisations showed significant positive correlations in performance, well-being, coping, attitudes, and self-regulation (Theeboom, Beersma, & van Vianen, 2014). In a scoping review of 28 studies of coaching in health behaviour change, researchers found that coaching was a modifier of behaviour in all of the studies reviewed (Liu, Irwin, & Morrow, 2015).

If coaching works to evoke behaviour change, subsequent lines of inquiry for researchers are exploring *how* coaching evokes behaviour change. One approach that is being used to explore the mechanics of coaching is mindfulness (Hall, 2013; Passmore & Mariannetti, 2007). Mindfulness is a way of paying attention, being present, and self-regulating (Rock & Page, 2009). To be mindful is the ability to direct attention towards the present moment, during which cognitive processes are continuously registering and responding to inputs and defaults. This means humans can spend more of their time and energy mediating worries and problems that are based in the past or anticipated in the future (Neale, Spencer-Arnell, & Wilson, 2009). Rock and Page (2009) propose that coaching employs both mindfulness and cognitive change.

Few studies have looked at the relationship of insight to behaviour change. A phenomenological study on insight within a life-coaching programme found that behaviour change following a moment of insight was related to the depth of emotion and importance of the topic (Longhurst, 2006). Longhurst (2006) also recognised that moments of insight during coaching signalled an important transformation. Her findings affirmed the assertion by Pert (1997) that the unconscious mind is accessed through the body.

The current study focused on Co-Active Life Coaching (CALC), which was first introduced in 1992 (Kimsey-House, Kimsey-House, Sandahl, & Whitworth, 2011). The basic structure of CALC is an alliance between coach and client that is dedicated to the client's personal growth (Irwin & Morrow, 2005; Kimsey-House et al., 2011; Newnham-Kanas, Morrow, & Irwin, 2010). The creators of CALC contend that the underlying motivator in all coaching is the client's desire for fulfilment, balance, and processing emotional limitations, regardless of the coaching topic. In the CALC model, these three principles form the core coaching practices of fulfilment, balance, and process. Each core practice has a toolbox of techniques and exercises associated with it and the intent is to transform the client's awareness about the topic (Kimsey-House et al., 2011; Newnham-Kanas et al., 2010). In addition, there are features of CALC that serve to foster flexibility in service of the client's agenda. The coach is trained to maintain a deep and attentive mode of listening to the client, to cultivate intuition, and to observe the client's non-verbal cues and tone of voice. The coach prompts client-centred dialogue with open-ended questions, exploration of goals, beliefs, and/or emotions. This exploration is followed by a plan of action and holds the client accountable to his or her agenda (Irwin & Morrow, 2005; Kimsey-House et al., 2011; Pearson, 2011).

In studies conducted in health behaviour change using CALC (Irwin & Morrow, 2005; Mantler, Irwin, & Morrow, 2010; Newnham-Kanas, Gorczyński, Morrow, & Irwin, 2009; Newnham-Kanas, Irwin, & Morrow, 2008; van Zandvoort, Irwin, & Morrow, 2008)

researchers have demonstrated the effectiveness of CALC in interventions on obesity, physical activity, and smoking cessation.

The purpose of the current study was to build on the naturalistic studies of insight and the link to behaviour change. We hypothesised that moments of insight during coaching would represent breakthroughs in a topic of personal and emotional significance, resulting in a new perspective and sustained behaviour change compared to non-insight.

Research design

The research setting took place in an existing coaching programme located in London, Ontario, called *Women Together* that offers subsidised coaching to low-income women. The programme features 9 one-to-one coaching sessions with coaches certified in CALC. Consent was obtained from participants and their coaches, and ethics approval for the study was attained through Western University's Office of Research Ethics.

