

**Enhancing the efficacy of coaching: defining and
exploring reflexive hindering using an applied
neuroscience approach and a developed infographic**

Denise Lyall

Supervised by: Dr Annette Fillery-Travis, Prof Paul Brown

Submitted in partial fulfilment for the award of the degree of Doctorate in Professional
Practice

University of Wales Trinity Saint David

2020

Abstract

This research explores the phenomenon seen in some executive coaching programmes where the coachee is motivated to achieve their outcomes but is unable to progress, although this inaction appears to be non-conscious. From the coaching literature review it was clear that, although seen, there was no substantial body of evidence for it. However, compassion focused therapy literature acknowledged a comparable phenomenon and advocated that a subject to object shift, through neuroeducation, facilitated progress. This phenomenon within coaching has now been called 'reflexive hindering' and an associated neuroscience-based infographic was developed for neuroeducational purposes.

Taking a constructionist stance and pragmatic approach, semi-structured interviews and rating questions were employed to elicit the experience of using the infographic by ten executive coaches. The subsequent analysis shows the versatility of the infographic. It was viewed as enlightening and well-referenced although its visual appearance requires refinement. All coaches rated the session as beneficial; five rated it as strongly beneficial. Six benefits were stated for both coachees and coaches, including that the infographic facilitated an immersive and instructive neurobiological exploration that created real insights for the coachee. Other coachee benefits included: invigorated motivation to act; more hope towards changing; and enhanced self-compassion. Coach benefits included: greater credibility, a deeper understanding of neuroscience and enabling them to elicit previously unspoken insights.

The research demonstrates that the infographic allows coaches to work with reflexive hindering and to improve the efficacy of their coaching with it present. The research generated a new coaching process for achieving this and also contributes the concept of reflexive hindering to the field of coaching. Furthermore, there are recommendations for coaches, coaching bodies and training providers with respect to the use of neuroscience within coaching.

Acknowledgements

I would like to acknowledge a number of people who have contributed in various ways to this research. Doctoral research is seldom a lone venture and I am appreciative of the contribution from the following people who have shared this journey with me.

Two groups of people have played significant roles and without whom this thesis would not have been possible. First and foremost, I would like to thank my two supervisors, Dr Annette Fillery-Travis and Prof Paul Brown, for their guidance, encouragement, patience and thought-provoking conversations. Also, I am indebted to my research participants who willingly gave up their time to aid me. I was touched by their commitment and enthusiasm for what I was seeking to achieve and their support for its success.

I would also like to thank a number of my colleagues for their contributions. My doctoral colleagues (Phyllis Campagna, Sam Humphrey, Kate Lanz, Jane Short) for being a morale-boosting support group and acting as critical friends; both were appreciated and much needed. Also, to my coaching colleagues, Ian Saunders Charlie Wilson and Jane Emanuel, who individually acted as sounding boards for various concepts and quandaries. Finally, I would like to thank my son, Will, for the impromptu tutorial conversations on various aspects of thesis writing - a number of chapters have benefitted from his notes and insights.

Table of Contents

Declaration Sheet.....	i
Abstract.....	ii
Acknowledgements.....	iii
List of Tables.....	viii
List of Figures	ix
1 Introduction and background.....	1
1.1 Introduction.....	1
1.2 Executive coaching	2
1.3 My background: From engineer to executive coach.....	3
1.4 Why this research: Coachees who hinder their own progress	4
1.5 Steeping myself in neuroscience	11
1.6 Summary.....	14
1.7 Thesis layout.....	15
2 Literature review	17
2.1 Introduction.....	17
2.2 Reflexive hindering and related terms	17
2.3 Readiness for coaching and coachability	21
2.4 Coachee inner obstacles during coaching.....	32
2.5 Insights into reflexive hindering from pertinent personal change and therapy literature	60
2.6 Compassion focused therapy	67
2.7 Neuroscience-informed brain models commonly used within coaching ..	71
2.8 Coaching and neuroscience.....	76
2.9 Summary of the reviewed literature	78
2.10 Reflexive hindering outline updated	81
2.11 Aims, objectives and outcomes.....	92

3	Research project design, from ontology to methods and project activities.....	94
3.1	Introduction.....	94
3.2	The research process.....	95
3.3	Ontology	97
3.4	Supporting examples for the choice of epistemology and theoretical perspective	99
3.5	Epistemology	103
3.6	Theoretical perspective	106
3.7	Methodology	110
3.8	Methods: Data collection	111
3.9	Methods: Data analysis	120
3.10	Ethics.....	121
3.11	Project Activity	128
4	Findings.....	132
4.1	Introduction.....	132
4.2	How the data has been analysed	133
4.3	Contextual data	135
4.4	Usage of infographic elements.....	137
4.5	Rating questions responses.....	142
4.6	The coach’s experience of using the infographic in the coaching session	144
4.7	The main themes	162
4.8	Summary of findings.....	175
5	Discussion.....	176
5.1	Introduction.....	176
5.2	Coachee inner obstacles and reflexive hindering	176

5.3	Enhancing the coaching of reflexive-hindering coachees and their ability to make progress	178
5.4	Using the infographic within a coaching session	181
5.5	The infographic and its content	186
5.6	Advocacy for the infographic and its coaching session.....	190
5.7	The quality of the conversation - beyond education	191
5.8	A process for enhancing the efficacy of coaching when reflexive hindering impedes progress	195
5.9	Neuroscience and coaching.....	197
5.10	Limitations	198
5.11	Summary.....	198
6	Conclusions.....	200
6.1	Introduction.....	200
6.2	Aims and objectives.....	200
6.3	Reflexive hindering.....	201
6.4	A purposeful neuroscience-based coaching conversation.....	202
6.5	Neuroscience and coaching.....	205
6.6	Recommendations for coaches	207
6.7	Recommendations for other coaching stakeholders	211
6.8	Recommendations for future research	212
6.9	Disseminating the research	213
7	Personal reflections.....	215
7.1	Introduction.....	215
7.2	Being accountable	215
7.3	Appreciating the value of each chapter's topic.....	215
7.4	Self-development	217
8	References.....	219

9 Appendices	240
Appendix 1: Choice of terminology	241
Appendix 2: The Delphi Study and rationale for change of project	244
Appendix 3: Other ‘readiness for coaching’ questionnaires	253
Appendix 4: Johnson and Onwuegbuzie’s (2004) overview of pragmatism	254
Appendix 5: Reflexive hindering infographic references.....	257
Appendix 6: Practitioner-orientated articles	262
Appendix 7: Initial participant invitation	264
Appendix 8: Participant information pack.....	265
Appendix 9: Interview guide	269
Appendix 10: Context data	272
Appendix 11: Thematic analysis theme statistics	274
Appendix 12: Completed UWTSD PG2 Ethics form	277

List of Tables

Table 1: General 'readiness for coaching' themes from six analysed questionnaires	24
Table 2: Coaching approaches and coachee inner obstacles	32
Table 3: Association of Coaching Global Code of Ethics May 2018	122
Table 4: Emergent Themes from the thematic analysis	134
Table 5: Predetermined Themes from the thematic analysis	135
Table 6: 'Reasons for using the infographic' subthemes from the thematic analysis....	143
Table 7: 'Familiarity with the infographic is needed' subthemes from the thematic analysis	159
Table 8: 'Process' subthemes from the thematic analysis.....	160
Table 9: 'Impressions of efficacy' subthemes from the thematic analysis	162
Table 10: 'Value derived from using the infographic for the coachee' subthemes from the thematic analysis	165
Table 11: 'Value derived from using the infographic for the coach' subthemes from the thematic analysis.....	168
Table 12: 'Views on the infographic' subthemes from the thematic analysis.....	171

List of Figures

Figure 1: Examples of how reflexive hindering can manifest during a coaching programme.....	5
Figure 2: Pre-coaching Questionnaire example (Yates, 2018).....	22
Figure 3: Coaching Readiness Assessment example (Learning and Performance Solutions, 2012)	23
Figure 4: Questionnaire 'Exploring Clients' Readiness for Coaching'. (Kretzschmar, 2010.)	25
Figure 5: The Korn/Ferry Coachability Model (Bacon and Wise, 2011, p. 37).....	26
Figure 6: Coachability Model - levels and descriptors (Bacon and Voss, 2012)	26
Figure 7: Characteristics that coaches should pay attention to according to Franklin (Franklin, 2005, p. 197)	29
Figure 8: Questioning exercise to challenge self-limiting beliefs (Wilson, 2014).....	40
Figure 9: The precision model (Alexander, 2010, p. 88)	41
Figure 10: Cognitive Model used by NLP and CBC (Willson and Branch, 2006)	42
Figure 11: The ABCDE Exercise from CBT (Willson and Branch, 2006, p. 308).....	44
Figure 12: A 'vicious flower of panic' example. (Willson and Branch, 2006, p. 105).....	45
Figure 13: Zone of Proximal Development diagram	46
Figure 14: Wilson's ethical considerations for a coach using TA models and concepts (Wilson, 2019, p. 301)	50
Figure 15: Functional ego states model in TA (Manu, 2014)	51
Figure 16: OK Corral's Life Positions (Joines and Stewart, 2002, p. 120)	52
Figure 17: Diagram illustrating the depth of discussion related to coachee inner obstacles during coaching.....	55
Figure 18: Relationship between ego, narrator and miniselves diagram (Bachkirova, 2018)	58
Figure 19: A map of the theory and practical approach of Developmental Coaching (Bachkirova, 2018)	59
Figure 20: Immunity to Change Four Column exercise (Flora, 2017)	62
Figure 21: The nine subsystem of ICS and the classes of information processed at each subsystem. (May and Barnard, 2004, p. 295).	65

Figure 22: Diagram of the interactions between different emotional regulation systems (Gilbert, 2010, p. 17)	70
Figure 23: The Triune Brain (Farley, 2008).....	72
Figure 24: Triune brain (Quillette Pty Ltd, 2018)	73
Figure 25: Kahneman's Thinking fast, thinking slow model (Schmelkin, 2018).....	74
Figure 26: The Chimp Model (Chimp Management Ltd, n.d.)	74
Figure 27: High Road and Low Road model (Schwartz, Thomson and Kleiner, 2016).....	75
Figure 28: Frontiers in Neuroscience online journal sections (Frontiers Media S.A., n.d.)	77
Figure 29: A schematic for subjectively assessing the extent of reflexive hindering and its possible impact on the coaching.....	84
Figure 30: Example of a psychoeducation infographic (Jones, 2014).....	86
Figure 31: Respiratory Infographic example (Carolina Biological Supply Company, n.d.)	87
Figure 32: The Reflexive Hindering Infographic.....	91
Figure 33: Crotty's Four Elements of the Research Process. (Reproduced from Crotty, 1998, p. 4)	95
Figure 34: Saunders, Lewis and Thornhill's 'Research onion' (Saunders, Lewis and Thornhill, 2019, p. 130)	96
Figure 35: The research process for this research (Drawn from Crotty (1998: p. 2-9) and Kawulich and Chilisa (2012))	97
Figure 36: Axiology of pragmatism (Saunders, Lewis and Thornhill, 2019, p. 137).....	109
Figure 37: Flow of the activities leading up to and including data collection for this research project	112
Figure 38: Phases of a thematic analysis (Robson, 2011, p. 476).....	120
Figure 39: Example of a Bar chart	121
Figure 40: Phases of thematic analysis (Braun and Clarke, 2006)	134
Figure 41: Proportional symbol map indicating how many coaches mentioned an infographic element at least once	139
Figure 42: Proportional symbol map indicating the collective conversational emphasis placed on an infographic element	141
Figure 43: Bar chart of aggregated Rating Question Two responses	142
Figure 44: The Conscious Competence Learning model developed by Burch whilst working for Gordon Training International in the 1970's (Mehlberg, 2015).....	183

Figure 45: A comparison of the four levels of coaching maturity in coaching conversations. (Clutterbuck, 2010, p. 76).....	184
Figure 46: Wilson’s ethical considerations for a coach using TA models and concepts (Wilson, 2019, p. 301)	185
Figure 47: Prevalent conceptual cognitive model used within coaching	189
Figure 48: The MERE Coaching Conversation for coaching when reflexive hindering impedes coaching progress.....	196

1 Introduction and background

1.1 Introduction

This study aims to investigate how to improve the coaching of a particular subset of executive coachees as well as outlining a phenomenon that hampers them from achieving their full coaching outcomes. These coachees are motivated to participate in their coaching programmes and yet sometimes seem unable to progress despite logically understanding the steps they need to take. Although these desired behaviours are natural to other people, it appears that at some level these coachees find it questionable as to whether they can also act in these ways. Thus, their nonconscious response is to curb their attempts at trying to change their current behaviour.

I am an experienced executive coach of twenty-five years and have coached people within most business levels, functions and sectors. I therefore encounter such coachees from time to time and my current coaching abilities create varied and limited success with them. From my experience I have come to the view that this is an acquired involuntary response by the coachee and one that impacts them more than they realise. My perception is that this phenomenon is not currently described within the coaching literature. Therefore, I have become curious as to whether understanding more about the brain could in some way enhance my coaching of this coachee subset. A coaching and neuroscience literature review would allow me to deepen my understanding of this phenomenon and possibly elucidate methods for enhancing my coaching of these coachees. Overall, I wanted to systemically explore whether this would benefit my coaching practice and that of other executive coaches who also encounter and struggle with these coachees. This thesis is the result of that exploration.

In this introductory chapter I outline executive coaching and the aspects related to this research as well as overviewing my background. I give my reasons for completing the doctorate and begin to define the term 'reflexive hindering'. I then go on to describe how I steeped myself in neuroscience and why I did this, before concluding the chapter with a brief outline of the other thesis chapters.

1.2 Executive coaching

Executive coaching is a well-established and growing multibillion-dollar global market (Mackie, 2015; Grover and Furnham, 2016). It is a one-to-one development intervention for individuals within organisations (Grover and Furnham, 2016; Athanasopoulou and Dopson, 2018) aiming to support learning and behaviour change by a series of purposeful conversations between the coach and coachee (de Haan, Culpin and Curd, 2011; Grover and Furnham, 2016). Such conversations explore and challenge a coachee's thinking or awareness of an issue or context allowing new insights, perspectives or constructs to emerge that lead to new behaviours and solutions (Grover and Furnham, 2016; Cox, Bachkirova and Clutterbuck, 2018). Therefore, a person comes to coaching because they want to be or do something differently and feel they cannot proceed unaided. (Franklin, 2005; Cox, Bachkirova and Clutterbuck, 2018; Palmer and Whybrow, 2019). Coaching assignments consist of a number of meetings covering what the change looks like, what needs to be different, what helps or hinders that happening, and working on achieving the desired change. The length and number of the meetings varies, although typically they are of one to two hours in duration and three to six in number. They can be conducted in-person, via telephone or virtually.

The purpose of the coaching can range from the acquisition of new skills (skills and performance coaching) through to work seeking to effect change at the deepest level in the consciousness i.e. to enable a shift in how the self perceives, or is perceived, and the behaviour change that that creates. The latter are referred to as developmental and transformational coaching. (Wellbelove, 2016; Cox, Bachkirova and Clutterbuck, 2018; Palmer and Whybrow, 2019).

Often coaching is an additive process as it creates a space for and focuses upon expanding a behavioural repertoire or broadening horizons. In skills and performance coaching this may stretch and challenge a coachee's thinking or deliver insights. But this is predominately in broad alignment with the coachee's concept of themselves and feels a natural addition to whom the coachee believes they are (Grant and Cavanagh, 2018). This makes the coaching effective as the coachee is more readily motivated to achieve it.

In contrast, developmental and transformational coaches often work with more fundamental changes that push the boundaries of what the coachee feels is comfortable. This coaching is predominantly about the coachee's style and how they are acting through who they are. Therefore, these coaches are often working with more deep-seated aspects of the coachee where changes do not necessarily feel like natural extensions of themselves (Grant and Cavanagh, 2018), however much the change might consciously be thought beneficial by the coachee. These changes are often resisted more forcibly by the coachee as, thus far in their life journey, the existing behaviour has been largely beneficial to the coachee. (Flaherty 2005; LeDoux 2016)

1.3 My background: From engineer to executive coach

I graduated with a degree in electrical and electronics engineering and joined Mars Inc. as a control engineer. I held a variety of Operations management roles over the next fourteen years, including Production Manager, Quality Manager and Learning & Development Manager. Mars was strong on leadership development and in 1992 I completed my initial coach training. I used these skills to coach my team and various peers. I also co-trained the coaching workshop alongside the corporate trainers.

In 2000 I left Mars and became a full-time executive coach, business facilitator and leadership development trainer. In the following thirteen years I focused on developing my coaching skills and my understanding of people's personalities and drivers. For example, I trained in Neuro-Linguistic-Programming (Knight, 2010) and Clean language and Emergent Knowledge coaching (Dunbar, 2016). I also became accredited in NEO (Costa and MacCrae, 1992) and Hogan (Hogan, Hogan and Warrenfeltz, 2007) personality profiling.

In 2005 I became accredited in McClelland's Social Motives (McClelland, 1975) and Abigail Stewart's Social Maturity Scales (McClelland, 1975) profiling. Unusually, this is an operant test and uses a coding system to determine the person's motive profile. This was a significant enhancement to my understanding of people's actions through learning how implicit motives drive behaviour. It also enabled me to affect change through modifying their specific thought patterns via writing exercises and analysis. It made a dramatic difference to my coaching as I was able to respond to and work with the coachee's longer-term pre-conscious thinking patterns rather than the behaviour at

that moment. It also allowed me to explore their upbringing and build my understanding of how that shapes subsequent thinking and behaviour.

In 2013 I decided to concentrate my coaching assignments on a particular type of coachee as I had a wealth of coaching experience and a deeper understanding of people. (I typically complete over two hundred and fifty hours of coaching and upwards of one hundred hours of continuous professional development per annum.) I therefore chose to coach people whose behaviours or attitudes are considerably impacting their performance or their self-belief and which may be affecting others. Often, I find the coachee is not aware of what is truly driving them in these situations, although they may be aware of the thoughts and behaviour it drives and the consequences of those. Therefore, I am predominantly working with more deeply ingrained aspects of the coachee where the change required is often more fundamental and pushes the boundaries of their current beliefs and capabilities.

1.4 Why this research: Coachees who hinder their own progress

1.4.1 Their brain is their biggest challenge

Occasionally I find that a coachee is highly motivated and ready for change and yet seems to be unable to progress. They discuss the actions they can take although they make little or no progress. This inaction does not seem to be conscious so they appear outwardly engaged and yet are inwardly impeded. The way in which I have found this manifests itself varies (Figure 1): It can happen during most coaching sessions, or when exploring just one aspect, or only when they attempt to take a different action to their usual one. It ranges from a typical coaching assignment where it is negligible, to ones where it is more noticeable and finally to where it considerably hampers the coachee's progress.

I have observed that sometimes the coaching conversation appears to create a fearful or anxious response and the coachee begins to feel that most actions are implausible. In other cases, the coachee may logically understand their predicament but displays bafflement as to the reason why they cannot progress. Often, they could see how they themselves were hindering their own progress even if they were not successful in

changing that. They therefore seem locked into their current habit despite knowing logically they could or need to behave differently. I have also observed coachees who seem unaware of how they are impeding their own progress as their actions appear congruent to them. They appear fused with their reaction, in that 'it must be true that this is unreasonable or scary to do, as I am feeling anxious'.

Figure 1: Examples of how reflexive hindering can manifest during a coaching programme

All these coachees consciously desired to achieve their outcomes and were enthusiastic to do so. (Coachees names have been changed for anonymity)

A: Kadrina – one coaching objective was to input her useful thoughts/ questions into meetings; being more extrovert had been suggested by her line manager. Kadrina became quieter and more hesitant as we discussed what this new behaviour may look like and possible actions to achieve this. She stated that she did not want to become “someone she wasn’t” and it became difficult to generate and discuss possible actions. Kadrina was keen to keep searching for an action that she felt *was her* and would achieve her goal, despite how ineffective this became. There were comments such as, “do people really do that?” or “yes I know others do that but ...”. Kadrina was unable to articulate why she could not do these actions and she did not appear to perceive how the feeling was affecting her thinking. For her, these were scary actions to take and this appeared to be immutable - it was as if she thought, “I am feeling scared so I would be unwise to take these actions because otherwise I would not feel scared”.

B: Alan – one coaching objective was to be able to make decisions faster with less information. During discussions as to what this would be like if the coaching was successful, Alan said, ‘I have a knot in my stomach just thinking about having to do that’. This feeling intruded into the outcome conversation and created doubts as to how much improvement was feasible. Yet, Alan enthusiastically spoke about the benefits he would have in achieving his outcome if the feeling was not triggered. In the workplace however the anxiety drove unhelpful behaviours. Alan felt he had minimal ability to control it and thus he did not seriously seek to reduce it in the moment even though we had discussed options during the coaching sessions.