Intervention

The *Women Together* coaching programme was based on the CALC model and the Wheel of Life[®], originally attributed to Paul J. Meyer and often adapted for use in coaching for an initial assessment (Byrne, 2005; Kimsey-House et al., 2011; Ross, 2008). At week 1, participants ranked their satisfaction with areas of interest from 1 (low satisfaction) to 10 (high satisfaction). Topics included career, money, health, friends and family, romance and significant other, personal growth or spirituality, fun and recreation, and physical environment. In the following weeks, participants engaged in nine individual coaching sessions delivered in person or by phone by a certified CALC coach. Sessions lasted one hour and explored the topics of interest in more detail. The programme included two additional weeks that allowed for potential integration of changes and for any missed or cancelled coaching sessions. In addition, there were optional group activities at mid-point and end of the programme to promote health and well-being such as yoga, meditation, or sharing a meal.

Methods

The study design was mixed methods research that adopted Creswell's (2015) approach to collecting and analysing both quantitative (objective/numeric) and qualitative (subjective/narrative) data. A convergent parallel design was chosen in which both types of data were collected and analysed separately in parallel sequence until they converged in the comparison and interpretation phases (see Figure 1).

Demographic information was collected including age, education, reasons for seeking coaching, and initial goals. Any prior experience with coaching or counselling in the last five years (as a Yes/No) was noted to account for a potential confounding variable (Baer et al., 2008). Goals derived from the programme's initial topic exploration were also collected. Following each one-to-one coaching session, coach and participant independently completed a session feedback form created to track types of problem-solving during the coaching session (insight or non-insight), as well as topic importance and associated emotions. Eight weeks after the programme ended (+/- one week), participants completed a follow-up survey to evaluate the impact of coaching and whether changes

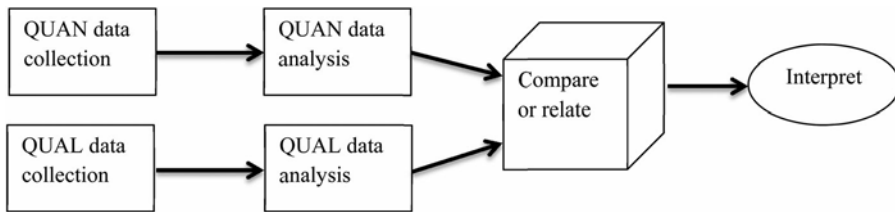


Figure 1. Convergent parallel design (Watkins & Gioia, 2015, used with permission).

enacted during coaching had been sustained. All surveys, questionnaires, and feedback forms were administered using the on-line survey provider Survey Monkey® (<https://www.surveymonkey.com/>). The researcher monitored survey completion and sent e-mail prompts (+/- one week), after which data were considered missed. Since the characteristics of insight had been established by previous research, a deductive approach was adopted to confirm and compare the generation of insight in the field (Niglas, 2010). Qualitative data in the form of free text responses in participant and coach surveys was assessed via deductive coding (Mills & Birks, 2014), related to established characteristics of insight that included impasse, insight, emotion, and change in perspective. Since the primary aim was the sustainability of behaviour change in relation to insight, the focus of the qualitative analysis was on the changes that had been sustained at eight weeks follow-up. Progress descriptions that did not meet all the criteria of insight but yielded goal achievement and behaviour change were characterised as non-insight.

Results

Data collection took place from September 2015 to March 2016. A total of 11 *Women Together* participants were approached for the study and eight consented, along with their coaches. Two participants withdrew during the programme, resulting in a final cohort of six participants and six coaches that completed all study requirements

Demographics and history

All consenting participants ranged in age from 30 to 49 years. Three participants graduated high school, two completed college, two completed university, and one had post-graduate training. Five participants had no experience with coaching in the past five years. Of the three participants who did have coaching or counselling experience, the duration ranged between 2 and 6 months. Both participants who withdrew had no prior experience with coaching or counselling. Regardless of the ability to qualify insight (based on the four characteristics) prior to intervention, all but one participant ($n = 5$) reported moments of insight in the 6 months prior to the first session.