C: Satoshi - one coaching objective was to be in a position to get promoted, although he was currently perceived as 'too hands-on' and less of a leader. Satoshi logically realised that he was doing too much of his team's work. However, he believed that sometimes it was just more efficient or produced higher quality work if he did it himself. Satoshi also acknowledged that, in some way, he enjoyed doing the tasks he took away from others. In the coaching sessions he understood what he was doing and how this was detracting from his leadership presence. Various ways in which he could behave differently were discussed and this led to certain actions for practicing his chosen new behaviours. However, Satoshi had taken very few of the actions when we reviewed them in the next session. He always had a rationale for reverting back to his usual behaviour despite understanding that this was hampering his ability to change. Yet, he was unable to articulate why it continuously happened or suggest how the cycle would be broken.

D: Mary – one coaching objective was to improve her relationship with key stakeholders. During the coaching conversations the focus was completely on the failings of the key stakeholders, the pressures within the business and, therefore, how Mary's responses were justified. This was despite Mary wanting to be recognised for her achievements by these stakeholders and to be more included by them. She was very engaging and collaborative with her team but she was unable to articulate why she was responding so differently with her key stakeholders and also with her peers. Nevertheless, she was very certain in her view of the world regarding these stakeholders and that it was unquestionably correct. Furthermore, Mary was unable to connect this to how it was influencing her behaviour with these stakeholders and how that was adding to the deterioration of the relationships. Her view was that she was acting accordingly as they were acting manipulatively and that any shift by her would require her to become as unscrupulous as they were. Overall, it was implausible to Mary that she could, or should, change how she communicated without appearing to collude with these stakeholders. It was if she could theoretically understand what she needed to do but was bafflingly unable to apply that to these stakeholders.

I felt that it might be beneficial for these coachees if I could have a conversation about the seemingly contradictory thoughts and behaviour that were occurring for them. However, I found this a difficult conversation to unpick as I was unable to help them take an objective view of it even with my experience of using McClelland's (McClelland, 1975) and Stewart's (McClelland, 1975) thought-patterns. Also, these did not seem to adequately explain the apparently non-conscious instinctive responses that were occurring at that moment. Overall, I made limited progress with these coachees despite my wealth of experience and reflecting on my observations of their responses.

I therefore started to consider what else it might be useful for me to learn about in order to enable these coachees to progress their coaching goals. I had at this point started to read some books about the adaptability of the brain and how its development is affected during the early years of life. Thus, I began to explore whether the responses may be usefully described neurobiologically, as ultimately thoughts, behaviours and emotions emanate from neurobiological patterns¹ and processes. In my own thinking I had started to call these observed responses 'self-hindering' as the coachee seemed to be hindering their own progress. I began to think of this, through reading about the brain, as signifying that their brain was their biggest challenge in achieving their coaching goals.

The term 'self-hindering' was later changed to 'reflexive hindering' after feedback from a number of coaches about the implications of using the word 'self'. However, I felt the term needed to convey certain aspects of the concept I was observing. These are that it is:

- not conscious or voluntary
- within the coachee
- hampering progress towards their conscious goals

'Hindering' seemed a suitable choice as it describes 'something being hampered by something' ('Hinder', 2019). It does not denote the nature or severity of the impediment nor does it suggest intent or emotion on behalf of what is causing the

¹ Neurobiological patterns: All-inclusive term to capture how the brain functions, including chemicals within the brain, synaptic pathways, brain oscillations, epigenetics and any other element that contributes towards the functioning of the brain.

impediment. I chose 'reflexive' as it describes an involuntary, nonconscious and instinctive response ('Reflexive', 2019). Appendix 1 outlines all the options I explored before using 'reflexive' and 'hindering'.

1.4.2 Reflexive hindering and the brain

In June 2014 the opportunity arose for me to learn about certain neuroscience aspects of the brain through the Association of Coaching's ten-month programme called 'The Science of the Art of Coaching: Neuropsychology for Coaches' (Brown and Brown, 2014). I learnt about certain fundamental brain concepts and regions, neurochemicals and certain case studies and theories during the programme (Brown and Brown, 2012). This new understanding deepened my thinking about the concept of reflexive hindering to include aspects about brain development and brain function.

Consequently, I reflected upon how there is a point in coaching where the change required is more fundamental and pushes the boundaries of what the coachee feels is comfortable. These coaching conversations can trigger conscious or nonconscious reactions for coachees that are aimed at maintaining the status quo and therefore hamper their progress (Flaherty, 2005; Hawkins and Smith, 2006). There are certain aspects of the brain that create how we perceive and respond to the world. These deeply embedded neurobiological mechanisms are constructed during our formative years and we are mostly unaware of this happening. They carefully capture how we learn to survive in the world and thus become our way of navigating life. We resist significant changes to these more forcibly because we feel that we have good reason to have developed them. These aspects collectively help us to survive and thrive in our daily lives and continuously influence our responses and thoughts. (Flaherty, 2005; Gilbert, 2013; LeDoux, 2016; Cozolino, 2017)

During our development the neurobiological responses were rational (made sense at the time) and some are still pertinent. Some might have been in response to a misrepresentation of a situation, while others become less relevant in the process of becoming grown-up and when the environment has changed. However, the initial neurobiological responses can be deeply-seated and predominately nonconscious such that we feel unable and unwilling to change or control them. (Flaherty, 2005; Gilbert, 2013; Shabi and Whybrow, 2019)

Usually we understand that we have a perception of a situation which affects how we view and react to it. The more comfortable we feel about the consequences of changing, the more we can embrace that change. But the neurobiological response not to change becomes more compelling the more the brain perceives that the situation might actually be threatening. Therefore, we view making a change as too risky and are more likely to decide that in our existing behaviour we are responding appropriately. What we are often unaware of however is where this belief emanates from and why those responses are as they are. (Flaherty, 2005; Gilbert, 2013; Shabi and Whybrow, 2019)

1.4.3 The purpose and scope of the research

I felt therefore that reflexive hindering might be connected to these neurobiological responses that seem to be at odds with the coachee's consciously desired coaching outcomes. Consequently, I wanted to help these coachees understand how they may be hindering themselves and what they were really up against, i.e. the adaptive ability of their own brain. Also, I wanted to understand how this may manifest itself during coaching and what might give them the best chance of progressing their coaching goals. The Association of Coaching's programme (Brown and Brown, 2014) had given me a broad introduction to neuroscience. But I now felt that I needed to understand more pertinent aspects with the aim of developing my initial understanding of the observations I had labelled 'reflexive hindering'.

It is for these reasons I undertook my Doctorate in Professional Practice. I wanted to explore the concept of reflexive hindering and how, through a better understanding of brain function, I might enhance my coaching to enable these coachees to maintain their momentum when reflexive hindering occurs. I felt this was valuable to do as these coachees want to achieve their coaching goals and often just want to do what many other people do quite naturally. From an organisational viewpoint a coaching programme is an investment in time and money (Kretzschmar, 2010, Mackie, 2015) as well as fulfilling a need to develop employees. Whilst coachees deemed unsuitable can be vetted out, research that enables more employees to develop through coaching would be beneficial to the organisation and the coachees.

I had also not come across examples of this specific subset of coachee during my continuous professional development and wider reading. I had found that the coaching

literature, training and community appeared to be predominantly orientated towards the coaching approach, contracting and relational aspects. Given that coaching is coachee-focused, there seemed to be a paucity of coaching literature that focused on the coachee per se other than how coaches might attend to coachees through their coaching approach (Stokes, 2015). Currently, understanding the 'inner workings' of the coachee predominantly comes from personality profiling tools or through high-level conceptual models such as 'thoughts and feelings driving behaviour'. It seemed to me that there was a gap in the literature. I therefore felt there was an opportunity to raise awareness of reflexive hindering within the coaching community and to potentially provide a neuroscience-informed tool or process for enhancing coaching efficacy when reflexive hindering occurs.

In order to complete this research, I made the assumption that I could find or design a useful neuroscience-based artefact relevant to reflexive hindering that was suitable for use by coaches. I also assumed that there would be a number of experienced executive coaches willing to participate.

The research project could have been quite expansive by including many types of coaching, such as life coaching, as well as executive coaching. It could also have been a longitudinal study, or have involved coachees as well as coaches, or it could have focused on delivering a comprehensive and in-depth understanding of reflexive hindering. However, I felt there were some aspects that it would be sensible to research beforehand and that brought useful boundaries to the scope of this research. Firstly, I limited the scope to executive coaching as this is the realm within which I have most experience and a professional network of experienced colleagues to draw upon. Secondly, I wanted to focus on making some difference to my coaching of these coachees in the time I had available. Therefore, I did not want to purely focus on gaining a comprehensive, in-depth understanding of reflexive hindering. I wanted to know enough to be able to generate a tool or a method that would enhance my coaching. I also wanted my main research focus to be on real-world application: namely, exploring how to use that tool or method and investigating the difference it made to progressing the coaching outcomes when reflexive hindering is occurring. I also thought it was prudent to prove the potential value of doing that before engaging coachees in a

longitudinal study. Therefore, these are the boundaries that I set in pursuing this research.

1.5 Steeping myself in neuroscience

1.5.1 An attempted Delphi Study

Initially I had decided upon a different research project although my overall purpose remained the same. This section overviews what that project was and the reasons for terminating it. Appendix 2 documents this more fully. However, the overriding benefit of having attempted this initial project is that it drove me to understand neuroscience to a greater depth than I might have otherwise reached. I believe this gave me a strong foundation and knowledge-base for the research project I subsequently completed.

The initial research

I discussed various research options with my neuroscience supervisor and settled upon an initial research focus that I found interesting. This was to develop an understanding of the neurobiological mechanism enabling the brain to determine, from all the various inputs, which actions to take; thereby creating a coherent and consistent personal world. I sensed that investigating such a neurobiological mechanism might enhance my understanding of the challenges that reflexive-hindering coaches face during coaching and give insights as to how I might correspondingly tailor my coaching practice.

Therefore, I sought to complete a modified Policy Delphi study to investigate what neuroscientists might consider this neurobiological mechanism to be and garner their views on the possible options.

A modified Policy Delphi Study

The modified Policy Delphi (Turoff, 1975) is a qualitative methodology used to construct a shared reality from the realities brought by each participant. It is used for complex or ambiguous issues where there may be incomplete or conflicting information. It is also a cost effective and realistic way to solicit information from globally dispersed and busy neuroscientists. However, the enrolment and retaining of participants is known to be problematical (Keeney, McKenna and Hasson, 2011).

The method requires that, in Round 1, an anonymous knowledgeable group provide major concepts of interest and supporting evidence for consideration. This round was to

have consisted of interviews with neuroscientists to elicit their current considered opinion on the research topic.

Rounds 2 and 3 were to have been conducted via email questionnaires to an expanded anonymous knowledgeable group. Round 2 would have built upon Round 1's concepts, adding information on cogency, relevance and plausibility. In Round 3, the participants would have been asked if they wished to modify their responses given the group's median responses. This would therefore have given a snapshot in time rather than a right answer or consensus. (Keeney, McKenna and Hasson, 2011)

1.5.2 Stepping into the world of neuroscience

I decided that I needed to educate myself in the field of neuroscience before starting the Delphi Study. There were three reasons for this: it may elucidate the neurobiological underpinnings of reflexive hindering; to shape the nature of my research question; and so that I would have a level of credibility and understanding when interviewing researching neuroscientists for the Delphi study. I therefore undertook a considerable exploration of this field above and beyond what most coaches would expect to complete. The focus was on literature that might describe a possible neurobiological mechanism that determines what actions individuals take from all the various inputs. This literature included books written by neuroscientists, various research papers and an undergraduate neurobiology textbook. I also engaged with neuroscience conferences pertinent to my area of research.

I eventually felt confident in my level of neuroscience knowledge when I was able to understand conference presentations and research papers to a reasonable level. I also felt comfortable and credible when I completed the 2018 pilot Delphi interviews with two university Professors of Neuroscience.

It is common within the field of coaching for a range of neuroscience-based workshops and seminars to be provided. Due to their nature, they typically cover popular, often simplified, brain topics and hence the inherent assumptions are essentially missed. It was therefore during my broader and deeper engagement with neuroscience that I became more appreciative of how much I did and did not know regarding the brain as well as comprehending the varied and extensive nature of neuroscience research. Furthermore, I now understood that most neuroscience research is incredibly specific

and also that many results and conclusions are more interpreted than I had realised. Some of this specificity and interpretation is due to our current limited ability to study the complexities of the brain and some of this is due to human and economic considerations. This exploration also made me question how much others in the coaching community appreciated these facets given the prevalence of the term 'neuroscience' within coaching at the moment.

Overall, I felt better prepared to undertake my research project as I had a richer and broader knowledge-base and perspective. I was also able to critically appraise the neuroscience literature and to put my research into context, which was one factor that led to the change in my research project.

1.5.3 Refocusing my research

The main factor however for changing the research project was lack of participants. At this point three batches of Delphi study invitations had been sent out to university neuroscientists, totalling one hundred and four invites. From the first batch, two participants emerged and were interviewed as pilots. However, no further participants were generated across the following twelve months. The Delphi methodology relies on at least seven expert participants and needs to be conducted over a reasonable time scale, especially where knowledge is frequently updated. (Keeney, McKenna and Hasson, 2011) Therefore, across eighteen months it became clear that the Delphi study was not going to be viable.

It also became apparent that developing such a model probably requires the diverse fields of neuroscience to be brought together. However, in reality the fields are quite specific in the topics of research they generate and also work at different levels of specificity. For example, at the level of synapses and proteins verses neural networks or functional brain areas. Bringing these together in one model was, as an interviewed Director of Neuroscience (2019) said, "a question that neuroscience was not ready for yet". He also stated that some researchers were starting to combine neurocircuits, neurochemistry, networks and oscillation work, etc together. But brain circuits change on a milli-second by milli-second basis and neurochemicals have exquisite responses to a situation. Consequently, a fully-researched cohesive model of the way the brain takes actions due to various inputs seems to be some way off.

In July 2019 I therefore decided to terminate the Delphi study as I now appreciated a number of aspects.

- I had acquired an appreciative and healthier view of the field of neuroscience by steeping myself in neuroscience. This was both in the context of what might be possible within my research and in my coaching practice.
- I had also completed a deeper coaching literature review into reflexive-hindering coachees by June 2019. This was informative and opened up new research project possibilities.
- Finally, I had learned a lot about the requirements and practicalities of being a practitioner-researcher.

Thus, I reconsidered possible options surrounding my original aim and decided to situate my research more centrally into my own coaching practice. I therefore proposed a new research project which I felt in a stronger position to embark upon and the following thesis chapters document that research.

1.6 Summary

In this chapter I have introduced the concept of reflexive hindering and my reasons for wishing to undertake this research. I have also outlined how I have improved my understanding of brain function and the field of neuroscience and how this influenced my research project.

Overall, this study is driven by my desire to improve my coaching of reflexive-hindering coachees. My intended research therefore has two facets. One is to enhance the definition of reflexive hindering primarily through the literature review. The other is to develop and explore the use of a neuroscience-based artefact with reflexive-hindering coachees and the value derived, if any, from doing so. This forms the main research project and will be completed by interviewing executive coaches who used the artefact during a coaching session.

Overall, I anticipated being able to more fully define reflexive hindering and introduce this subset of coachees into the field of coaching. I also anticipated having a neuroscience-based artefact that enhances the coaching of reflexive-hindering coachees.

1.7 Thesis layout

The thesis is structured in the following way.

Chapter 2: Literature review

This chapter reviews the coaching literature with respect to coachees who appear to hamper their own coaching progress, especially through reflexive-hindering type behaviour. This led to a review of some specific literature from the fields of personal change and therapy in order to enhance my understanding of reflexive hindering and possible research options. The review also explores the current dialogue concerning the use of neuroscience within the field of coaching. It concludes with an updated definition of reflexive hindering and the design of a neuroscience-based infographic on reflexive hindering for use by coaches.

The literature review was pivotal in shaping my research project. Therefore, the final section of this chapter outlines my research questions and objectives as it was only at this point that they were fully formulated.

Chapter 3: Research project design, from ontology to methods and project activities

In this chapter I discuss how the topics of ontology and epistemology informed my choice of research methodology and subsequent methods. I also consider the ethical implications with respect to my research project and summarise the activities I undertook.

Chapter 4: Findings

This chapter outlines the findings from the context data and interviews with the ten experienced coaches who participated in the research.

Chapter 5: Discussion

In this chapter the findings are discussed in conjunction with the literature review and a process for coaching reflexive-hindering coachees is proposed.

Chapter 6: Conclusions

In this chapter I draw conclusions from the research related to my research aims and objectives. I also propose recommendations for the wider field of coaching and for future research.

Chapter 7: Personal reflections

This chapter outlines my key learning points from undertaking this doctorate and the differences they have made to my coaching practice.

2 Literature review

2.1 Introduction

In this chapter I wanted to explore the coaching literature to see if other coaches have observed similar behaviours to reflexive hindering and what suggestions they have for handling it. I also sought to further my understanding of reflexive hindering in order to be able to define it and to see if it is possible to differentiate it from other coaching concepts. Thus, in my literature review I explored what it was not, as much as what it was. Sections 2.2 to 2.6 cover these aspects.

I felt that using neuroscience to inform my coaching would be productive when reflexive hindering was impeding a coachee's progress. Therefore, I chose to explore some of the brain models used by coaches (section 2.7) and the current dialogue surrounding neuroscience within the coaching literature (section 2.8).

Section 2.9 summarises the literature review. This leads to an updated definition of reflexive hindering in section 2.10 as well as a tailored infographic for raising a coachee's awareness of it. Section 2.11 concludes the chapter by outlining the research aims and objectives going forwards.

2.2 Reflexive hindering and related terms

Initially I searched for the term 'reflexive hindering' using a number of databases including APA PsycArticles, Emerald, ProQuest, Sage Journals online, ScienceDirect and Wiley Online Library. This was to check if the term was already in use within coaching. However, searching for 'reflexive hindering' led to no results. Any results found were due to the word 'reflexive', 'reflexivity' or 'hindering' being individually highlighted in titles from the database searches. For example, "Charitable giving and reflexive individuals: How personal reflexivity mediates between structure and agency" (Sage Journals Online. <https://journals.sagepub.com/> Accessed 02/02/2020). Also, "Hindering events in psychotherapy: A retrospective account from the client's perspective" (Wiley Online Library. <https://onlinelibrary.wiley.com> Accessed 02/02/2020).

2.2.1 Self-sabotaging

I therefore searched using the terms ‘self-sabotaging coachees’ and ‘self-sabotaging coaching clients’. I felt these terms indicated that the coachee is hindering themselves, and may be in more general use within coaching. However, the search results from the databases produced only two academic coaching articles and in both cases the term was not discussed or explored. For example, “They become side-tracked, over-committed, and over-stressed, making self-sabotaging decisions that undermine their true interests.” (Crampton, 2000, p. 7).

When I searched for those terms on Google (accessed 02/02/2020) it resulted in over three million results. Looking through the first few pages indicated that these were coaches’ or coaching company websites with links to development workshops, written articles and blogs on the topic of self-sabotaging. Three articles were chosen from the Google search to give an indication of the content on self-sabotaging. These three articles were of a reasonable length and appeared to contain a variety of information on self-sabotaging. They were randomly chosen from a number that could have been used at the point I noted that the articles were giving similar content (data saturation).

Mi (2017), Hancock (2020), and Coach Simona (2020) use some similar descriptions for self-sabotaging as used in the reflexive hindering description in section 1.4. For example, all three articles mentioned that the brain is trying to keep the individual safe. On the other hand, they all predominantly linked self-sabotaging to a lack of self-worth or limiting thoughts and beliefs. Overall, self-sabotaging appears to be used as a collective term for various ways that a person impedes their own progress on getting or doing something they want (Mi, 2017). Therefore, it is the type of self-sabotaging that is often focused on and studied, for example, procrastination, negative thoughts, self-limiting beliefs, self-handicapping or avoidance behaviours.

If self-sabotaging is used in this generic sense, then reflexive hindering might be viewed as a form of self-sabotaging although section 1.4 is positioning reflexive hindering in neurobiological terms. Each of the articles mention some link to the brain although these are high level and brief in nature. Overall, the articles predominantly worked at the conceptual level of thoughts and beliefs.

2.2.2 Procrastination

Procrastination is also term that indicates that the coachee is hampering themselves and may account for reflexive hindering. It is described as knowingly postponing a burdensome task in preference for a more rewarding or less arduous task (Neenan, 2008) or to avoid something scary or difficult (Willson and Branch, 2006, p. 131). Neenan (2008, p. 54) views procrastination as a “lack of self-management” that allows precious time to be used less productively. Therefore, it appears that the person is more cognisant of their procrastination than they might be of reflexive hindering and that it is less instinctive and more purposeful.

Neenan (2008) observes that procrastinators often become frustrated by their behaviour. These observations are endorsed by others (Pychyl and Flett, 2012; Eckert et al., 2016; Kim, Fernandez and Terrier, 2017) who link it to habitual and debilitating delaying tactics. Ellam-Dyson and Palmer (2010, p. 8) also suggest that procrastination is driven by an underlying belief and often leads to stress. Overall, the focus with procrastination appears to be on the person’s thoughts and assumptions rather than its neurobiological underpinnings. The therapy and coaching interventions also tend to reflect this, as the preferred therapy or coaching approaches are Rational Emotive Behaviour Therapy/ Coaching (Neenan, 2008; Palmer, 2009) and Cognitive Behavioural Therapy/ Coaching (Willson and Branch, 2006; Palmer and Szymanska, 2019). These use exercises to systematically work on unhelpful thoughts and beliefs.

2.2.3 Self-handicapping

The concept of ‘self-handicapping’ was described whilst exploring the procrastination literature and is sometimes used interchangeably with self-sabotaging (Kearns et al., 2008). Self-handicapping describes a person orchestrating a readymade excuse for an expected negative outcome (Ellam-Dyson and Palmer, 2010). For example, someone worried about an exam grade may complain that they should not have studied so late the night before it. This issue is then accused of creating the predicted failure, although it can also be repositioned as a triumph, despite the adversity, if the outcome is positive.

Karner-Hutuleac (2014) describe self-handicapping as a proactive and premeditated strategy to maintain the coachee’s self-esteem even when it has negative consequences. It is also linked to perfectionism especially where the person wishes to

maintain their self-image (Kearns et al., 2008). This may explain why there is a prevalence of education and sports related articles (Prapavessis et al., 2003; Kearns et al., 2008; Finez and Sherman, 2012; Karner-Hutuleac, 2014) using the term.

Self-handicapping again seems to be a more conscious activity than reflexive hindering. The literature accessed focuses predominantly on limiting thoughts and assumptions at a conceptual level and neurobiological underpinnings were not discussed.

2.2.4 Resistance to coaching or change

Resistance to coaching was another term that emerged whilst reading the literature. This was explored further as reflexive hindering could be termed 'resistance' in common coaching parlance. It was found to encompass various coaching issues (Hart, 2001; Gastelum, 2013; Harakas, 2013) that can be broadly summarised as,

1. Potential coachee not wishing to participate in coaching.
2. Circumstances arising which cause conflicts of interest or take priority, in terms of time and energy.
3. Issues created by the coaching approach or relationship that cause the coachee to become argumentative or frustrated, thus adversely affecting the coaching outcomes. Coaching may be prematurely terminated.
4. Various resistant behaviours due to uncertainty, fear or anxiety related to the coaching outcome.

Points 1, 2, 3 and relevant aspects of point 4 are discussed in the coaching literature on 'readiness for coaching' or 'coachability' and are covered in section 2.3. This section also considers whether reflexive hindering is predominately due to the coachee not being 'ready' for coaching.

The term 'coachee inner obstacles' will be used in this review to denote point 4's characteristics that occur during coaching rather than prior to it commencing. The term denotes impediments to progress that are created by the coachee's inner thoughts, beliefs and assumptions in relation to the coaching outcome. Harakas (2013) outlines psychotherapy's various positions on resistance as protection against emotional pain, avoidance of changing one's interpretation of the world, and unwillingness to significantly raise self-awareness and explore the implications of that. Similar phrases

are also found within the coaching literature reviewed (Passmore, 2010; Cox, Bachkirova and Clutterbuck, 2018; Palmer and Whybrow, 2019). It is likely that reflexive hindering could be a response to these impediments during coaching. Therefore, two questions were posed in order to conduct the main part of the review. These were, 'What does the coaching literature say about coachee inner obstacles?' and 'How does it suggest navigating them?'. Various practitioner books, journal articles and academic articles were considered and form section 2.4 of the review.

2.3 Readiness for coaching and coachability

Coaching is a multibillion-dollar business (Mackie, 2015) where coachee dropout or lack of improvement can be costly for organisations and coaches (Kretzschmar, 2010; Mackie, 2015; Schermuly, 2018). Mackie (2015) suggests that there is some evidence that 'readiness-for-coaching' or 'coachability' assessments are beneficial in ensuring that the coaching is more effective. These assessments are completed by the coach or potential coachee and they aim to reduce the number of less willing or less motivated individuals embarking on coaching (Bacon and Voss, 2012; Mackie, 2015).

Kretzschmar (2010) identified that the academic literature on readiness for coaching is limited. This is also true for this review and the main literature cited is Kretzschmar's (2010) paper, a chapter by Franklin (2005) and Bacon and Voss's (2012) work. However, a Google search (completed 02/02/2020) resulted in numerous coaching websites with assessments and questionnaires for ascertaining readiness for coaching. Some of the questionnaires are coaching questions that generate a discussion with the person (Figure 2) that either shapes the need for coaching or the realisation that coaching might not be effective at the moment.

Sample Pre Coaching Questionnaire

Below is a sample pre coaching questionnaire (or rather sample questions you might want to use) however, before you are tempted to hastily copy and paste the whole page consider these tips:

- Be clear on what purpose it will serve – is it to gain information for your benefit, or it is more about raising your own client's awareness?
- Ensure each question has a clear purpose and don't ask questions you have already asked and explored
- Review and explore the responses with your client
- Don't take written answers at face value – be prepared to probe
- Tailor your questions to the needs of each client

Sample Pre Coaching Questionnaire - Example Questions

- What are the 3 biggest changes you want to make in your life over the next 5 years?
 - What 3 goals do you want to achieve within the next 3 months?
 - If anything was possible what would you wish for?
 - What have been your 3 greatest successes to date?
 - What is the greatest challenge you have had to overcome?
 - What major changes have you been faced with over the last couple of years?
 - What is most important to you in your life and why?
 - Who are most important to you in your life – what do they provide you with?
 - Is your life one of your choosing? If not who is choosing it for you?
 - On a scale of 1 -10 how happy are you with your life right now? What are the things that make you happy?
 - On a scale of 1-10 how motivated are you in your work/personal life? What motivates you?
 - On a scale of 1 -10 how stressed do you feel right now – what are your key stressors?
 - List 5 things that you feel you are 'putting up with' right now?
 - What would you like your coach to do if you struggle with your goals?
 - How will you know when you are receiving value from the coaching process?
 - What approaches motivate /demotivate you?
 - What would you like from your coach during your sessions: score on a scale of 1 -10 where 1 is not at all important and 10 is extremely important:
1. Gaining clarity of issues
 2. Understanding what is important /what motivates me
 3. Exploring and understanding what is holding me back
 4. Gaining an insight into who I am, my strengths, capabilities and potential
 5. Providing encouragement and support
 6. Helping define goals
 7. Helping to identify action and next steps
 8. Challenging you with difficult questions
 9. Providing honest and direct feedback
 10. Making you accountable for your goals

Figure 2: Pre-coaching Questionnaire example (Yates, 2018)

However, most questionnaires (Figure 3) are designed for the individual themselves to assess whether they should engage in coaching or not.

Coaching Readiness Assessment

Are you wondering if you or one of your team members is ready for coaching? Please rate yourself on a scale of one to five (1=disagree to 5=strongly agree) on each of the statements listed below. Your score will help determine your coaching readiness. Share this with your team members and help them determine their readiness for coaching.

- I can commit to being on time for coaching sessions. _____
- I am willing to accept coaching to achieve desired results. _____
- I am willing to do the work requested of me. _____
- I am open to trying on new ideas and different ways of doing things. _____
- I am willing to take responsibility and be held accountable for the results I produce. _____
- I am honest with myself and appreciate honesty in others. _____
- I am open to asking for and receiving feedback. _____
- I am willing to stretch myself outside my comfort zone. _____
- I am willing to be challenged by my coach to realize my goals. _____
- I am willing to modify or eliminate self defeating behaviors that limit my success. _____
- I am open to self reflection. _____
- I have the financial resources or they are available to me to invest in coaching. _____

Total Score _____

Scoring Key

10-22 Not ready

23-32 Coachable, as long as there is an honest dialogue with coachee about their commitment to the coaching relationship/agreement (roles, responsibilities, expectations and desired results/outcomes).

33-42 Coachable, leverage the opportunity to be coached. Explore coaching relationship options (Manager, HR, hire a coach).

43-55 Very coachable maximize your coaching relationship and ask your coach to ask a lot from you!

Figure 3: Coaching Readiness Assessment example (Learning and Performance Solutions, 2012)

A very simple thematic analysis of an indicative sample of six questionnaires (Appendix 3, including Figure 2 and Figure 3) from the Google search, showed that the questions generally covered the themes shown in Table 1.

Question theme	Present in questionnaire
I want to have coaching and understand the coaching process	5/6
I really want to achieve something and understand that it is my responsibility for achieving the results.	6/6
I am open to self-reflection and feedback.	5/6
I am ready to challenge my assumptions and to work on my limiting thoughts and beliefs.	5/6
I am open to experimenting with changing and commit to taking actions to do so.	5/6
I will ensure I have the time to do this and that I will attend the coaching sessions as arranged.	4/6

Table 1: General ‘readiness for coaching’ themes from six analysed questionnaires

Kretzschmar (2010) completed a Grounded Theory research project into readiness for coaching. This produced a comprehensive ‘readiness-for-coaching’ questionnaire (Figure 4) that is designed to allow the coach to draw their own conclusion about the coachee’s readiness for coaching. The questionnaire (Figure 4) has two sections that could unearth issues related to a coachee’s inner obstacles and hindrances: ‘Psychological Interpretations’ (specifically questions, 2, 3, 6 and 10) and ‘Feeling Safe’ (specifically questions 3 and 8). She also discusses the need to minimise defensive behaviours through the person being psychologically stable and feeling safe. Further detail into the nature of the behaviours is sparse, beyond a few named behaviours.

Questionnaire 'Exploring Clients' Readiness for Coaching'	
Potential Coaching Client	<ol style="list-style-type: none"> 1. Do I think this client is ready for coaching? 2. Yes or no, why do I think this? <p>The following questions might help to understand and assess the client's readiness for coaching.</p>
Culture and Class	<ol style="list-style-type: none"> 1. What cultural background or class is my client from? 2. What opportunities has my client had in life, in the context of learning, studying and jobs? 3. How does my client reflect on life/opportunities in life? 4. Is my client supported by significant others/peer group? 5. Is there a positive coaching culture in the client's environment (school, work, etc)
Knowledge about Coaching	<ol style="list-style-type: none"> 1. Is my client clear about what coaching is and what it isn't? What does my client know about coaching already? What expectations does the client have? 2. As a coach have I clearly communicated my approach to coaching? 3. When coaching within organisations, is the organisation clear why coaching is being offered to their employees, what the process involves and what the expected outcomes are? 4. Would it be helpful to offer induction and coaching taster sessions to prospective coaching clients?
Access to Coaching	<ol style="list-style-type: none"> 1. Is the client or organisation able to afford the coaching, if not, are there alternative funds that can be accessed or is there any access to coaching offered at a reduced cost or pro bono? 2. Does the client have the time or want to make the time to commit to the coaching relationship?
Psychological Interpretations	<ol style="list-style-type: none"> 1. Is the client being authentic and honest? 2. Does the client stay in his or her comfort zone? 3. Is the client willing or able to increase self awareness? 4. Has the client had experience of positive helping relationships and does the client trust others? 5. Does the client have healthy self-esteem and confidence in themselves? 6. Is the client able to shift negative mind-sets? 7. Does the client have a positive attitude towards coaching and believe that coaching will make a difference? 8. How does the client react to the coach's feedback? 9. Does the client have some deep seated psychological issues that disrupt the coaching process? 10. Does the client have the emotional freedom to engage with the coaching process?
Feeling Safe	<ol style="list-style-type: none"> 1. Will (or has) a rigorous contracting process take(n) place which clarifies the scope and boundaries of the coaching? 2. Are the expectations of the coach and the client clear to each other? 3. Are any potential or real hindrances and obstacles openly discussed? 4. Does the coach give the client permission to show their emotions (e.g. crying during the session)? 5. What assumptions and judgments does the coach make about the client and what impact does this have on the coach/client relationship? 6. Are there any limits to confidentiality, e.g. does the coach have to report to the sponsoring organisation? 7. Is there a lack of rapport between the client and the coach? 8. Is there too much directness and challenging on the part of the coach, or too little? 9. Is there a lack of support from partners/spouses, friends or family? 10. Is there an organisational culture supportive of learning, development and change? Or does the organisation just pay lip-service to it? 11. Is the coaching venue a confidential and supportive space?
Commitment to Change	<ol style="list-style-type: none"> 1. If the coaching is offered for free, might this have a negative impact on the client's motivation or commitment to the coaching process? 2. Is the client able to reflect or willing to learn how to reflect? 3. Does the client have an intellectual and/or emotionally compelling reason to engage in coaching? 4. Is there a sense that the coaching is happening just at the right time and place in the client's life? 5. Does the client believe and trust in the coaching process that it will aid their learning and personal development? 6. Does the client know that personal insight and change is up to them? 7. Does the client believe in their ability to make change (self-efficacy/beliefs)? 8. Is the client participating in coaching by free choice or have they been coerced? 9. Is the client taking responsibility by regularly attending the coaching sessions and taking action between sessions? 10. Does the client know somebody who has already benefited from the coaching process? 11. Does the client have the energy and drive to make things happen and want something more from life?

Figure 4: Questionnaire 'Exploring Clients' Readiness for Coaching'. (Kretzschmar, 2010.)

Bacon and Wise (2011) created a coachability model (Figure 5) from reviewing relevant literature and their organisation’s significant collective coaching experience.

C0	Not coachable at present	Identified psychological issues
C1	Extremely low coachability	Narcissistic personality
C2	Very low coachability	Resists or defies feedback
C3	Fair coachability	Is complacent/unmotivated to change
C4	Good coachability	Assessment comes as a wake-up call
C5	Very good coachability	Shows an earnest desire to improve
C6	Excellent coachability	Has an intrinsic need to grow

Figure 5: The Korn/Ferry Coachability Model (Bacon and Wise, 2011, p. 37)

The model’s style is different to Kretzschmar’s (2010) questionnaire as it is based on behavioural descriptors and observed behaviour. The model presents a scale of how coachable an individual is likely to be so that a coach can decide where a potential coachee may sit within it. It is for use by the coach and Bacon and Voss (2012) advise only coaching individuals at levels C4 to C6. Figure 6 shows the levels and the nature of the descriptors.

Figure 6: Coachability Model - levels and descriptors (Bacon and Voss, 2012)

Coachability Level	Behavioral Descriptors	Observed Behaviors	Requirements for Change
C0 not coachable at present (lowest level)	Identified psychological problem; dysfunctional behavior resists typical coaching. Normal functioning is impaired beyond the scope of a coaching intervention.	Stressful life events have recently occurred. Focus is inattentive or easily distracted. Anger is poorly managed or inappropriately expressed. Appointments are missed or canceled. Decisions are avoided or made too quickly without appropriate input. Typical activity level is lowered or inconsistent. Has very little affect (emotional range is narrow; does not respond with normal emotional range to stimuli). Reports express a high level of dissatisfaction with behavior and leadership.	Needs help from a trained clinician. Coaching is not the appropriate relationship for the change needed. Coaching may need to be revisited at a later time or when more normal functioning is restored.

Coachability Level	Behavioral Descriptors	Observed Behaviors	Requirements for Change
C1 – extremely low coachability	Is strongly independent (the only one who can advise me is me); may express independence in self-centered behavior and an arrogant/ overbearing manner; sees no need to change; will not admit to serious weaknesses or areas for improvement; refuses to engage in the coaching process or actively resists it; feels invulnerable (no one can touch me). May be antagonistic or hostile toward the coaching process and the coach; may lobby against the coaching program, labeling it wasteful and unnecessary.	Exhibits impatience in behavior or negative affect. Is easily frustrated. Works alone. Doesn't invite feedback or participation. Pays little attention to others. Doesn't listen or respond empathically to others. Shows up late for appointments. Closed to new learning and shows no interest in change or new experience. Interrupts during conversations. Behavior appears rigid and inflexible. Expresses a strong need to be right. Avoids processes that involve emotional input. Reports express detachment, complacency, hopelessness or low expectation of change. Turnover may be higher than expected.	Is often unresponsive, even to the strongest threats or potential consequences; may leave the organization and blame others rather than "submit" to change; may change only in response to a significant, dislocating life or work event (divorce, death of a loved one, loss of a job, failure to be promoted, etc.); tends to blame others for failures so will not accept responsibility for change. May need more time and effort to engage in coaching than most organizations are willing to give. May accept consultation from an "expert."
C2 very low coachability	Resists or deflects feedback; uses defenses to deal with reported "flaws," weaknesses, or development needs; for example, explains away issues or offers rationale for negative perceptions. May behave indifferently toward the coaching process, but puts no effort into creating or executing an action plan. Tends to be negative toward the coaching process, saying that it was not helpful.	Demonstrates a lack of self-knowledge in interactions with others. Has blind spots in behavior, readily observed by others. Uses a variety of defenses to avoid change. May behave as though feedback is criticism. May act in an indirect way rather than confront an issue openly. Reports express fearfulness and lack of two-way communication. During coaching, may try to dominate the discussion, lead the coach away from areas the coach wants to discuss, tell long off-topic stories, or otherwise seek to deflect the focus away from the feedback and coaching needs.	Needs strong extrinsic motivation (rewards or threats), typically not from the coach. Must be faced with the consequences of inaction or lack of commitment; the coach must be extremely candid; must have development plan closely linked to performance measures and progress should be tracked by coach AND boss, with frequent periodic reviews.
C3 fair coachability	Feels that he/she is doing just fine; has reached a point in his/her career where change/ improvement does not feel urgent; is comfortable in the role; perceives that the business results are fine. No need to change. Considers this coaching process another fad (it will pass). May pay lip service to change but is not really committed to it and will make only token efforts to execute the action plan.	Behavior is geared toward maintaining the status quo. Comfortable behaviors are repeated. Unable to identify any needed areas of change. Behavior is consistent, but low-risk. Reports express lack of challenge or creativity. May acknowledge some change needs but has no sense of urgency around them. May accept coach's suggestions but show no real commitment to change.	Typically, must be shocked out of complacency through the implications of not changing; best motivator is an alteration of the conditions that led to complacency; may respond to authority; can be deceptive with coach by appearing to agree to change but with no real commitment; individual feedback comments are often more powerful than feedback scores.

Coachability Level	Behavioral Descriptors	Observed Behaviors	Requirements for Change
C4 good coachability	Prior to the assessment, saw no need for change; the development assessment comes as a “wake-up call”; accepts some feedback but may show sensitivity to some negative perceptions; did not initially see the value of the 360 process but acknowledges that it gave an accurate picture; has not developed a natural learning style and may not be certain how to proceed to learn effectively. Demonstrates some resistance to change initially, as well as to the coaching process, but has a growing awareness of the need for change; sense of urgency depends on the implications of changing or not changing.	Demonstrates adequate performance. Behavior is consistent, but there is more potential. Demonstrates adequate to good problem-solving and interpersonal skill. Responds to logical and factual presentations, but behavior may lack consideration of emotional input.	Will respond to strong feedback and an assertive but helpful coach; walk carefully through the 360 results and build buttoned-up development plan; tie coaching process concretely to performance metrics and monitor closely; coach and boss should monitor progress; needs to see concrete benefits of change and is likely to support the process and stick with it if early results demonstrate those benefits.
C5 very good coachability	Accepts the feedback and shows an earnest desire to improve; sees the value of 360 feedback and willingly participates in the coaching process; is busy but feels that self-development is important and will find a way, though it may mean making some tradeoffs; initially may not be enthusiastic about the process and probably already does many things well; becomes committed to the process as the benefits become clear.	Demonstrates talent. May lack work-life balance in behavior. Demonstrates competitive behavior. Work skills are solid, with specific needs for improvement evident. May have behaviors that promote a sense of unavailability. Reports express satisfaction, but may have more potential than is demonstrated currently.	Will be intrinsically motivated once the picture is clear; coach should primarily use questions to help discover acceptable tradeoffs; change may be inadvertently derailed by day-to-day business, so monitor and provide continuous feedback and reinforcement.
C6 excellent coachability	Has an intrinsic need to grow; has been a lifelong learner; personal history shows evidence of self-directed learning; strong achievement motivation; sees 360 feedback as intrinsically valuable and seeks it beyond the coaching program; is widely read and can cite favorite books on leadership, development, and related areas; is often modest and has a realistic sense of self.	Demonstrates high potential in behavior. Demonstrated skills are above average with many strengths. Expresses needs for new challenges and learning. Places a high value on performance and growth. Challenges others and holds high expectations for achievement. Keeps schedules and commitments. May not readily exhibit the effects of stress. May have difficulty understanding and motivating those who are different in style. Reports express respect for leadership, feel challenged and want even more.	Is likely to be self-directed, so monitor loosely, act as a sounding board, provide resources and ideas; ask client to share other feedback he/she is receiving; inquire about client’s next steps and ongoing development plans. May respond best to facilitative approaches.

There are statements in the Coachability Model that match those describing reflexive hindering in section 1.4. For example, C3 contains the statement “Behaviour is geared toward maintaining the status-quo” (Bacon and Voss, 2012, p. 84). Most of the statements aligned with reflexive hindering are in levels C0 to C3 and are absent in C5 to C6. This might indicate that reflexive hindering coachees sit within those levels, thus suggesting that reflexive hindering is predominantly about low coachability. However, reflexive hindering occurs in coachees that would be deemed to be in levels C4 to C6, especially if the coaching is seeking change at a deep level: a level of change that might be sought out by C5 and C6 coachees given their behavioural descriptors. C5 states that “change may be inadvertently derailed by day-to-day business” (Bacon and Voss, 2012, p. 84) but makes no reference to other reasons for derailment. The descriptions for C0 to C3 also suggest conscious resistance towards coaching and not wanting to be coached per se rather than purely a neurobiological response to deep-seated change. Conversely, most coachees who have demonstrated reflexive hindering are engaged with the coaching process and their reflexive-hindering behaviour is not always welcomed by them.