Moments of insight during coaching

Feedback forms were requested from participants and coaches following each one-to-one coaching session. Participant completion ranged from 2 to 9 forms (average = 5 forms) for a total of 28 completed forms. Twenty feedback forms were completed by coaches. After

accounting for session reports that overlapped, participants and coaches reported on 72% (39/54) of the coaching sessions.

Every participant reported at least one instance of insight (ranging from 1 to 9) during the coaching intervention. More moments of insight were achieved during coaching ($M = 4.50$, $SD = 3.08$) relative to 6 months prior to the intervention start ($M = 0.83$, $SD = 0.41$; $t = -3.05$, $p = .03$).

Linking insight to behaviour

To evaluate sustained behaviour change and related insights, participants were asked to establish three personal goals for the programme and these were reviewed during follow-up, eight weeks after the programme ended. A representative selection of insight reports and subsequent behaviour change as quoted responses from participants is shown in Table 1. The mapping of narrative responses to characteristics of insight and subsequent behaviour change revealed a pattern between the shift in perspective and the resulting new behaviour. In particular, during a moment of insight, participants experienced a characteristic emotional charge and a change in perspective. Overall, moments of insight could be directly linked to goal-progress for 93% ($n = 25$) and behaviour change in 56% ($n = 15$) of the cases.

Non-insights

Fewer non-insight sessions were reported ($n = 12$) during the programme compared to moments of insight. Of these non-insight sessions, participants described working through emotions or events that were not attributable to insight but nevertheless supported their goals. Related to the primary goal of sustained behaviour change, we found three examples of behaviours in the narratives that were described in the context of non-insight, and these are described in Table 2.

Table 1. Goals and related insights mapped to insight characteristics and behaviour change.

Goal	Impasse	Moment of insight	Emotion/important topic	Change in perspective	Change in behaviour
Career enjoyment	My career was the big thing because I was having a real problem where I am working right now. I was definitely stuck in the poor me and what am I going to do?	It was an eye opener. What happens if I lose my job, is that the end of the world or is it a good opportunity to move on and do something else?	I was freaking out	I think it was about changing how you look at things, is the glass half empty or half full?	And right now for the first time in a year, I'm over a 100% in sales. I'm not really sure what's working but whatever it is I am doing it
Building resilience	It was good because I was struggling with it for a really long time	I do feel like I was able to have an aha	It was scary and sort of terrifying and then also it was liberating	I started to realise that I was separate from them (ugly voices) and I was able to acknowledge when certain ones spoke that that wasn't necessarily me	... feels much more manageable. It gave me the foundation I was looking for to feel a little more grounded and to take the steps that I was thinking about taking anyways

Table 2. Non-insights.

Goal	Problem	Non-insight response	Behaviour
Meaningful relationship	I would date someone and it just wouldn't work out and I didn't really understand why. So I took a step back so I wasn't working on it for awhile	Girlfriend and I met a couple and kind of adopted them as our vacation mom and dad. The lady was very maternal as well. I think I gravitate towards that. And she introduced me to her son. I wasn't even looking for it	I'm spending time with (her son) this weekend so it should be interesting.
Work and family balance	I had a real struggle with my first son when he was born and the first year of his life	Having a child really can make people vulnerable, It cracks your heart open	Today I wrote the blog about the why for the business
Career enjoyment	I was having a really tough time with it	My manager changed. So that was a huge thing too	That eased things off a bit, but it was still that I just had a couple more months

Relationship between insight, topic importance, and emotion

Based on the characteristics of insight, we hypothesised that topic importance and strong emotion would be present together at the moment of insight. The feedback form was structured (a) to detect presence or absence of strong emotion at a moment of insight, and (b) to track topic importance using a 10-point Likert scale. We proposed logistic regression analyses to examine whether topic importance and presence of emotion significantly predicted moments of insight vs. non-insight. However, due to a lack of consistent reporting on these predictors, we instead conducted Mann–Whitney U or Fisher's Exact test, as appropriate. There was a significant relation between insight and emotional significance ($\chi^2 = 11.67$, $p = .003$), with participants more likely to experience emotion (ranging from sadness to joy) in cases of insight. However, this result was not corroborated by the coaches' observations ($ps > .05$). In addition, there was no significant relation between insight and topic importance for either participants or coaches ($ps > .05$). Moreover, there were no significant results ($ps > .05$) when combining participants and coaches responses.