1. recognition and acceptance that there is an aspect of their life that must be worked on
2. a belief (not just a hope) that change is possible
3. ability to set specific and realistic goals
4. accepting primary responsibility for change
5. accurate insight into the real nature, cause and maintenance of their difficulties
6. willingness to examine and face up to the contributing problems in their life
7. preparedness to experience some discomfort in the process of change
8. ability to form a good working relationship with the coach
9. persistence when faced with setbacks or failures.

The results also suggest that if coaching clients have significant underlying issues, then in order to make substantial progress in dealing with these other difficulties, they would be significantly advantaged if they were able to:

1. make sense of their thoughts and feelings
2. understand the emotions of others
3. manage their own emotions
4. think in a flexible and adaptive manner.

Figure 7: Characteristics that coaches should pay attention to according to Franklin (Franklin, 2005, p. 197)

Franklin (2005) highlighted a set of considerations (Figure 7) that a coach should pay attention to in determining whether or not to start coaching. He advocates that individuals could be assessed against these and any deficits strengthened before coaching commenced.

Franklin's (2005) considerations align with the purpose of this research, mentioned in section 1.4, of helping reflexive-hindering coachees appreciate how they may be hindering themselves and what they are really up against, i.e. the adaptive ability of their own brain. Also, he indicates characteristics that may manifest during coaching and what might give coachees the best chance of helping themselves. He does not however discuss underlying neurobiological details.

Franklin (2005), Kretzschmar (2010) and Bacon and Voss (2012) suggest their questions or statements are reflected upon by the coach. They also advocate discussing them with the coachee in order to improve their readiness, thus commencing the coaching from a stronger foundation. Overall, the recommendation is not to coach an individual if their readiness for coaching or coachability is low. This is to minimise issues manifesting later, leading to reduced effectiveness or early termination of the coaching. (Kretzschmar, 2010; Bacon and Voss, 2012).

Most of the themes that Franklin (2005), Kretzschmar (2010) and Bacon and Voss (2012) highlight are captured by the six sample questionnaires above. Thus, there appears to be a high degree of commonality within the coaching literature on readiness or coachability factors. The reasons for low readiness or low coachability related to the coachee can be encapsulated by the following points (Hart, 2001; Franklin, 2005; Kretzschmar, 2010; Bacon and Voss, 2012).

1. Individual perceives coaching creates an unfavourable corporate impression. For example, indicating that they have a problem or performance issue.
2. Individual perceives no need or urgency for coaching. They may not appreciate the consequences of their current situation or, perhaps, do not wish to admit that coaching would be beneficial.
3. Individual has a lack of perception as to what coaching entails and its possible benefits.

4. Individual perceives coaching's open and honest dialogue as too risky. This may be founded on previous negative experience, a lack of feeling in control, or fear of it being too intrusive.
5. Individual is not emotionally or psychologically stable enough which could lead to adverse thoughts, beliefs and behaviours during coaching. For example, being too vulnerable or fragile in nature or having deeper psychological characteristics that challenge the coaching-therapy boundary.

Points 1, 2 and 3 suggest that 'readiness-for-coaching' and 'coachability' factors go beyond reflexive-hindering behaviours. Also, some coachees who demonstrate reflexive-hindering behaviours would not be viewed as having low readiness for coaching. Gastelum (2013) states that resistance in coaching is part of the process and that it signifies that coaching is successfully creating change. Therefore, readiness for coaching/ coachability does not fully encompass reflexive hindering and vice-versa.

Points 4 and 5 are where readiness for coaching/ coachability and reflexive hindering appear to overlap, although not all observed reflexive hindering would imply the causes indicated by point 5's examples. However, pervasive reflexive-hindering behaviours across a coaching programme can impede the coachee's progress and therefore may detrimentally impact their coaching programme. Thus, 'readiness-for-coaching' or 'coachability' assessments may help towards vetting out these coachees, although as Kretzschmar (2010, p. 12) notes, readiness for coaching is "never black or white". Hence, there is a possibility that some coaches might find a person coachable whereas another coach may not. Consequently, points 4 and 5 might relate as much to a coach's ability to coach as they do to the coachee's coachability.

Whilst it was demonstrated that coachee inner obstacles to a coaching programme are considered in the above-discussed material, underlying neurobiological aspects were not referenced in this literature. In searching for clarity about the concept of reflexive hindering, it does not appear to be wholly about a coachee not being ready for coaching; and readiness for coaching or coachability is not wholly related to reflexive hindering. In practice reflexive hindering is one aspect that impacts a person's coachability and this research is focused on ways of managing that fact. But as previously noted reflexive hindering typically appears during the process of coaching individuals who otherwise appear engaged in their coaching.

2.4 Coachee inner obstacles during coaching

This section of the review considers the following two questions with respect to different coaching approaches: ‘What does the coaching literature say about coachee inner obstacles?’ and ‘How does it suggest navigating them?’. The term ‘coaching approach’ is used in this review to denote a coaching theoretical perspective such as Solution-focused or Ontological coaching. This is how a coach may broadly describe their coaching practice or style (Cox, Bachkirova and Clutterbuck, 2018). The coaching approaches reviewed were predominantly from the practitioner books by Passmore (2010), Cox, Bachkirova and Clutterbuck (2018) and Palmer and Whybrow (2019). Additional books, articles and academic papers were used where stated.

The results of this part of the literature review are presented in Table 2. The key aspects of coachee inner obstacles have been noted for each approach as well as suggested ways to navigate them.

Table 2: Coaching approaches and coachee inner obstacles

References: A = Passmore, 2010; B= Cox, Bachkirova and Clutterbuck, 2018; C= Palmer and Whybrow, 2019.

Approach/ references	Indicative inner obstacles	Indicative suggestions to navigate inner obstacles.
Appreciative Inquiry Non problem-solving approach. Privileges strengths and positive feelings. (A)	<ul style="list-style-type: none"> • Acknowledges that view of the world affects behaviour and what is noticed. Inner obstacles arise from coachee’s discussion but are not sought or dwelt upon. 	<ul style="list-style-type: none"> • Take an appreciative stance of the present and use their strengths to help. • Regain appreciative stance.
Positive Psychology Privileges achievements, resilience and well-being. (B; C)	<ul style="list-style-type: none"> • Inner obstacles arise from coachee’s discussion and are discussed although not dwelt upon. 	<ul style="list-style-type: none"> • Normalise negative emotions and refocus on positive aspects. • Pull out positive aspects and focus on strengths. • Use strengths to reflect on inner obstacles. Eg, ‘How could this strength help with ...?’

Approach/ references	Indicative inner obstacles	Indicative suggestions to navigate inner obstacles.
<p>Solutions-Focused Privileges creating solutions and being resourceful. (A; B; C; Greene and Grant, 2003; Grant, 2019; Grant and Gerrad, 2019)</p>	<ul style="list-style-type: none"> • Inner obstacles are acknowledged and discussed in so far as they provide useful insight towards solutions. They are not dwelt upon or overly discussed to minimise problem saturation (Grant and Gerrad, 2019). 	<ul style="list-style-type: none"> • Seek to reframe using different perspectives; find which aspects work or when it works. • Switch conversation onto a resourceful topic.
<p>Person-centred Non-directive. Privileges coachee's words. (C)</p>	<ul style="list-style-type: none"> • Inner obstacles arise from coachee's discussion but are not sought. 	<ul style="list-style-type: none"> • Coach maintains full positive regard so coachee feels safe. Coachee's words reflected back as questions or observations to raise awareness and insight.
<p>Time to Think Non-directive. Privileges attentional listening. (Kline, 1999)</p>	<ul style="list-style-type: none"> • Inner obstacles arise from coachee's discussion but are not sought. • Coachee wishes to explore what is limiting them. 	<ul style="list-style-type: none"> • Coach maintains full attention so coachee feels safe. • Determine key assumption, erode its validity and generate liberating new assumption.
<p>Behavioural (GROW, T-GROW, I-GROW) Privileges action especially towards performance and skills coaching goals. (A; C; Whitmore, 2003; Wilson, 2014)</p>	<ul style="list-style-type: none"> • Reality (R): Directly asked what has impeded further progress and what has not worked. • Will (W): Directly asked what could hamper or prevent actions. • Negative thoughts or limiting beliefs may arise at any point. Acknowledges that childhood experiences influence present cognition and behaviour. • Resistance may occur through intimidating questions or coachee being worried about moving out of their comfort zone. 	<ul style="list-style-type: none"> • Various straightforward question-based exercises to generate actions to overcome obstacles. • Reframe using questions E.g. 'What would a friend say to you?' 'What do other people believe when this happens to them?' • Self-limiting belief question set (Figure 8) • Assumes that if obstacle within coachee then they are able to act, thus moving from "stuck to unstuck" (B, p,89) • Use trust, relationship and compassion to reduce resistance.

Approach/ references	Indicative inner obstacles	Indicative suggestions to navigate inner obstacles.
<p>Motivational Interviewing Non-directive. Privileges self-determinism towards change.</p> <p>(C; Passmore, 2007; Harakas, 2013)</p>	<ul style="list-style-type: none"> • Resistance is a mismatch between where coachee is and where coach thinks coachee is on Transtheoretical Model (TTM) of Change. • Obstacles create ambivalence to change. <p><i>[TTM 5 Step model of change – Precontemplation, Contemplation, Preparation, Action and Maintenance. (Grimley et al., 1994)]</i></p>	<ul style="list-style-type: none"> • Match coaching style to stage. • Use non-confrontational methods to explore desire for change and self-efficacy. • Explore requirements for moving one point upwards, using a 0-10 rating scale. • Explore costs and benefits of inner obstacles and embrace the principle of self-determination.
<p>Neuro Linguistic Programming (NLP) Seeks to 'reprogramme'. Privileges modelling best practice to attain coaching goal.</p> <p>(A; B; C; Ready and Burton, 2004; Knight, 2010)</p>	<ul style="list-style-type: none"> • Inner obstacles may arise during coaching work. Typically, as self-limiting beliefs/ assumptions, negative thoughts and conflicting parts within the coachee. • Resistance due to well-formed coaching outcome not being fully ecological. • Resistance occurs due to inflexible coach 	<ul style="list-style-type: none"> • Many tools and techniques available. Reframe or erode obstacle. Complete exercises on Logical Levels, parts integration and perceptual positions. Alter structural sub-modalities. • Use timeline to release negative emotions and limiting beliefs. • Ensure no part of coachee objects to desired outcome prior to coaching. • Match and pace coachee.
<p>Cognitive Behavioural Privileges cognitive patterns affecting behaviour.</p> <p>(A; B; C; Willson and Branch, 2006)</p>	<ul style="list-style-type: none"> • Coaching goal relates to inner obstacles of thinking errors, hot cognition (emotional) and self-defeating behaviours. • Feelings of shame, guilt and pride about problems or tackling them create obstacles to progressing goals. 	<ul style="list-style-type: none"> • Raise awareness using many practical, rational exercises and discussing cognitive model. • Use variations on ABCDE exercise to shift belief and therefore emotion and behaviour. [A= activating event, B=belief about event, C= consequences (emotional and behaviour), D=dispute belief, E= effect of new thoughts and belief.] • Remain optimistic and focused on goal. Write down useful beliefs to adopt for each task interfering thought.

Approach/ references	Indicative inner obstacles	Indicative suggestions to navigate inner obstacles.
<p>Narrative Phenomenological stance. Privileges personal story.</p> <p>(B; C)</p>	<ul style="list-style-type: none"> • Inner obstacles to reshaping a useful narrative may become apparent. 	<ul style="list-style-type: none"> • Draw out forgotten or hidden strengths and capabilities to build upon. • Aid coachee in piecing together a different narrative by exploring, evaluating and learning from other narratives.
<p>Somatic Privileges the body and somatic sensations.</p> <p>(C)</p>	<ul style="list-style-type: none"> • Default habits and reflexive responses within the body can outlive their usefulness. • Letting go of old habits causes fear or anxiety. 	<ul style="list-style-type: none"> • Explore how they have outlived their usefulness and skilfully reshape somatic responses. • Practice new ways to change neural pathways and embed them. • Listen to these feelings towards change and just be <i>with them</i> in order to learn.
<p>Gestalt Privileges the <i>here and now</i> of the coaching session to explore meaning-making.</p> <p>(B; C; Gillie and Shackleton, 2009; Simon, 2009)</p>	<ul style="list-style-type: none"> • Inner obstacles are the nature of coaching and a healthy part of change. Makes link to formative years affecting present cognition and behaviour. • Emotions may emerge. • Blocks and self-limiting beliefs related to past and present. 	<ul style="list-style-type: none"> • Safe environment to raise awareness and work through obstacles. • Stay with reaction and allow it to emerge. • Explore to raise awareness / empty chair exercise / may relate to formative years.
<p>Ontological Privileges the coachee's interpretation of the world, shown through language, moods and body.</p> <p>(B; C; Flaherty, 2005)</p>	<ul style="list-style-type: none"> • Seeks to understand the costs (obstacles) that the current interpretation of the world has. • Overtly links childhood experiences to current cognition and behaviour. • Negative core assessments (beliefs) unearthed. • Coaching program becomes stuck – viewed as possible breakthrough point for coach or coachee. 	<ul style="list-style-type: none"> • Exploration and questioning of current interpretation, its origin, costs and benefits. • Emotions seen as clues to investigate. • Investigation usually finds they are unfounded. • Coach is creative: Changes the venue, reviews thoroughly with coachee, instigates Kegan and Lahey's (2009) Immunity to change exercise, practices actions in the session, shifts primary domain focus, rechecks coachability.
<p>Existential Privileges the coachee's being and connectedness in the world.</p> <p>(B; C)</p>	<ul style="list-style-type: none"> • Seeks to explore conflicts and problems due to current 'being' and worldview in order to reconcile mismatches. • Inner blocks and unease viewed as a naturally occurring aspect of life. 	<ul style="list-style-type: none"> • Use the trustworthy relationship for phenomenological exploration.

Approach/ references	Indicative inner obstacles	Indicative suggestions to navigate inner obstacles.
<p>Transactional Analysis (TA) Advocates educating coachee. Privileges the coachee's inner world to improve self-regulation and core beliefs. (B; C; Joines and Stewart, 2002)</p>	<ul style="list-style-type: none"> • Identifies and challenges negative limiting beliefs, core beliefs and implicit assumptions. • "Growing Edge" (Wilson, 2019, p. 300) breached. Coachee moves into fear zone and has overwhelming feelings that inhibit their desire to change. 	<ul style="list-style-type: none"> • Educate and raise awareness through simple metaphorical models to enable insights and change. Use simple language and visual representations. • Pace coaching to work within the 'growing edge'.
<p>Psychodynamic Advocates educating coachee. Privileges raising awareness of nonconscious and historical influences to increase choice and freedom. (B; C; Kilburg, 2004; Kets de Vries and Cheak, 2014)</p>	<ul style="list-style-type: none"> • Defence mechanisms to reduce or avoid anxiety created during formative years may be triggered. • Threat anticipation defence mechanisms triggered. 	<ul style="list-style-type: none"> • Educate coachee on nonconscious influences from formative years and historical experiences that constrain adult life. • Explore nonconscious influences and patterns to raise awareness and insight. Questions include "Does this situation remind you of anything you have faced before?" (Kilburg, 2004, p. 247). Coach creates hypothesis on dynamic for exploration. • Normalise inner obstacles and their usefulness. • Build deep trust and empathy to aid conversational safety.

Most coaching approaches generally presume that certain inner obstacles occur during coaching and, within bounds, are dealt with as part of the coaching process (Grant and Gerrard, 2019). It was hard however to determine from the literature, how much various authors considered that inner obstacles were impeding the progress of the coaching, rather than just forming part of the coaching conversation. On the other hand, it was noticeable that some approaches chose not to discuss any aspect of an inner obstacle, whereas other approaches extensively discussed its nature, possible origins and consequences. This variation in the amount of discussion can be characterised by two aspects. The cognitive level being explored according to Beck's (1970) three levels and the comprehensiveness of the discussion.

Beck's Three Levels of Cognition

Beck (1970) states that there are three levels of cognition: 1 - core beliefs; 2- intermediate beliefs and 3 - automatic thoughts (Wong, 2008). Intermediate beliefs include rules, assumptions and attitudes (Palmer and Szymanska, 2019). The problematic versions of these are negative automatic thoughts, dysfunctional assumptions or limiting intermediate beliefs and negative or rigid core beliefs (Fenn and Bryne, 2013; Palmer and Szymanska, 2019). It is these that subsequently generate obstacles within the coachee.

Four main categories, related to the depth of discussion, appeared relevant from Table 2's summary. The categories are:

I. Choose to move away from inner obstacles

Approach maintains a focus on the coachee at their best and how that is achieved. It shifts away from unhelpful inner obstacles to maintain a positive momentum and create an "asset-based perspective" (Harakas, 2013, p. 109). Inner obstacles may be articulated by the coachee but are not sought or dwelt upon.

II. Works with minor/ intermediate inner obstacles, within bounds

Approach maintains a focus on what the coachee can or is willing to do. Straight-forward questions or techniques are used to overcome inner obstacles or navigate around them. Typically, no in-depth exploration of obstacles.

Inner obstacles: automatic negative thoughts and some limiting intermediate beliefs.

III. (a) Actively engages with inner obstacles using practical and cognitive methods
(b) Actively engages with inner obstacles using experiential and/ or narrative exploration methods

Approach raises awareness and insight to reframe or modify perception, thus enabling progress. There is recognition that formative years and historical life experiences influence inner obstacles.

Inner obstacles: automatic negative thoughts, dysfunctional intermediate beliefs and some negative core beliefs.

IV. In-depth exploration of dysfunctional and unquestionable inner obstacles often explicitly related to formative years

Approach actively engages with inner obstacles in depth by educating coachee on obstacle's nature (e.g. defence mechanisms) and origin (embedded in formative years). This strengthens the coachee's belief that they are no longer *that person* in *that situation* but have different capabilities available to them now.

Inner obstacles: automatic negative thoughts, dysfunctional intermediate beliefs and negative/rigid core beliefs.

2.4.1 I: Choose to move away from inner obstacles

This category includes Appreciative Inquiry, Positive Psychology and Solution-Focused coaching from Table 2. Coaching is positioned as a forward-looking, growth-focussed, empowering practice (Cox, Bachkirova and Clutterbuck, 2018) and these approaches embrace that stance by focussing on opportunities and positive attributes (Passmore, 2010; Cox, Bachkirova and Clutterbuck, 2018; Palmer and Whybrow, 2019). Grant and Gerrad (2019) state that coaching efficacy is improved when the conversation is significantly positive and solution-focused. They assert that this avoids the detrimental effects of problem saturation (Grant and Gerrad, 2019) that leads to coachees feeling overwhelmed and helpless. Boniwell and Kauffman (2018) state that positive psychology also redresses the positive-negative balance by privileging the positive. Boniwell and Kauffman (2018) advocate that resistance reduces when focusing on coachee strengths and what works. In these approaches there is an intentional curbing of problem-focused dialogue by the coach even though inner obstacles must arise.

Overall, the literature reviewed for this category had almost no reference to inner obstacles. Those mentioned were predominantly within the solution-focussed approach and sought to demonstrate how to normalise or usefully reframe obstacles rather than

to explore them (Grant, 2010). For example, “*Coachee*: ‘But I couldn’t do all of that...’
Coach: ‘So which bits could you do?’” (Grant, 2010, p. 102).

Limitations of such approaches are acknowledged, especially if the coachee wishes to explore their underpinning issues related to the coaching goals (Passmore, 2010; Cox, Bachkirova and Clutterbuck, 2018; Palmer and Whybrow, 2019). Nevertheless, there is strong and compelling researched advocacy for the various strengths-based and positive psychology coaching approaches (Linley and Harrington, 2006; Toogood, 2012; Grant, 2019; Green and Palmer, 2019).

2.4.2 II: Work with minor/ intermediate inner obstacles, within bounds

This category includes Person-centred, Time to Think, Motivational Interviewing and Behavioural coaching from Table 2. These approaches all undertake some form of bounded discussion on inner obstacles despite being different in style.

Person-centred and Time-to-Think: These are non-directive approaches that follow the dialogue and inclination of the coachee. As such both must permit conversations related to inner obstacles if raised by the coachee. Person-centred coaching (Joseph and Bryant-Jefferies, 2019) has no specific method for addressing inner obstacles other than reflecting back the coachee’s words. For example: “[coachee] ‘Like a battle inside myself. And I’m scared in the middle of it.’ [coach] ‘Scared in the middle of a battle within yourself.’” (Joseph and Bryant-Jefferies, 2019, p. 138). Time-to-Think (Kline, 1999) has a specific method for working with limiting assumptions if coachees wish to. It appears to be based on Rational Emotive Behavioural Therapy’s Dispute questions (Turner, 2016) and converts limiting assumptions into a liberating new alternative assumption. The Person-centred and Time to Think approaches do not appear to overtly link inner obstacles to the coachee’s formative years. However, the coach would listen to the coachee’s dialogue with full positive regard and attention if the coachee makes that link.