Role of the coach

Participants frequently referenced their coaches or the coaching programme and provided specific examples of how CALC was supporting them in 33% of the reports of insight ($n = 9$). See Table 3, for examples, of direct references to the role of the coach. Names of coaches have been replaced with a generic term in the quotes provided.

Coaching feedback for reliability, and type of coaching

Coaches were asked to complete feedback forms after each session. A total of 20 forms were completed, including 11 sessions where participants had not filed a report. Of the coach feedback that could be matched to participant feedback ($n = 9$), the session summaries were consistent, and there was agreement on sessions that included a moment of insight. When the coach and participant feedback forms were examined sequentially,

Table 3. Insights evoked by coaches and coaching practice.

Goal	Impasse	Insight evoked	Emotion topic importance	Change in awareness	Change in behaviour
Quit smoking	(In the past) I would have a puff of smoke and feel really guilty and think I screwed up. I might just as well become a smoker again	(My coach)* said you put so much pressure on yourself like – who has the rules of the quitting book - is the way she put it	So I made the (quit) date my mom's birthday, so I felt accountable for it	I think it really got in my head if I slip up it doesn't mean that I've failed completely	A big one was to quit smoking and I have to say I have been successful with that
Putting myself first	(My coach) guided me in connecting with my inner leader	The moment that I realised that I have an inner leader and that I'm not alone	It was a moment of comfort and confidence	I started to feel a strength that has been missing for a while	(unspecified)
Work alignment	(My coach) coached me in digging deeper and always bringing it back to the person I am and want to be	I had a moment of sudden insight when we started to describe the values as a '10' vs. where I was in them right now	Fairly emotional	It made me realise that I can take steps to get to that '10' and that they will fluctuate	I am getting a bit better just having the boundaries ... and saying no to the things that I don't want to do
Love myself	(My coach) played a large role and kept me accountable for my actions	The thing that amazed me was the shift in energy and belief when I talked about myself in the third person vs. the first	It was a lot harder to talk about myself in the first person	It was a good exercise in starting to come from a place of strength and positivity and build out on my best version	(unspecified)

all participants had over 50% (5/9) of their individual sessions reported and 72% (39/54) of total sessions were reported.

In the feedback form, coaches were asked to summarise the session, presence of emotions, topic significance, and which CALC methods were employed during the session (adapted from Bachkirova, Sibley, & Myers, 2015). Checklist items such as whether the coach asked open-ended questions, explored client beliefs and followed-up on previous homework were compiled. All coaches reported using at least three of the checklist items during a session. Core CALC practices varied from session-to-session and among coaches in terms of fulfilment ($n = 9$), process ($n = 9$), and balance ($n = 2$).

Wheel of life® satisfaction

Using the Wheel of Life®, participants were asked at Week 1 and in follow-up to rate their degree of satisfaction from low satisfaction (1) to high satisfaction (10) among eight domains of their life including: career, money, health, friends and family, romance and significant other, personal growth or spirituality, fun and recreation, and physical environment. Based on their assessment of domains with lower rates of satisfaction, participants generated one to three goals with their coaches for the coaching sessions. As shown in Figure 2, life satisfaction scores on priority goals from the Wheel of Life®



Figure 2. Wheel of life® satisfaction before and after coaching on priority goals for participants ($N=6$).

improved from the beginning ($M = 3.80$, $SD = 1.53$) to the end of intervention ($M = 6.80$, $SD 1.86$), $t = 3.85$ ($p < .01$).

Discussion

During the coaching intervention, moments of insight occurred five times more often than in the six months prior to coaching sessions. Insights were reported at twice the rate of non-insights (27:12). The characteristics that define a moment of insight were present in all cases reported, and could be directly linked to sustained behaviour change for 56% of the reported insights during follow-up. Feedback from the coaches on their technique demonstrated that insight could be evoked during any one of the CALC coaching principles including fulfilment, balance, and process.

By evaluating insight and non-insight in relation to strong emotion, we observed the presence of insight and strong emotion together for all insights reported by participants, but this result was not matched by independent feedback from coaches. We were likewise unable to detect a significant relationship between insight and topic importance. Wheel of Life® satisfaction showed improvement from Week 1 to follow-up; however, this assessment has not been validated.

Based on recent evidence from neuroscience, it is increasingly possible to postulate how moments of insight might have taken place during CALC and the practical application of these results. Behaviours become automatic and subconscious as the associated positive and negative attribution to those experiences are strengthened (Siegel, 2010). While these automated behaviours efficiently serve the individual most of the time, they can also result in 'being stuck' in repetitive, ill-serving behaviours (Siegel, 2010). This habitual behaviour is similar to what happens when someone reaches an impasse during problem-solving. As described earlier, 'being stuck' in a left-brain logic cycle is the typical pre-cursor to having an insight, during which problem-solving has become subconscious. The goal-setting function of CALC (Kimsey-House et al., 2011) serves as the starting point to engage the topic at deeper levels of awareness to promote what has been largely subconscious (Kimsey-House et al., 2011). Although the sample in the

current study was relatively small, participants did not generate an insight without realising they had been stuck, and this characteristic was present in the accounts of insight that were reported.

Similar to prior research (Klein & Jarosz, 2011), our study found that the generation of insight did not necessarily cause a change in behaviour. While moments of insight could be directly linked to behaviour change in 56% of the cases ($n = 15$), not all moments of insight could be tracked to sustained behaviour change. While insight may play a role in the produced outcome of behaviour, more research is required to explore this outcome.

Study limitations

In adopting the lens of neuroscience to explore the topic of insight, other equally valid viewpoints from psychology and somatic approaches have been excluded, which may have limited the discussion. A potential limitation of the current study was whether gender may have played a part in the generation of insight since all participants were female. However, a review of coaching efficacy to date has summarised that gender of participants does not alter the effectiveness of life coaching (Passmore & Fillery-Travis, 2011). Another limitation was that the *Women Together* programme was not exclusively phone or in-person coaching, and it had optional group activities that could not be controlled in the study design. The study had a small number of participants, and, as a convenience sample, this may have impacted the findings.

The study analysis did not provide for multiple qualitative data interpreters, which may have decreased study credibility. A more thorough method of collecting session data would have been audio recordings, but we were concerned that this might have limited the relationship and candour achieved between coach and participant, resulting in fewer insights.

Conclusions

Insight is important for personal development, and CALC creates conditions that increase the potential frequency of insight. This is one of the few coaching studies to examine the relationship between insight and behaviour, and, to our knowledge, the first to be designed prospectively. While life-coaching efficacy has been established by other studies (Passmore, 2014; Theeboom et al., 2014), and both coaching and mindfulness have experienced uptake in the workplace (Chapman-Clarke, 2016) insight has been difficult to study outside of the lab since it cannot be produced predictably. As technology in wireless EEG evolves, future studies on this topic could include coaching with neurofeedback and objective measures of moments of insight during coaching. As the fields of both coaching and neuroscience expand, they foster understanding of how left-brain logic and right-brain intuition may be considered complementary to human growth, and that integration is key to adaptability (Betz & Kimsey-House, 2015).

Disclosure statement

No potential conflict of interest was reported by the authors.

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