Motivational Interviewing and Behavioural coaching: These approaches use open questions to explore obstacles that are blocking the coachee’s progress. The exploration is focused on shifting the coachee’s perspective or generating actions that overcome, bypass or avoid the block (Harakas, 2013; Passmore and Whybrow, 2019). Harakas (2013) argues for making Motivational Interviewing the method of choice for resolving

resistance to change with stuck coachees. Harakas (2013) and Passmore and Whybrow (2019) advocate that the exploration of costs and benefits for various aspects creates a non-confrontational dialogue and enables action. Overall, this approach seeks to increase the coachee's motivation for change rather than expansively exploring the obstacles.

Passmore and Whybrow (2019) also note that if a coach's style does not match the coachee's stage of change then the coachee is likely to become resistant. They advise that a coach should remain cognisant of their coachee's stage of change according to the Transtheoretical Model of Change (Grimley et al., 1994) and match their style accordingly.

Whitmore (2003, p. 175) lays out a comprehensive list of questions for the Behavioural GROW model that include "What, if any, internal obstacles or personal resistances do you have to taking action?". This is followed up by action-orientated questions such as 'What could you do to overcome them?' or 'What support would you need from others to help overcome them?'. Whitmore (2003) acknowledges inner obstacles arise in Behavioural coaching but cautions against probing too deeply. Wilson (2014) however proffers a set of questions (Figure 8) that aim to shift self-limiting beliefs without exploring them in-depth. Like Whitmore (2003), Wilson (2014) caveats this by saying that coaching should not become therapy.

- What would you like instead of your belief?
- How do you know your belief is true?
- What evidence is there to support it?
- Can you counter the evidence?
- Has there been a time when ...?
- Where might your belief have come from?
- Is it still relevant to you?
- How does the belief serve you?
- What do you notice about your language?
- Can you change your language?
- Can you change your belief?

Figure 8: Questioning exercise to challenge self-limiting beliefs (Wilson, 2014)

Alexander (2010) uses his version of the precision model (Figure 9) to challenge self-limiting statements without deeply probing them.

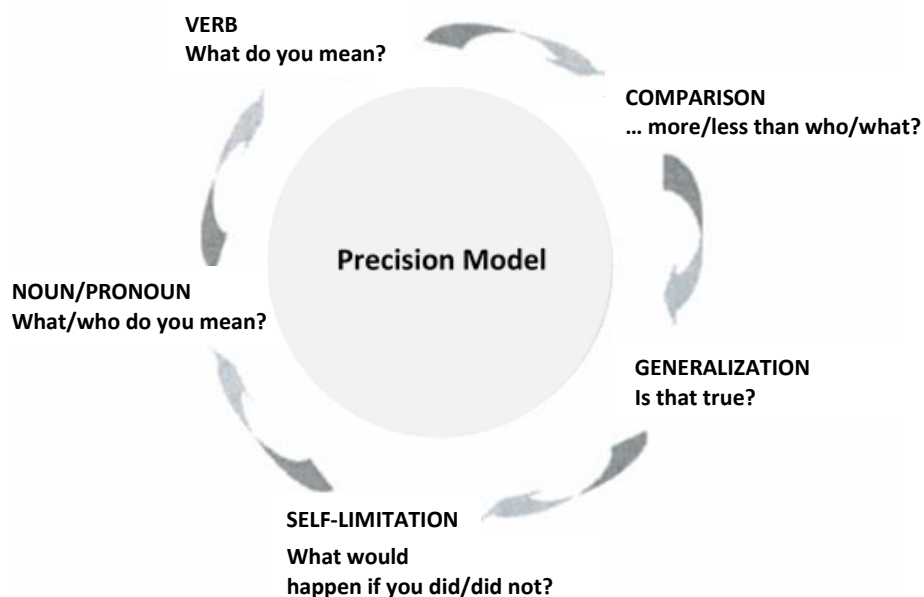


Figure 9: The precision model (Alexander, 2010, p. 88)

Overall, this category's approaches discuss and work through negative automatic thoughts and minor limiting intermediate beliefs as they arise. They accept that inner obstacles constrain some actions and use the coaching process to overcome less-fundamental ones. There is a preference for discussing actions that overcome or navigate around obstacles, rather than deeply exploring them. The coach is advised to work within the inclination and tolerance of the coachee. Inner obstacles were referenced more often in this category but their neurobiological underpinnings and phenomena close to reflexive hindering were not.

2.4.3 III(a): Alleviate inner obstacles using practical and cognitive methods

This category signifies a shift in coaching approaches to those that predominantly expect to work at Beck's (1970) level 2 (intermediate beliefs) and partly with level 1 (core beliefs) (Wong, 2008; Grimley, 2019; Palmer and Szymanska, 2019). It includes the approaches of Neuro Linguistic Programming (NLP) and Cognitive Behavioural Coaching (CBC) from Table 2. Both approaches set out to work with inner obstacles that impede progress and are technique laden (McDermott, 2010; Palmer and Szymanska, 2019). Jackson and Cox (2018, p. 226) state that CBC works on the "process and mechanism of

sense-making” rather than the coachee as a whole person. Arguably NLP is similar with the focus on the structure of an experience rather than its content (McDermott, 2010; Grimley, 2018).

The literature reviewed within this category explicitly acknowledges that inner obstacles are predominantly formed in childhood and influence adult life. The principal cognitive model used by both approaches is shown in Figure 10.

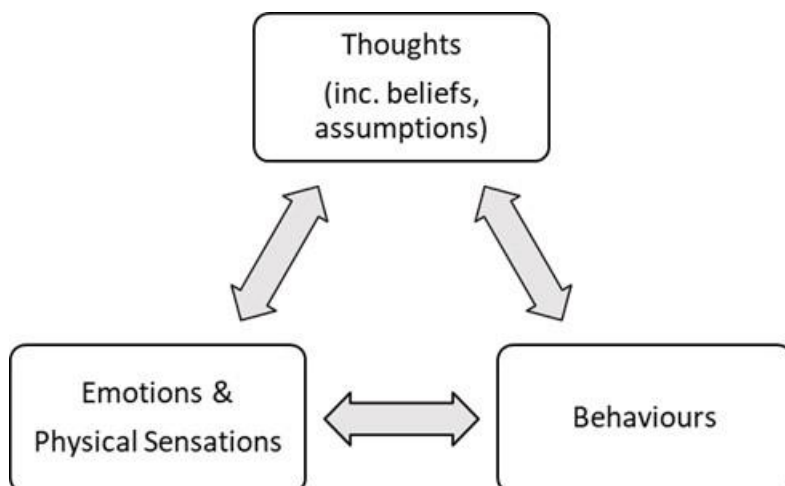


Figure 10: Cognitive Model used by NLP and CBC (Willson and Branch, 2006)

Neuro Linguistic Programming (NLP): Inner obstacles within NLP coaching are addressed using multiple techniques (Ready and Burton, 2004; Knight, 2010): See Table 2 - NLP. These rarely explore the inner obstacle explicitly as NLP works on the premise that structural changes create the required shift (Knight, 2010; McDermott, 2010). Resistance during coaching was referred to on two occasions. Firstly, it may arise due to an inflexible coach who is unable to match and pace the coachee (Grimley, 2018, 2019) thus frustrating the coachee. The second relates to a *part* of the coachee that is not congruent with the coaching goal, thus creating internal conflict (Ready and Burton, 2004; Grimley, 2018, 2019).

Ready and Burton (2004) and Knight (2010) state that when *parts* of a coachee are in conflict it can lead to self-sabotaging behaviours thwarting goal attainment. This could be one way to metaphorically describe reflexive hindering. The NLP solution is to complete a ‘parts integration’ exercise (Knight, 2010, pp. 324-327) where the positive intentions of both *parts* are explored. This exploration highlights that both *parts* have

the same intention at some level. Consequently, it is said, the *parts* integrate and the conflict is resolved. This is a conceptual and physical exercise similar to Motivational Interviewing's cost/ benefit analysis and does not explore any neurobiological aspects.

Cognitive Behavioural coaching (CBC): Coachees seek CBC when they wish to explore and change their unhelpful thinking (Neenan, 2010). These are categorised as thinking errors, unhelpful emotions and self-defeating behaviours (Palmer and Szymanska, 2019). The ABCDE exercise (Figure 11) is the mainstay of CBC when working with problematic thinking and behaviour (Willson and Branch, 2006; Neenan, 2010). The types of unhelpful thinking and emotions are discussed to raise awareness and insight rather than deeply exploring their origin or nature (Willson and Branch, 2006). How much the unhelpful thinking and emotions actively hamper the coachee's progress is unclear but if present they are likely to have an adverse impact.

The 'ABC' Form #11

Date _____

Activating Event (Trigger). 2. Briefly write down what triggered your emotions. (e.g. event, situation, sensation, memory, image)	Beliefs, thoughts, and attitudes about A. 3. Write down what went through your mind, or what A meant to you. B 's can be about you, others, the world, the past, or the future.	Consequences of A+B on your emotions and behaviours. 1. Write down what emotion you felt and how you acted when you felt this emotion.	Dispute (question and examine) B and generate alternatives. The questions at the bottom of the form will help you with this. 4. Write an alternative for each B , using supporting arguments and evidence.	Effect of alternative thoughts and beliefs (D). 5. Write down how you feel and wish to act as consequence of your alternatives at D .
		Emotions e.g: Depression, guilt, hurt, anger, shame, jealousy, envy, anxiety. Rate intensity 0–100.		Emotions Re-rate 0–100. List any healthy alternative emotion e.g. Sadness, regret, concern.
		Behaviour e.g. Avoidance, withdrawing, escape, using alcohol or drugs, seeking reassurance, procrastination		Alternative Behaviour or Experiment e.g. Facing situation, increased activity, assertion

Disputing (Questioning and Examining) and Generating Alternative Thoughts, Attitudes, and Beliefs: 1. Identify your 'thinking errors' at **B** (e.g. Mind Reading, Catastrophising, Labelling, Demands etc.). Write them next to the appropriate **B**: 2. Examine whether the evidence at hand supports that your thought at **B** is 100% true. Consider whether someone whose opinions you respect would totally agree with your conclusions. 3. Evaluate the helpfulness of each **B**. Write down what you think might be a more helpful, balanced and flexible way of looking at **A**. Consider what you would advise a friend to think, what a role model of yours might think, or how you might look at **A** if you were feeling OK. 4. Add evidence and arguments that support your alternative thoughts, attitudes and beliefs. Write as if you were trying to persuade someone you cared about.

Figure 11: The ABCDE Exercise from CBT (Willson and Branch, 2006, p. 308)

Willson and Branch (2006) also discuss safety behaviours that are designed to prevent fears from being realised even though they are unlikely to occur. They use the ‘vicious flower of panic’ exercise (Figure 12) to establish the thoughts, emotions, physical sensations and behaviour associated with a safety behaviour.

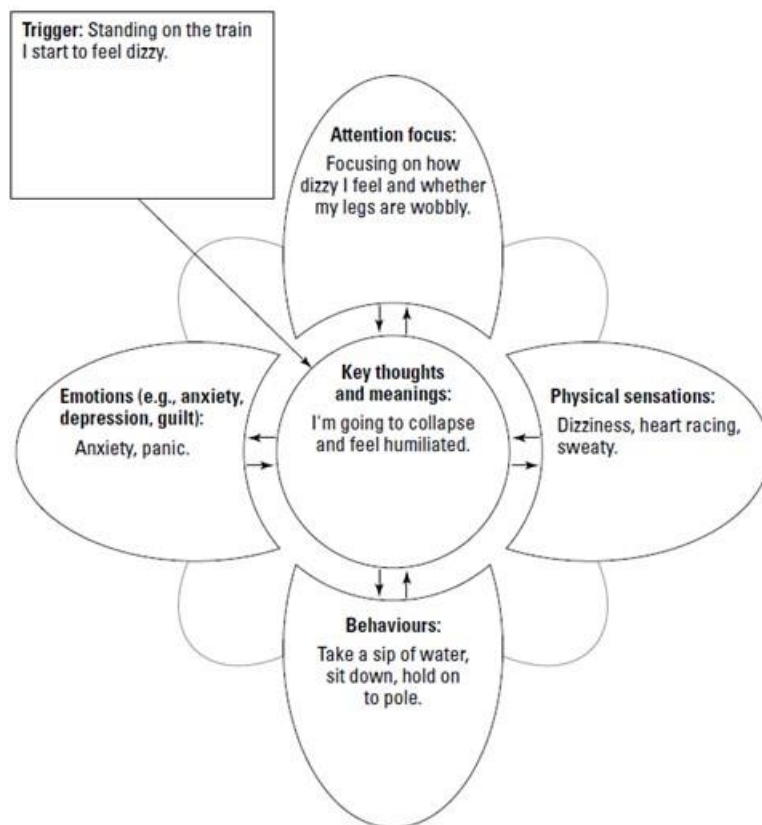


Figure 12: A ‘vicious flower of panic’ example. (Willson and Branch, 2006, p. 105)

This exercise explores how each petal affects the coachee’s perception of the situation and how that reinforces the safety behaviour. They state that the ‘physical sensations’ petal is the hardest to modify as people have little direct control over bodily functions. Notably, they realise a coachee needs to tolerate the uncomfortable physical sensations generated whilst modifying their safety behaviour (Willson and Branch, 2006, p. 105). Although not neurobiologically positioned, this exercise appears to conceptually outline a dynamic similar to reflexive hindering.

Information processing theory (IPT) (Beck and Clark, 1997) is one of the theories (see section 2.5.4) underpinning cognitive behavioural therapy and thus CBC. There are many theories within it and a number of them draw upon neuroscience, computational neuroscience and neuropsychology (Brewin and Holmes, 2003; May and Barnard, 2004).

In the IPT literature the neurobiological aspects are cited, although these were not referenced in the reviewed CBC literature.

Overall, NLP and CBC approaches challenge inner obstacles through rational and cognitive exercises. The aim is to understand enough about the obstacle's manifestation in order to alleviate it rather than deeply exploring its origin and nature. The cognitive language of Beck's (Beck, 1970; Palmer and Szymanska, 2019) three levels appears in this literature. The notion that thoughts, emotions, physiological sensations, behaviour and external stimuli influence each other is also present (Willson and Branch, 2006). Neurobiological underpinnings were not referred to and the dynamic similar to reflexive hindering came from the therapy-base text (Willson and Branch, 2006) not the coaching literature.

2.4.4 III(b): Alleviate inner obstacles using experiential and/ or narrative exploration

This category is comparable to III(a) although these approaches are whole-person focused and technique light (as in tools and exercises). The approaches include Narrative, Somatic, Gestalt, Ontological and Existential coaching from Table 2. They are phenomenological and constructionist. (Cox, Bachkirova and Clutterbuck, 2018; Palmer and Whybrow, 2019)

Narrative coaching: Law (2019) states that a coachee may become stuck during Narrative coaching due to reaching the Zone of Proximal Development (Crain, 2014).

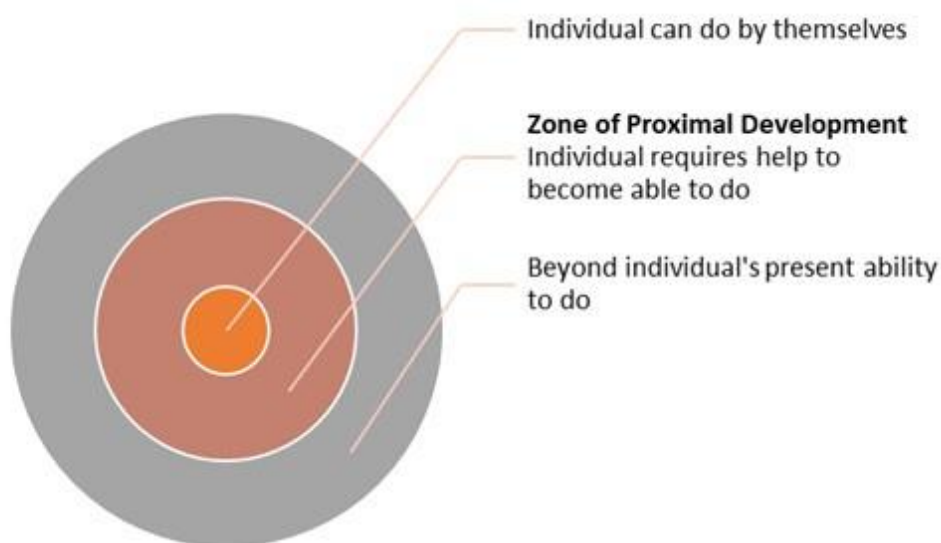


Figure 13: Zone of Proximal Development diagram

The Zone of Proximal Development (Figure 13) was developed by Vygotsky as a framework for explaining the three types of work a teacher could give to a pupil (Crain, 2014). The centre circle depicts work that the pupil can easily complete unaided. The outer ring depicts work that is beyond the pupil's ability to undertake even with assistance. The middle ring depicts work that the pupil can complete but only with the assistance of the teacher. Vygotsky advocates that teachers should give their pupils work from the middle ring as this nurtures the pupil's capability for growth whilst helping the pupil to develop (Crain, 2014). Drake (2018) and Law (2019) advocate that it is also a concept that underpins Narrative coaching as the coachee is unable to grow on their own and requires help to do so. The coach therefore aids the coachee by constructing a pathway from the coachee's current ability and perceptions to a desired future goal.

Although the coachee's progress is temporarily stalled by being stuck, the occurrence or amount of reflexive hindering is unknown from the reviewed literature. Predominantly, the literature (Drake, 2018; Law, 2019) covers reconnecting the coachee to useful aspects of forgotten narratives and contextually reauthoring, reshaping or reframing other unhelpful narratives.

Somatic coaching: This approach raises the coachee's somatic awareness of default habits and reflexive responses during its initial 'historical exploration' stage (Aquilina and Strozzi-Heckler, 2019, p. 234). This explicitly explores their formation and consolidation during formative years and through historical life experiences. Aquilina and Strozzi-Heckler (2019, p. 235) acknowledge that "unnerving responses" happen as coachees go through somatic change. These may reflexively hinder the coachee's progress although that is not explicitly stated. However, they suggest that these responses naturally occur during change and should be normalised. It is also acknowledged that the coachee will experience "fits and starts and stops as their new shape evolves" (Aquilina and Strozzi-Heckler, 2019, p. 236) although the nature of these is not declared. There was however no indication within the reviewed literature that these responses become problematical enough to restrict progress towards the coaching outcomes.

Gestalt coaching: This approach works with the *here and now*, with what is present within the coaching session (Gillie and Shackleton, 2009; Bluckert, 2018). It focuses on

thoughts, emotions and behaviour as they happen. This material is used to investigate what helps and limits a coachee in achieving their outcomes (Bluckert, 2018). Allan and Whybrow (2019, p. 181) call it “active awareness” as opposed to CBC which they state works with “learning mechanisms”. Therefore, it is reasonable to assume that reflexive hindering occurs and becomes a source of material to work with. Maurer (2011) appears to concur with this. He notes that every desired coaching goal also creates some resistance to it. The coaching conversation example given by Allan and Whybrow (2019, p. 183) contains a typical reflexive hinderance - actual anxiety in the stomach and thoughts about the fear of failing. However, it is not referenced in neurobiological terms and the feeling is said to be easily resolved through the coaching conversation.

The reviewed Gestalt literature details various inner obstacles such as “internalized ‘shoulds’ and ‘should-nots’” (Bluckert, 2018, p. 71), and “self-limiting thoughts, feelings and behaviours” (Allan and Whybrow, 2019, p. 187). Simon (2009) states that resistance is part of change and should be expected as well as accepted. Bluckert (2018, p. 68) concurs with Simon and states that “resistance [is] a meaningful and healthy act when understood from the position of the so-called resistor”. Overall, the literature is well versed in inner obstacles and has statements suggestive of reflexive hindering, although the impediments these obstacles could cause to progressing towards the coaching outcomes are not explicitly mentioned.

Ontological coaching: This approach works with the coachee’s interpretation of the world, linguistically, emotionally and bodily (Sieler, 2018). Shabi and Whybrow (2019, p. 220) discuss structural determinism which advocates that “things operate in the way they were made”. They link this to upbringing which is steeped in culture, language and experiences, all of which influence *who we are* and how we interact with the world. Flaherty (2005) and Sieler (2018) lightly connect the topic to the biological nervous system and Shabi (2015) states that these interpretations often feel unquestionable when in fact they are learned.

Flaherty (2005) also notes that defensive routines may be encountered during coaching and are developed to maintain the status-quo. He states that *who we are* has served us well to-date and therefore we are understandably reticent to alter that. Shabi and Whybrow (2019) observe that if coachees do not question their interpretations of the world then ultimately, they revert back to old habits. They advocate that this requires

an external viewpoint, a role the coach is well-placed to undertake. In this way a coachee is able to *see* their risk aversions and how their old habits may not be serving them well in the current situation.

Shabi and Whybrow (2019) advocate undertaking an exploration of how the coachee became *who they are*. In Ontological coaching this is seen as necessary learning rather than therapy. It is deemed useful for locating which aspect of the coachee's current interpretation is most significantly impeding the desired changes. The assumption is that this realisation will, in and of itself, create a shift in thinking. Shabi and Whybrow (2019) also acknowledge that uncomfortable responses occur whilst experimenting with new behaviours. They assert that these need to be tolerated by the coachee until the new behaviour is embedded.

Flaherty (2005) states that sometimes coachees have an inability to progress in some way or habitually repeat the same behaviours. He observes that these coachees have a cognitive-emotional dilemma in that they wish to both change their situation and yet feel that it is not possible to do that. This can lead to different unhelpful thoughts and behaviours. Reflexive hindering might be occurring from his descriptions and therefore forms part of the stuckness. However, he positions being stuck as entailing frantic action and blame, neither of which have been consistently observed with reflexive hindering. Overall, he advocates exploring the stuckness, creating more self-compassion and gaining a more realistic view of reality in order to become comfortable with what is possible. (Flaherty, 2005).

Existential coaching: Existentialism fully embraces the reality of life, the interconnectedness of it and how that causes unforeseeable anxieties and obstacles within a person (Spinelli, 2018; Spinelli and Horner, 2019). Spinelli, (2018) states that existential coaching views inner obstacles and their related responses as having some usefulness to the coachee as they enable the coachee to maintain their current view of the world. This relates to the neurobiological nature of 'survive and thrive' underpinning reflexive hindering. He goes on to conclude that during coaching inner obstacles will arise and that time and care should be taken to explore them. Overall, the building and maintaining of a deep and trustworthy relationship is seen as key to enabling obstacles to be insightfully explored (Spinelli, 2018; Spinelli and Horner, 2019).

Overall, the approaches in this category expect to work with and explore all of Beck's (1970) three levels of cognition to varying degrees. The resulting inner obstacles are expected and viewed as commonplace due to the interaction between a coachee's past and current experiences. They are also viewed as providing material to be worked with. The main concern in undertaking such discussions is about maintaining an ethical boundary between coaching and therapy, especially as there are increasingly more coaches with therapeutic training (Gillie and Shackleton, 2009). Overall, phenomena suggestive of reflexive hindering appear in this category's reviewed literature although their neurobiological mechanisms are not explicitly stated.

2.4.5 IV: In-depth exploration of dysfunctional and unquestionable inner obstacles often explicitly related to formative years

The coaching approaches in this category are prepared to work at an even deeper level of detail and exploration than III(b). The approaches include Transactional Analysis (TA) and Psychodynamic coaching from Table 2. These approaches have strong therapeutic backgrounds describing how our inner world affects our perception of reality and our reactions to it (Kilburg, 2004; Cox, Bachkirova and Clutterbuck, 2018; Palmer and Whybrow, 2019). Therefore, these coaches expect to work with the coachee's inner obstacles (Lee, 2018). However, Kilburg (2004), Cox, Bachkirova and Clutterbuck (2018), Palmer and Whybrow (2019) are keen to reference the distinction between using these approaches in their coaching verses their therapeutic format. The distinction given is that coaching does not seek to actively surface deep-seated problems and refrains from exploring them in a therapeutic manner (Stewart and Joines, 2002; Kilburg, 2004; Napper and Newton, 2018; Roberts and Brunning, 2019). Wilson (2019) lays out four points (Figure 14) to ensure that a coach, even if untrained in TA, can ethically use its language and models.

- Has a full understanding of the model they are using
- Has agreement with the client to share and use the model
- Has used the model to create awareness and generate insights into their own unconscious process
- Works ethically and with appropriate standards of professional practice

Figure 14: Wilson's ethical considerations for a coach using TA models and concepts (Wilson, 2019, p. 301)

Both approaches advocate educating the coachee about the origins and intricacies of their limiting assumptions and negative core values. This goes further than other approaches tend to do. (Kilburg, 2004; Cox, Bachkirova and Clutterbuck, 2018; Palmer and Whybrow, 2019)

Transactional Analysis (TA): One of TA's core principles is that our inner world profoundly affects how we engage with the external world (Wilson, 2019). Wilson (2019, p. 299) goes on to say that the role of the coach is to help the coachee "get out of their own way". To enable the coach to do that TA has over three hundred diagrammatic models and concepts (Napper and Newton, 2018). The most predominantly used concepts are the Parent-Adult-Child ego state interactions (Figure 15), the OK Corral's life positions (Figure 16) and the concept of scripts, strokes and games (Joines and Stewart, 2002). Napper and Newton (2018) state that the models are metaphorical in nature and that this may create a perception of reducing human complexity in favour of simplicity.

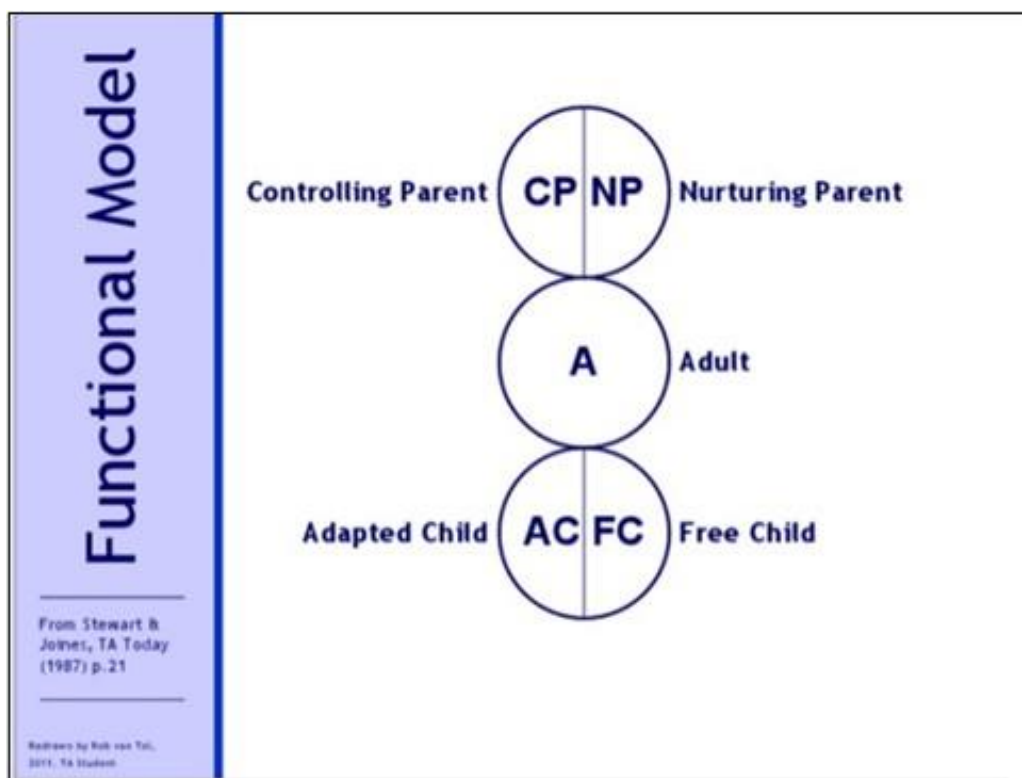


Figure 15: Functional ego states model in TA (Manu, 2014)

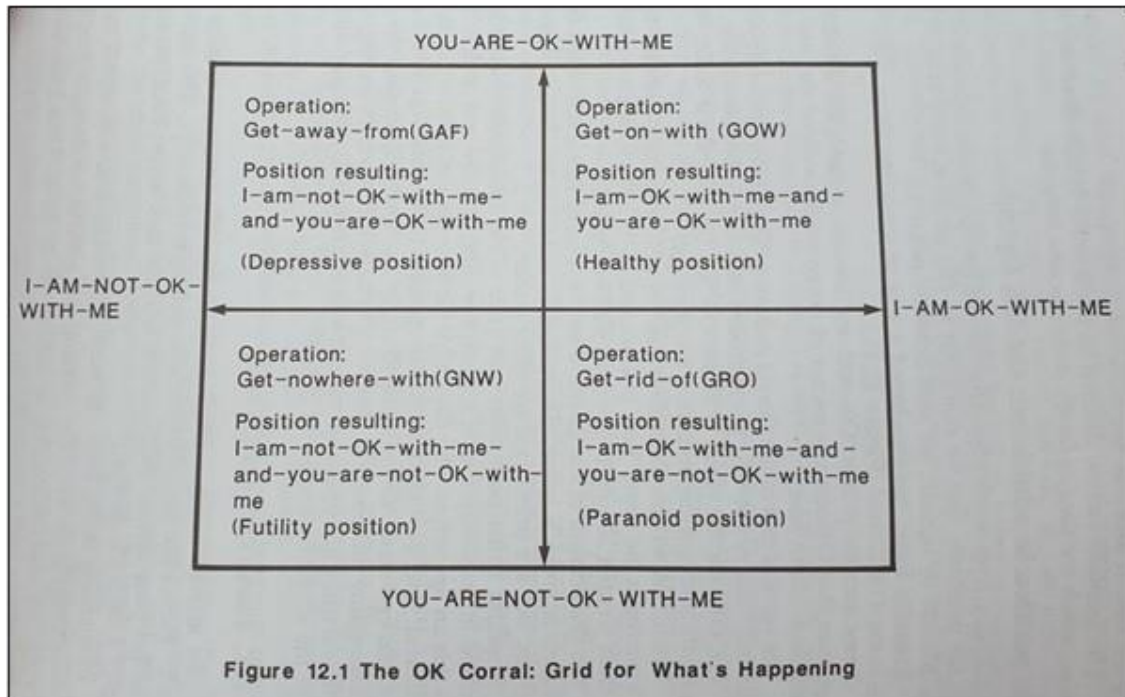


Figure 16: OK Corral's Life Positions (Joines and Stewart, 2002, p. 120)

Wilson (2019) expects TA conversations to stretch a coachee and cause some discomfort due to inner obstacles. She believes this can be tolerated within a safe environment as long as the person strongly desires to change. Wilson (2019, p. 300) advises that the "growing edge" of a coachee may have been breached if they cannot cope with the change or begin to have feelings of being overwhelmed. She suggests pacing the coaching work based on the coachee's reactions to remain inside their growing edge. Wilson (2019, p. 301) uses the description of "inciting overwhelming feelings of anxiety leading to immobilisation²" when she describes breaching the growing edge. This aligns with reflexive hindering although the underpinning neurobiological nature is not stated.

Psychodynamic coaching: Lee (2018) lays out four key assumptions underpinning psychodynamic coaching. Three of these relate to behaviour - how it is shaped by our formative years, how it is unconsciously influenced and how the opposing requirements of different parts of the mind affect it. Psychodynamic coaching therefore routinely explores past life experiences and how they influence the present. It uses the concepts of transference (Lee, 2018), containment (Roberts and Brunning, 2019), counter-

² Porges (2007) describes immobilisation as a defense system associated with reduced metabolic demands that causes behavioural shutdown, freezing or feigning of death.

transference (Lee, 2018), defence mechanisms (Lee, 2018), attachment theory (Kilburg, 2004) and making the unconscious conscious (Roberts and Brunning, 2019). Kilburg (2004) advocates educating coachees on how nonconscious processes and emotions influence their daily life. The concepts are however verbalised descriptive constructs although they comprehensively cover the nature and origin of a coachee's inner obstacles from that perspective.

Kilburg (2007) and Lee (2018) outline that Psychodynamic coaching expects to work with conversations that the coachee may find more difficult or threatening, although not until a significant relationship has been formed. They also assert that a coach would not expect to be predominantly working in this area and should know when to recommend counselling or therapy. Roberts and Brunning (2019) note that the coaching conversation may bring about problematic responses in the coachee. Lee (2018) and Roberts and Brunning (2019) suggest that creating a "holding environment" (Lee, 2018, p. 4) enables these conversations to be undertaken. This is a particularly safe environment in which the coach needs to be sensitive to the coach-coachee interaction and the coachee's capacity to continue. Lee (2018) asserts that the coach must be patient and ensure the relationship is deeply trusting. The coachee will then eventually discuss these deep-seated defence mechanisms and gradually work towards overcoming them.

References alluding to reflexive hindering were most prevalent in the reviewed psychodynamic literature. However, some are presented as defence mechanisms to prevent unacceptable impulses, such as wanting to hurt someone (Roberts and Brunning, 2019) and stem from psychodynamics' Freudian roots (Lee, 2018). Other references allude to neural pathways being created and sustained in order to reduce anxiety when it arises. Roberts and Brunning's (2019) discuss reactions that are triggered by a current situation which evoke responses related to previous negative experiences. In turn these create a maladaptive reaction to the current situation. This strongly aligns to reflexive hindering although their explanation stops at the descriptive level without any neurobiological positioning.

Overall, there was scant mention of neurobiological aspects in this category. Lee (2018) made one connection whilst stating that our formative years shape the neural pathways

and neurochemicals. Predominantly, the models are conceptual and the discussions descriptive. These are mainly based on the cognitive model (Figure 10) describing the interplay between thoughts, actions, physical sensations and emotions. Some references akin to reflexive hindering were observed, for example, going beyond the growing edge (Wilson, 2019). Also, section 1.4 on reflexive hindering expresses a similar statement to Wilson's (2019, p. 299) comment that coaches need to help coachees "get out of their own way". However, unlike TA's metaphorical models, this doctoral research seeks to enable an explanatory neuroscience-based conversation to be undertaken with the coachee.

2.4.6 Summary of coachee inner obstacles during coaching

The reviewed literature (shown in Table 2) acknowledges that coachee inner obstacles arise and can hamper the attainment of coaching goals. Typically, the obstacles align with Beck's (1970) three levels of cognition and the language used to describe them is conceptual in nature. The depth of discussion an approach undertakes on inner obstacles can be considered using two aspects. The cognitive level being explored according to Beck's (1970) three levels and the comprehensiveness of the discussion. This characterisation is visually summarised in Figure 17.

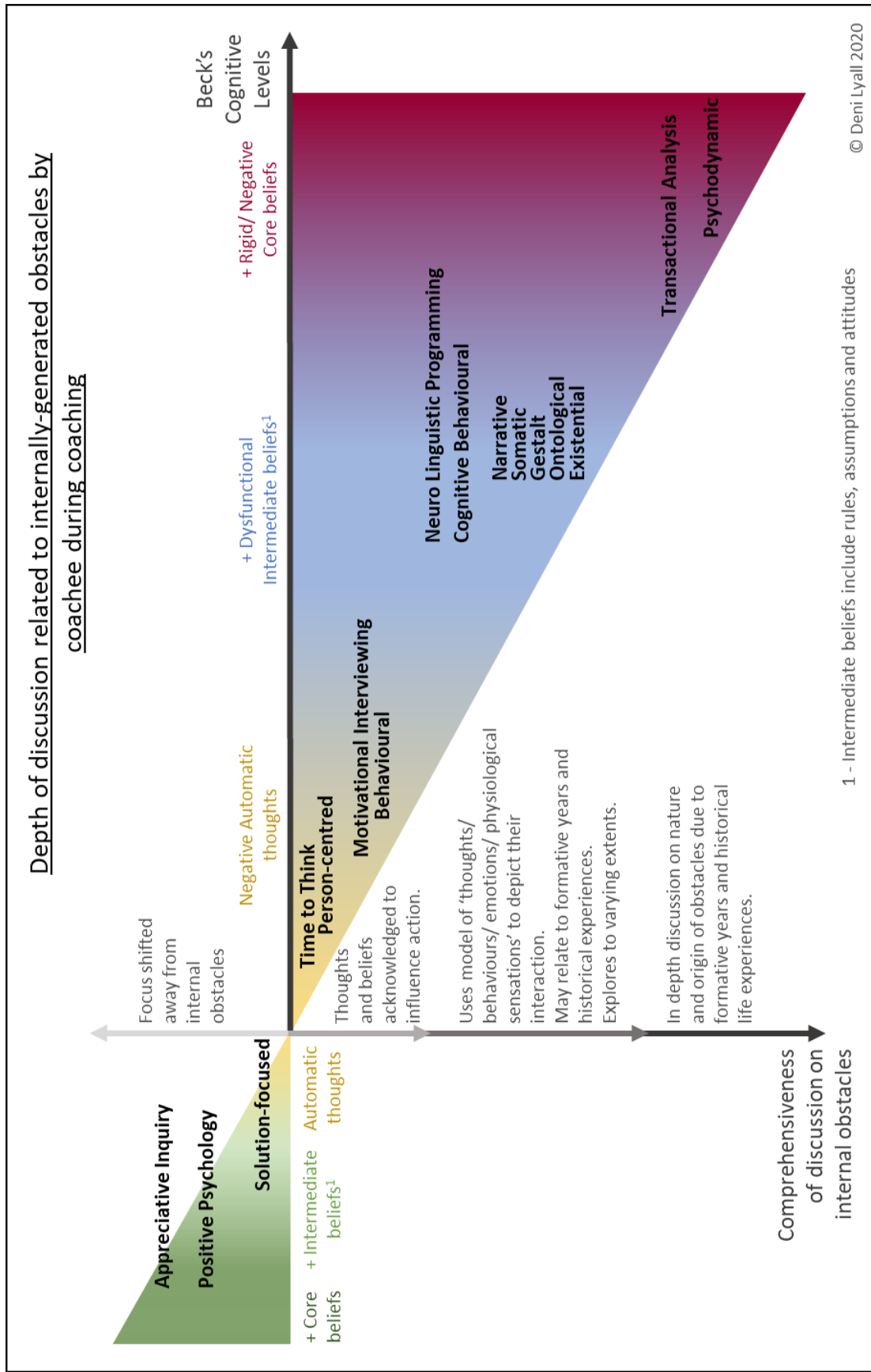


Figure 17: Diagram illustrating the depth of discussion related to coachee inner obstacles during coaching

The approaches link inner obstacles to formative years and historical experiences with varying levels of detail. The predominant cognitive model used to describe how and why the obstacles manifest is the thought-emotions-behaviour-physical sensations model (Figure 10). Beyond this, TA uses the metaphorical Parent-Adult-Child model (Figure 15) as one method to discuss the origins of the obstacles. Psychodynamic coaching, on the other hand, provides descriptive constructs for the nature and origin of the obstacles. There were no comprehensive discussions about the neurobiological aspects underpinning inner obstacles in any of the references cited. Overall, any neurobiological references were sparse and generalised.

There are however a diversity of tools, techniques and concepts to aid the coach with navigating inner obstacles. These are principally conceptual, metaphorical, cognitive and descriptive in style. Flaherty (2005) advocates that a coach requires continuous professional development in order to have a variety of these methods for handling obstacles. The main method for enabling the coachee to explore their inner obstacles, that underlies all the others, was widely viewed as the deepening of the safe environment created within the coaching session.

There was advocacy for the coachee needing to tolerate some discomfort when working with inner obstacles, especially when experimenting with new perceptions and behaviours. The level of coachee discomfort or “unnerving responses” (Aquilina and Strozzi-Heckler, 2019, p. 235) that are worked with in coaching appears to vary with the approach. Some approaches view certain levels of responses as a signal of pushing the coachee too far, whereas others view it as material to work with.

There were definite undertones of reflexive hindering or implications that it is occurs, although there were no direct references to its neurobiology. The strongest references were predominantly within the more therapy-based approaches,

- Cognitive Behavioural Therapy’s vicious flower exercise (Figure 12)
- The Gestalt coaching example (Allan and Whybrow, 2019, p. 183)
- The Ontological concept of unquestionable interpretations and Shabi’s (2019) reference to coachees that want to change but appear as if they do not wish to
- Existential coaching’s view that inner obstacles are useful and maintain the coachee’s current view of the world

- TA's reference to overwhelming feelings when the "growing edge" (Wilson, 2019, p. 301) is breached and that the coachee needs to "get out of their own way" (Wilson, 2019, p. 299)
- Psychodynamics' concept of defence mechanisms

Coaches have a preoccupation with and predominantly an aversion to leaning towards practices deemed to be in the realm of counselling or therapy. This was explicitly stated in the literature and some authors clearly differentiated the two applications. However, the boundaries between coaching and counselling are seldom well articulated in practice (Cox and Bachkirova, 2007; Gillie and Shackleton, 2009; Bachkirova and Baker, 2019). On the other hand, ontological and somatic approaches advocated the usefulness of exploring a coachee's formative years for the purpose of learning rather than therapy. Many of the category III(b) and IV approaches also agree that all responses are useful to the coachee and warrant equal exploration. Furthermore, they advocate that negatively viewed responses need to be normalised as they are part of life.

However, coaches and coaching approaches take a variety of stances with the 'grey area' between coaching and counselling. The prevailing coaching bodies' and coaching supervisory guidance is that a coach should work within the bounds of what they feel they are capable of doing (Cox and Bachkirova, 2007). This overarching rather than specific guidance is probably due to the eclectic mix of coaches' backgrounds, personalities, coach training, use of approaches (Cox, Bachkirova and Clutterbuck, 2014), and no clear definition of the 'grey area'.

The literature reviewed in Section 2.4 revealed the expansive coaching literature available on coaching approaches, tools and techniques. It also highlighted the paucity of writing on phenomena close to reflexive hindering and on any comprehensive volume of coaching literature related to a coachee's inner obstacles. Therefore, many of the references to inner obstacles are embedded sporadically within the overall literature. When they are mentioned it often leads to the literature giving extra details on how an approach would navigate those, rather than providing information on the underpinnings and nature of the obstacle itself, neurobiological or otherwise.

A metaphorical mind/ brain system model

The dominant conceptual mind/ brain model used in coaching is the cognitive model (Section 2.4.3, Figure 10) previously discussed. Bachkirova (2011) however developed a model of the mind/ brain system, derived from a variety of fields pertaining to the self, including psychology and neuroscience.

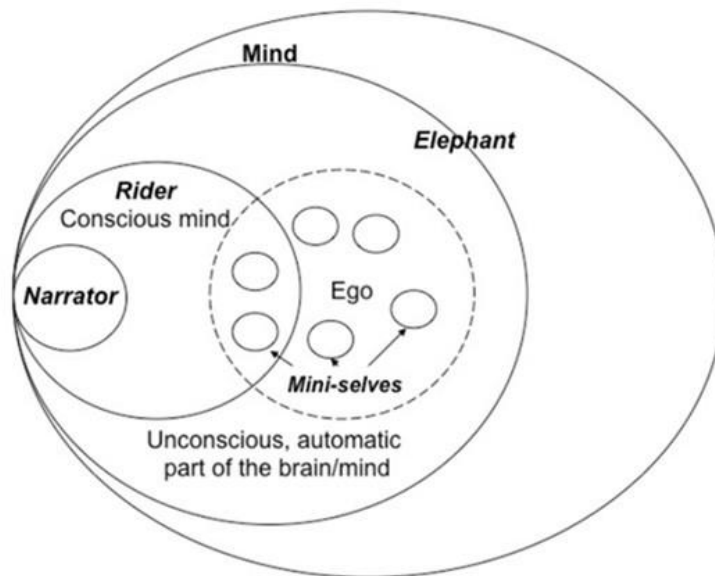


Figure 18: Relationship between ego, narrator and miniselves diagram (Bachkirova, 2018)

She asserts that it is representative of the science and acknowledges that it is metaphorical in nature (Bachkirova, 2011). In Figure 18 the elements relate as follows (Bachkirova, 2011, pp. 59-63)

- Narrator – presents a favourable story of the self, the story we tell ourselves
- Rider – conscious mind
- Mini-selves – each mini-self is a neural pattern responsible for a function
- Mind – includes conscious and unconscious elements
- Elephant – the whole organism minus the conscious mind

Her reasoning for the model is that,

“...coaches attempt to change the way individuals think, feel and act in the contexts of the goals set in coaching. This inevitably influences who they are. Isn't this enough reason to ask yourself, as a coach, what am I intervening with?”
(Bachkirova, 2011, p. 17)

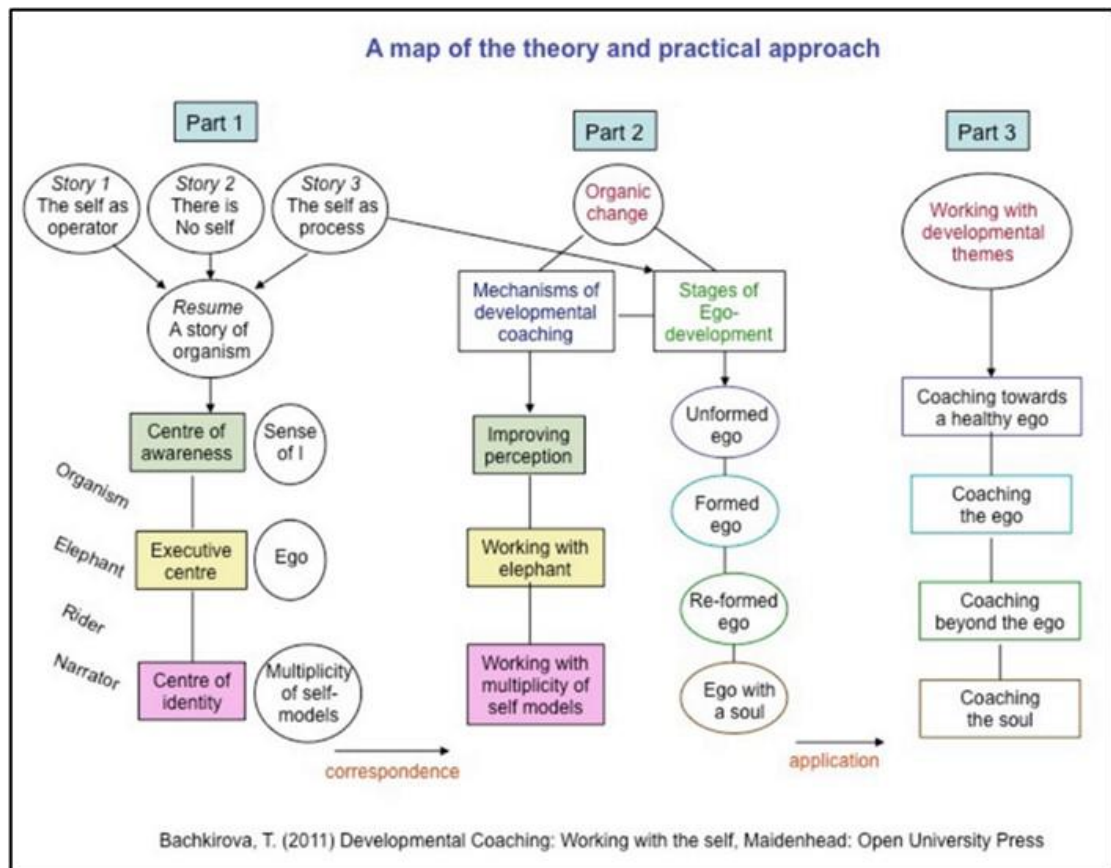


Figure 19: A map of the theory and practical approach of Developmental Coaching (Bachkirova, 2018)

Bachkirova (2011) also developed a framework (Figure 19) to understand which aspect of her model requires attention for a coachee to developmentally grow. It serves to inform coaches of the appropriate coaching approach to adopt and the nature of the work to undertake. However, it is not clear if the model is used directly with coachees. She also discusses “non-organic” (Bachkirova, 2011, p. 86) change which is change that is forced upon an individual by others or is superficially desired but unsustainable. She views resistance primarily as a sign of non-organic change and advocates not to coach the person (Bachkirova, 2011).

Bachkirova (2011) depicts various ways in which a coachee can hamper their own progress. These are self-protection mechanisms, inner self-critical talk and emotions that dominate other information but their neurobiological underpinnings are not mentioned. Overall, her advice is to create a safe environment and allow progress to evolve, accepting that it may be limited (Bachkirova, 2011).

2.5 Insights into reflexive hindering from pertinent personal change and therapy literature

A number of pertinent personal change and therapy references emerged during the coaching literature review. These were the work of Kegan (1994) on subject to object shift, rational behavioural therapy used when working with procrastination, the concept of immunity to change, and information processing theory which informs CBC. These are not coaching approaches per se, but in the context of reflexive hindering and this research, they appeared valuable to explore to some degree.

2.5.1 Subject-Object shift

The work of Kegan and Lahey (2009) highlighted Kegan's (1994) principle of the subject-object relationship, which appears pertinent to reflexive hindering. 'Object' refers to something that the person can stand back from and reflect upon. The person knows that they are detached from it. 'Subject' refers to something that is fused with the person, that is embedded within them and that they cannot reflect upon. Kegan states that,

"It has to do with what people can see and what they can't yet see; the thoughts and feelings we have and the thoughts and feelings that 'have us'; what agenda we are driving and what agenda is driving us. 'Epistemology' is about the distinction between what is available for you to work on ('object') and what you are so close to that you cannot see it, so it is working on you ('subject')."

(Kegan, 2009, quoted in Bachkirova, 2009, p. 11)

Enhancing the ability to retain objectivity with increasing complexity is viewed as developmental growth. This indicates a shift in maturity and enhances the person's ability to navigate ambiguity and complexity (Kegan and Lahey, 2009). In essence, it enables the person *to work on it* rather than *it working on them* (Bachkirova, 2009).

The concept of something "working on you" (Kegan, 2009, quoted in Bachkirova, 2009, p. 11) seems to describe a reflexive-hindering characteristic as it is a neural pathway producing a neurobiological response. The person may be more objective about the reaction if it is not too severe. However, in some coaching conversations actions become implausible as the reflexive-hindering response intensifies and objectivity is lost.

2.5.2 Rational Emotive Behaviour therapy

Some aspects of the reviewed Rational Emotive Behaviour therapy (REBT) literature are pertinent to reflexive hindering and add further detail to the dynamic. REBT has also been adapted for coaching as it enables coaches to work on psychological obstacles (Palmer, 2009). Ellam-Dyson and Palmer (2010) and Turner (2016) hold that REBT's central tenet is that someone's beliefs about an event learned from significant others cause the emotional and behavioural issues. Turner (2016) states that the ABCDE exercise (Section 2.4.3, Figure 11) enables clients to understand that it is not the event that causes problems but their beliefs about it. He adds that the ABCDE template is a conceptual and cognitive model, albeit a simple and memorable one. It appears therefore that REBT seeks a subject to object shift (Neenan, 2008; Pychyl and Flett, 2012). This endorses the idea that it is valuable for a coach to help a coachee objectively differentiate their reaction from the situation. This is also the aim of defining and outlining reflexive hindering, although the intention is to enable the shift through an explanatory and neurobiologically-based conversation.

Neenan (2008) advocates that irrational beliefs, underlying procrastination, are REBT's main focus. Turner (2016) adds that rational beliefs are consistent with reality whereas irrational beliefs are not. Therefore, the key step in the ABCDE model for belief change is step D, which stands for Dispute. In step D, the client is asked to consider if there is evidence for the belief, if it is logical and whether it is helpful (Turner, 2016). Neenan (2008, pp. 58) gives an example in which his client has "strong anxiety" that is linked to an irrational belief. Neenan's client states his irrational belief first and then a preferable alternative rational belief: a process that requires the client to be able to state both the irrational and rational beliefs.

Reflexive hindering however often creates bafflement within a coachee when they are asked about the underpinning belief. This is because it is a neurobiological response and they are subjectively experiencing it. The response usually feels unquestionable (Shabi, 2015) and the emotions are *real* for the person. Therefore, it *is* their reality for them, despite being irrational to the observer (Bluckert, 2018). Coachees often state, with reflexive hindering that they instinctively refrain from taking action although they logically understand they could act. The situation baffles them and consequently they take limited or no action. The subjective nature of the response may explain the

bafflement as the coachee does not necessarily feel they have an irrational belief, even with contrary evidence. The reflexive-hindering coachee can therefore struggle to give either a sound irrational belief for the reaction or a rational alternative. Thus, REBT might have limitations and an explanatory neurobiologically-based conversation may sometimes be a valuable precursor to the ABCDE exercise.

2.5.3 The concept of immunity to change

Kegan and Lahey (2009) have developed a four-column exercise (Figure 20) to help leaders overcome what they describe as “immunity to change” (Kegan and Lahey, 2009, p. x). This is where the leader wishes to change but consistently repeats their current behaviour instead, thus thwarting their own change efforts. The four-column exercise enables the leader to identify deep-seated assumptions that, unbeknownst to them, maintain the status-quo of who they are.





← The X-ray →		← The Solution →	
Step 1 	Step 2 	Step 3 	Step 4 
Define “One Big Thing” from list of goals to be attained Gain visible commitment through behavioral improvement goals	Uncover what one is doing/ not doing instead of improvement goals in Step 1 List behaviors that work against these goals	Determine Hidden Competing Commitments List those commitments that reinforce you doing Step 2 behaviors Reflect on what insights are revealed between reviewing disconnects and conflicts of Steps 3 and Step 1	Decide and test the validity of what constitutes our “big assumptions”, the tenets in our mental models, that sustain our immune system First, list these big assumptions that are uncritically taken as being true Second, experiment in a safe environment to test their validity – modify assumptions accordingly which should have impact on Step 2 behaviors
1. Be receptive to more new ideas 2. Create a culture of mutual trust and unwavering support	1. Giving curt responses to new ideas, “closing off”, cutting off” or overruling tone 2. We are judgmental and critical of each other	1. To have things done my way 2. We are committed to preserving the pleasure of harshly criticizing and judging each other	1. If I don’t find a way to get things done, I’ll stop being valuable. 2. Our individual judgments are superior to any collective judgment.

Figure 20: Immunity to Change Four Column exercise (Flora, 2017)

Kegan and Lahey’s (2009) exercise is a variation of the ABCDE form with some distinct differences. Firstly, it is working with a desired change rather than a triggering event. Also, column four identifies rigid core beliefs or assumptions, whereas column three is more aligned with negative thoughts and limiting beliefs or assumptions. Effectively the

beliefs in ABCDE's step B are split out. The four-column exercise does however aim to create a subject to object shift as does the ABCDE form.

Kegan and Lahey (2009, pp. 48-50) propose that the immunity to change emanates from our "anxiety-management system". This system within us is designed to prevent anxious feelings, unless it is stripped away. They maintain that the habitual behaviour created by it, operates to suppress an underlying anxiety that would otherwise manifest itself. Furthermore, the system has associated costs that appear when we wish to adapt to new circumstances. They also assert that change does not create discomfort. The discomfort comes from us sensing that we lack an adequate defence system in the new situation. They summarise it by saying,

"our immune system has been giving us relief from anxiety, while creating a false belief that many things are impossible for us to do – *things that are completely possible for us to do!*"

(Kegan and Lahey, 2009, p. 50)

Their concept of the anxiety-management system and its role, appears to match the neurobiologically-based explanation of reflexive hindering. The anxiety-management system is founded on the premise that people have a deep-seated belief that life is fundamentally dangerous and it is designed to protect them from that. This is analogous to the neurobiologically-based 'survive and thrive' instinct and threat response system. However, the explanation of the anxiety-management system is descriptive and does not go into any neurobiological depth.

The four-column exercise enables the leader to clearly see their internal contradictions laid out in front of them (Kegan and Lahey, 2009). Additionally, the leader is asked to reflect upon the historical foundation of column four's assumption as part of the change work. This helps reframe the assumption from being innate to having been learned and therefore it becomes modifiable. (Kegan and Lahey, 2002). These aspects seek to enable a leader to make the subject to object shift and to critically reflect upon the situation. In one respect the leader is no longer fused with the situation, although those feelings are still going to arise and curb their actions in the immediate future. As mentioned with the ABCDE form, a neurobiologically-based conversation about reflexive hindering may be valuable at this point. It might also add some weight to the need to tolerate the discomfort of experimenting with different actions and normalise any setbacks.

2.5.4 Information Process Theory

Information processing theory (IPT) (Palmer and Szymanska, 2019) is a multidisciplinary field (Beck and Clark, 1997; Miller, 2003) which CBT draws upon, amongst others. Its various theories and models are used to inform the understanding of and interventions for various clinical conditions (Beck and Clark, 1997; Duff and Kinderman, 2006; Brewin, 2001). Those of dual representation (Brewin, 2001, Brewin and Holmes, 2003; Brewin et al., 2010) and interacting cognitive subsystems (Barnard and Teasdale, 1993; May and Barnard, 2004; Duff and Kinderman, 2006) highlight concepts that correlate with or elucidate certain reflexive hindering characteristics. They outline two conceptual system-level models with underpinning neuroscience assumptions, although the extent to which those assumptions are referenced varies with each theory.

Dual representation theory proposes that there are two memory systems (Brewin, 2001, Brewin and Holmes, 2003; Brewin et al., 2010). One, contextual memory (Brewin et al., 2010), stores information about an event that can be deliberately recalled, or triggered non-consciously. When it is triggered the individual associates the information as being part of a memory. The second, sensation-based memory (Brewin et al., 2010), stores information from the senses and internal bodily sensations. Brewin and Holmes (2003) say that this information is continuously entering the brain via the senses and will be non-consciously processed to varying extents. However, it is not accessible through deliberate recall. If another situation has similar cues then the memory could be non-consciously triggered, although the individual does not necessarily associate these sensations with a memory (Brewin et al., 2010). Whether they are recollected as part of a memory depends on how well these sensation-based memories are linked to a corresponding contextual memory.

The sensation-based and contextual memories work together when strongly linked and the individual knows the sensations are a memory. (Brewin et al., 2010) These sensations may impact upon the individual in a positive or negative manner and to varying degrees depending on the nature of the memory. However, the brain is likely to be able to exert some appropriate degree of control as there is awareness that it is memory. Alternatively, the individual might have no or little appreciation that these sensations are a memory when the sensation-based memory only weakly links to a contextual memory. Thus, the sensations feel as if they are 'in the present' i.e., *real* and

true at that moment, even during normal functioning of the system (Brewin, 2001, Brewin and Holmes, 2003; Brewin et al., 2010). If the triggered sensations are minor, Brewin et al. (2010) state that they quickly fade and do not impact the individual to any great extent. However, if the triggered sensations are stronger then they may influence the individual to a greater extent. PTSD is an acute example of this due to the neurobiological effects of trauma on the hippocampus's memory storage function (Brewin et al., 2010). Dual representation theory thus acknowledges responses akin to those when reflexive-hindering coachees have responses and feelings that seem *real* and *true* for them.

Interacting cognitive subsystem theory (Barnard and Teasdale, 1993; May and Barnard, 2004; Duff and Kinderman, 2006) seeks to be a general model of human cognition (Figure 21), albeit a complex one, that accounts for all cognitive processing: how an individual interprets the world and, therefore, interacts within it (Barnard and Teasdale, 1993). It has been used to develop interventions and understanding of various clinical disorders (Duff and Kinderman, 2006).

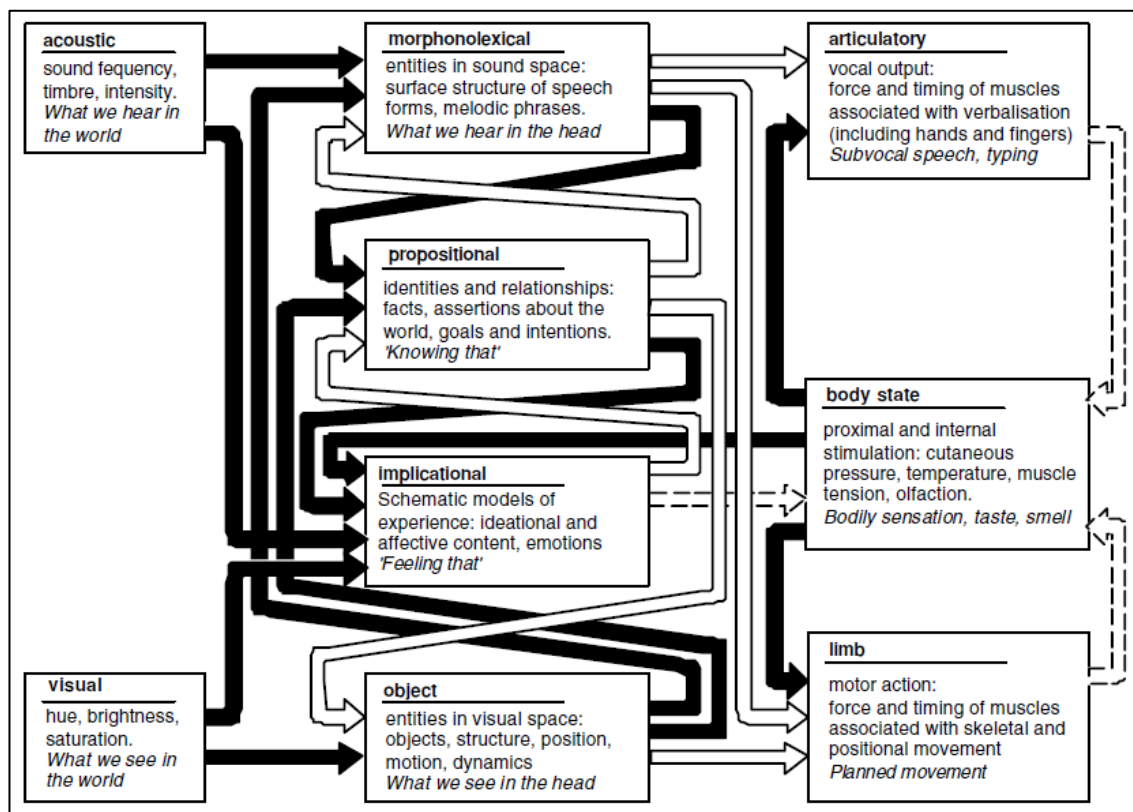


Figure 21: The nine subsystem of ICS and the classes of information processed at each subsystem. (May and Barnard, 2004, p. 295).

Black arrows represent “abstractive” flow (increase in abstraction), white arrows “elaborative” flow (detail from higher levels of abstraction fed back to add new information to lower subsystems). Dashed arrows are indirect, because they represent information exchange mediated by changes in the body.

All information that is input to a subsystem is stored by that subsystem but there is only one flow of information being transformed (processed) at a time. Consequently, whilst all inputs are stored, not all are processed - acted upon. Overtime, the subsystem forms automatic and fast procedures for processing information by noting familiar inputs and recognising reoccurring patterns overtime. Therefore, familiar inputs are quickly processed and stored information is not access (automatic habits). Unfamiliar or contradictory inputs (discrepant) take more resources to process as stored information is accessed. The previous experiences are analysed to help process the discrepant information. Consequently, new or modified outputs are created and processes are updated: learning takes place and the individual can adapt to the unfamiliar or new circumstances. Discrepant inputs take priority but they are not processed if previous experience indicates that they do not create or enhance a beneficial response.

There are two aspects of ICS theory that appear informative with respect to reflexive hindering. Firstly, not all discrepant inputs that would be beneficial are processed. Duff and Kinderman (2006) describe, when discussing personality disorders, how discrepant inputs that were previously and strongly not indicative of a beneficial outcome, are subsequently discounted and ignored, even though in this new circumstance they would have created a beneficial response. These aspects of ICS may partly explain how a coachee is motivated to change, discusses actions that they could take but makes little or no progress. Often, they can see how they are hindering themselves although that does not appear to be conscious but they display bafflement as to the reasons why that cannot progress.

The second notable characteristic is that a self-preserving feedback loop between subsystems can be set-up that reinforces itself and becomes difficult to modify, especially when there is little external stimuli (Duff and Kinderman, 2006, p. 242). For example, the implicational subsystem may create a sense of hopelessness which is fed

back to the propositional subsystem and is used to create a representation of being hopeless. The body state subsystem may also be activated to create a feeling of hopelessness. The updated outputs from the propositional and body state subsystems then feed into the implicational subsystem, thus reinforcing its output further – a deeper sense of hopelessness. This can be difficult to interrupt without sufficient external input and may shed light on how some reflexively hindered coachees become locked into their habit. Their actions appear congruent to them, in that this must be unreasonable or scary as I feel that way about it. Consequently, no action is taken and without new external input the belief becomes self-preserving.

The consequence of these two characteristics, especially if they co-occur, is that the current processes are not as up-to-date as they could be and that habitual responses are repeated and reinforced. Both these attributes lead to what appears to be useful outcomes as there is no new information processed to create experiences that might prove otherwise. These two aspects of the ICS model may go some way to shedding light on the seemingly baffling position that reflexive-hindering coachees find themselves in. If new experiences are not undertaken or fully processed then self-preserving loops have little or no new information to learn from.

Duff and Kinderman (2006) state that taking actions alone is ineffective as the resultant discrepant inputs are unlikely to get to the point of being processed. Hence, they advocate that interventions which help the individual think about their cognitive processes are more effective. It helps the individual break self-preserving loops and see previously discounted information as potentially valuable. Therefore, an explanatory neurobiologically-based conversation might prove a useful intervention to aid an individual's understanding of their cognitive processing.

2.6 Compassion focused therapy

Compassion Focused Coaching (Irons, Palmer and Hall, 2019) is one of the approaches in the Handbook of Coaching Psychology (Palmer and Whybrow, 2019) and describes some similar themes to those in section 1.4 on reflexive hindering. Irons, Palmer and Hall (2019) propose that Compassion Focused Coaching (CFC) is suitable for coachees with issues related to their threat-based system, especially if these are hampering their goals. There is also a strong emphasis on understanding some of the brain's

idiosyncrasies. CFC is a newly evolving coaching approach and is based on Compassion Focused Therapy (CFT) (Gilbert, 2013). Thus, the only coaching-relevant literature on CFC appears to be the chapter by Irons, Palmer and Hall (2019) and they suggest that further research is warranted to understand its benefits and its appropriate use. However, the literature on CFT is more prolific, especially by Gilbert (1998, 2009, 2010, 2013, 2014).

Compassion Focused Therapy (CFT) is designed for working with difficult emotions and feelings, such as shame and self-criticism (Gilbert, 2014). Gilbert observed that standard therapies did not work well for a subset of clients. He found that although they could logically state new positive attitudes, they also maintained that they still felt the same (Gilbert, 2009; Irons, Palmer and Hall, 2019). He realised that these clients were blocked and unable to fully change. The blocking happened both within sessions and when attempting agreed actions outside of the sessions (Gilbert, n.d.). These clients correlate well with reflexive-hindering coachees as described in section 1.4. Kegan and Lahey (2002) discuss the need to be detached from, rather than be fused with, certain experiences. Gilbert (n.d.) believes it is necessary to understand certain aspects about the brain in order for these clients to become objective. He advocates that understanding our “tricky brains” (Gilbert, 2014, p. 17), especially for some clients, means “we can see what we’re up against” (Gilbert, 2013, p. 17). The comparable statement in section 1.4.3 resonates with this.

Also, Gilbert (2014) asserts that working with a compassionate focus is a healthy and necessary position to take. This is endorsed by the work of Boyatzis, Smith (Boyatzis and Smith, 2012), Jack (Boyatzis and Jack, 2018) and Van Oosten (Boyatzis and Van Oosten, 2019). This research demonstrates how coaching with compassion engages the parasympathetic nervous system which is related to feelings of calmness and safety. Thus, CFT is based on a science of the mind (Gilbert, 2014). It aims to work with fears, blocks and resistances to reach desired therapeutic outcomes, i.e. compassion and positive emotions (Gilbert, n.d.).

Overall, Gilbert (n.d.) views the brain as the client’s biggest challenge. Consequently, Gilbert (1998, 2010, 2014) dedicates time to educating the client about the brain’s evolution, its idiosyncrasies and relevant emotional regulation systems. He advocates that building awareness helps the client reflect upon their ingrained reactions (Irons,

Palmer and Hall, 2019). Thus, enabling them to understand how earlier memories drive nonconscious responses (Gilbert, 2013). His premise is that if you become aware of how your emotions drive you then you are better able to control this, otherwise they take over (Gilbert, n.d.). He also raises a number of other points that are pertinent to reflexive hindering. These are: -

- Our self-protection prevents us from learning and growing (Gilbert, 2010)
- The threat system works on a “[b]etter safe than sorry” (Gilbert, 2013, p. 149) principle and therefore can sometimes overestimate the risk of situations (Gilbert, 2013; Welford 2016).
- Previous experiences cause responses and negative thinking that are not necessarily appropriate to the situation (Gilbert, 2013).
- Thinking about a situation alone can trigger the responses and emotions (Gilbert, 2010).
- Clients can automatically assume that because they feel something then the associated belief must also be true. For example, “*I feel disgusted, so this means it’s bad*” (Gilbert, 2013, p. 40).

He conducts the education by using simple visuals (Gilbert, n.d.) and concrete examples (Gilbert, 2009, 2010). For example, by asking, ‘Remember when you ate something that tasted disgusting. Do you get a reaction by just thinking about it?’. His aim is to demonstrate that the client did not ask for the brain they have and that with a different upbringing they would have a different brain (Gilbert, 2014). He also seeks to demonstrate that the brain is designed to make what appear to us as mistakes (Gilbert, 2013). For example, in an area with poisonous snakes, a stick on the ground may be safer to quickly assess as a snake rather than to take more time to differentiate it as a stick, as such a delay could be life-threatening if it is indeed a snake. Therefore, the apparent mistake is a useful survival mechanism. Overall, this education aims to increase the client’s self-compassion and motivation to change.

Gilbert (2010) states that clients can learn to detach themselves from their responses and modify their behaviour. This is achieved through intentional practice and orchestrated new experiences (Gilbert, 2010; Welford, 2016). He also notes that a client

needs to tolerate the emotional discomfort during the initial stages of change until that response has significantly subdued (Gilbert, 2014).

Gilbert does not delve deeply into neurobiology but stays at a systems level. He situates CFT around the three relevant emotional regulations systems (Gilbert, 2013) shown in Figure 22, all of which he outlines as having benefits and costs (Gilbert, 2013; Welford, 2016).

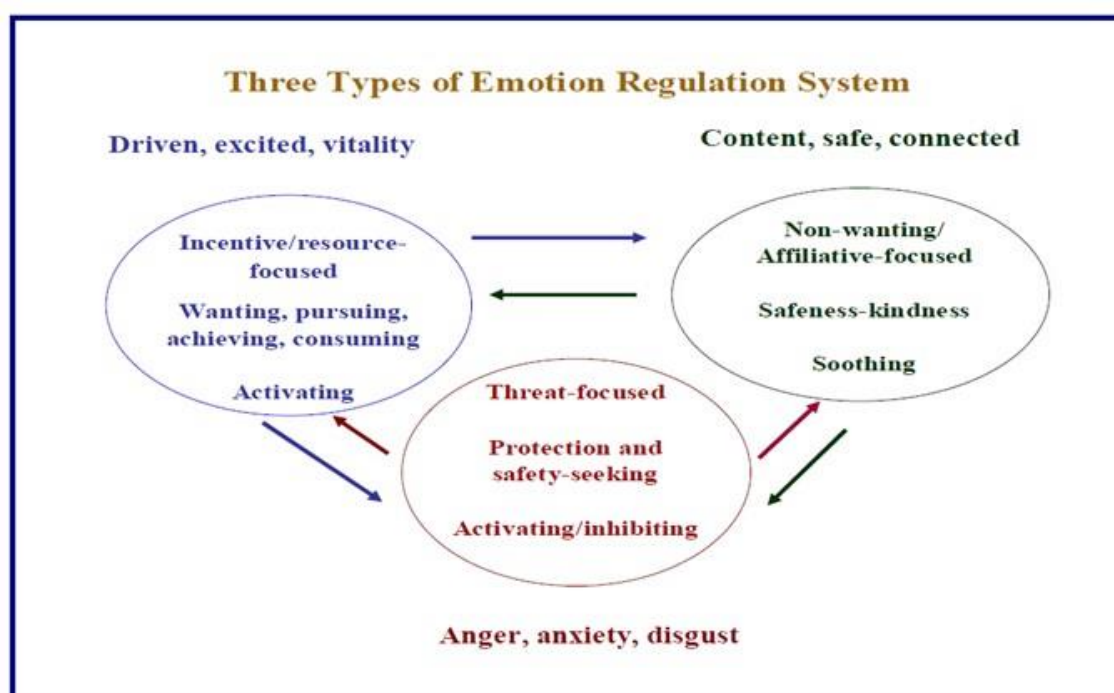


Figure 22: Diagram of the interactions between different emotional regulation systems (Gilbert, 2010, p. 17)

Gilbert (2013) believes the model shown in Figure 22 is a simple yet useful representation of Depue and Morrone-Strupinsky's (2005) work on the three systems. The focus on emotions is linked to the fact that strong emotions drive behaviour and action (Gilbert, 2013). Again, he spends time helping clients understand these systems and how they interact (Gilbert, 2009).

Once the client is educated and open to new possibilities, CFT uses exercises and tools from many related fields to increase compassion and rebalance the three systems (Gilbert 2009; Welford, 2016). These include the fields of meditation, mindfulness, positive psychology and cognitive behavioural therapies.

In summary, there are a number of parallels between reflexive hindering and Gilbert's work. These include,

- the acknowledgement of this subset of client
- a proposition for the neurobiological foundation of the hindering and realising that aspects of the client's brain are a significant challenge
- that these responses are learned and not innate
- that the unexamined and unquestioned responses from earlier life experiences can prevent growth and learning
- the need to detach and reflect as one route to opening up possibilities for change
- that change can happen with practice and with tolerance for further uncomfortable responses in the initial stages

Gilbert's (1998, 2009, 2010, 2013, 2014) work demonstrates the value of psychoeducation in relevant aspects of the brain and that it does not need to include substantial amounts of technical terminology. He also demonstrates that doing so adds value to the subsequent use of standard therapeutic interventions. These views are supported by Irons, Palmer and Hall (2019) for CFC.

2.7 Neuroscience-informed brain models commonly used within coaching

Coaching predominantly uses conceptual mind/ brain models (section 2.4) for coachee psychoeducation. Although with the increased interest in neuroscience by coaches, models from the field of neuroscience are now more prevalent within coaching sessions. The triune brain and the limbic system are two such models used by coaches (Siegel, 2011; Dixit and Dixit, 2018).

A Google search of the term 'triune brain+coaching' (Accessed 11/03/2020) produced mixed results. Some coaching webpages demonstrate that the triune brain is commonly used, others seem attached to using it despite acknowledging it is not supported by neuroscience, and other results dismiss it as unfounded. Brann (2015) makes it clear to coaches that neuroscience is predominantly shifting towards abandoning the triune

brain and that coaches should only use it with caution, if at all. Hawkins and Smith (2010) initially advocated its use in coaching but appear to have subsequently altered their stance (Hawkins and Smith, 2018).

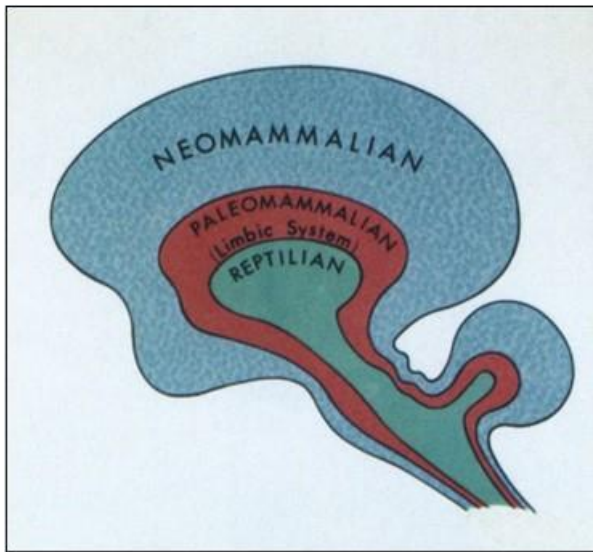


Figure 23: The Triune Brain (Farley, 2008)

The triune brain (Figure 23) was developed by MacLean (LeDoux, 2019) and describes the brain as three brains built one upon the other (Cozolino, 2017). Pinker (2015) and Cozolino (2017) state that it is incorrect. This is mainly due to its depiction of three separate brains when in fact the earlier sections have been modified (Pinker, 2015) and are more integrated than is often portrayed (Amthor, 2016). Barrett's (2017) concern with the model is that it implies emotions are entirely regulated by thinking.

However, other neuroscientists, such as Curran (2008) and Siegel (2011), use the model. Amthor (2014, p, 165) maintains that it can be useful as it portrays both "evolutionary and hierarchical control". Miller (2016, p. 109) states that the "Hand Model of the Brain", originated by Siegel (2011), is popular with clients during neuroeducation as it is easy to remember. However, Cesario, Johnson and Eisthen (2019) and Riddell (2019) state that psychologists and coaches, respectively, have a responsibility not to collude in propagating misconceptions.

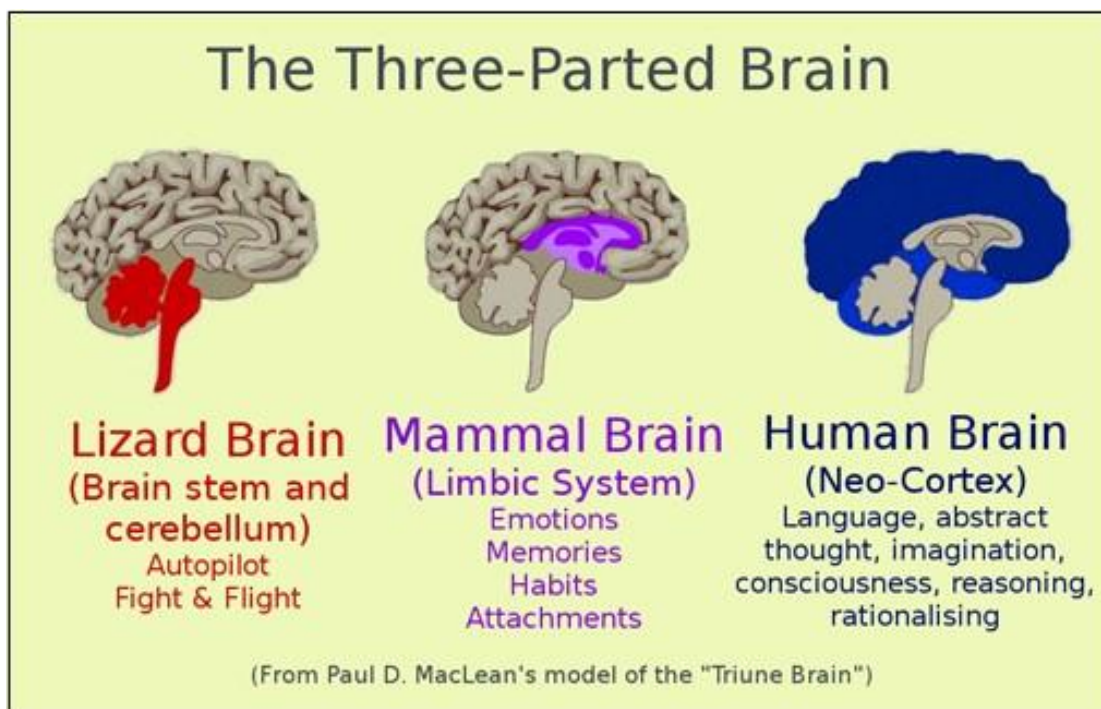


Figure 24: Triune brain (Quillette Pty Ltd, 2018)

Internet searches (accessed: 11/03/2020) show triune brain diagrams that are neurobiologically unsupported, such as the label 'human brain' in Figure 24. As Cesario, Johnson and Eisthen (2019) discuss, animals other than humans have all three brain divisions as well. Overall, they are strongly averse to its continued use.

Amthor (2014) and Barrett (2017) draw similar conclusions about the limbic system - that it is outdated and neurobiologically unsound. Its structures are now known to be involved in other non-emotional processes and other areas are also involved in emotions (Dingman, 2019). Neuroscientist Barbara L. Finlay (2017, quoted in Barrett, 2017, p. 81) says "Mapping emotion onto just the middle part of the brain, and reason and logic onto the cortex, is just plain silly". Yet the limbic system is another construct used within coaching, although it is ill-defined (Dingman, 2019) and is not a model per se. It is predominantly linked to the 'amygdala hijack', a term initiated by Goleman (Nadler, 2011; Loberg and Parker, 2018).

The popularised version of the amygdala hijack is Kahneman's (2012) System 1 and System 2 representation (Figure 25). Barrett (2017) notes that Kahneman himself was keen to emphasise its metaphorical nature, although she adds that System 1 and 2 have since been stereotyped "as blobs in the brain" (Barrett, 2017, p. 169).

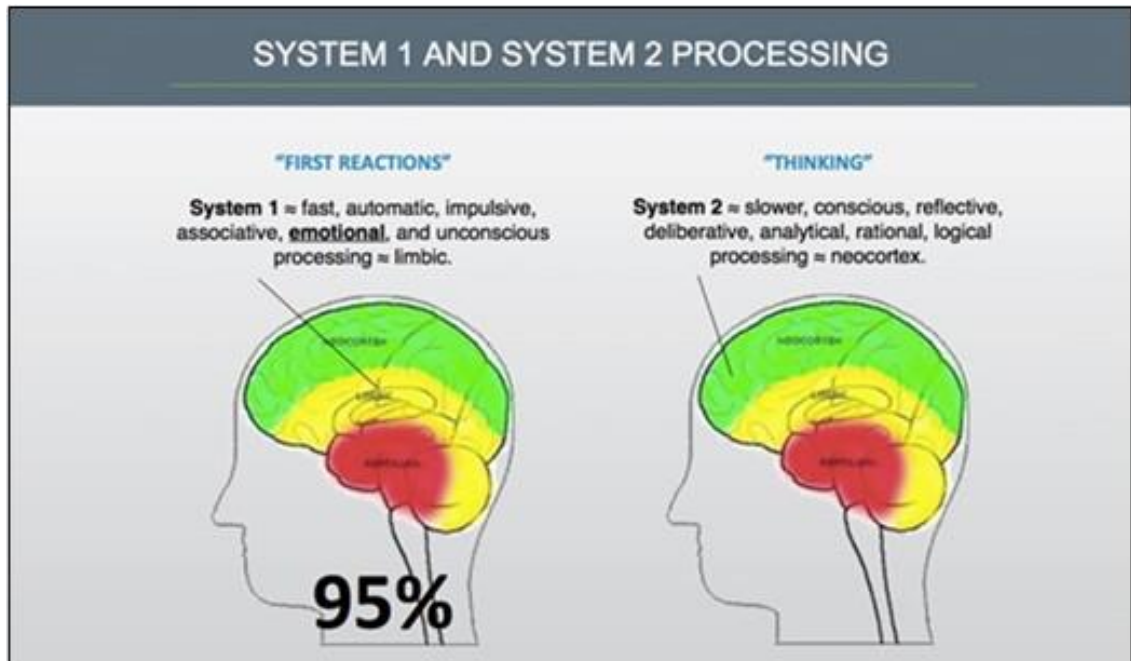


Figure 25: Kahneman's Thinking fast, thinking slow model (Schmelkin, 2018)

Peters' (2012) chimp model (Figure 26) also uses characterisation. The limbic system is represented by a chimp, the frontal lobe by a human and the parietal lobe by a computer. He advocates that understanding how your mind works is important as it helps you manage it. Peters (2012) also says that the chimp model is founded on neuroscience principles and that the metaphorical construct simplifies the neuroscience concepts. It does however contain a chimp, human, computer, gremlins, goblins, an autopilot and a stone of life and is set within a solar system containing seventeen planets and moons (Peters, 2012).

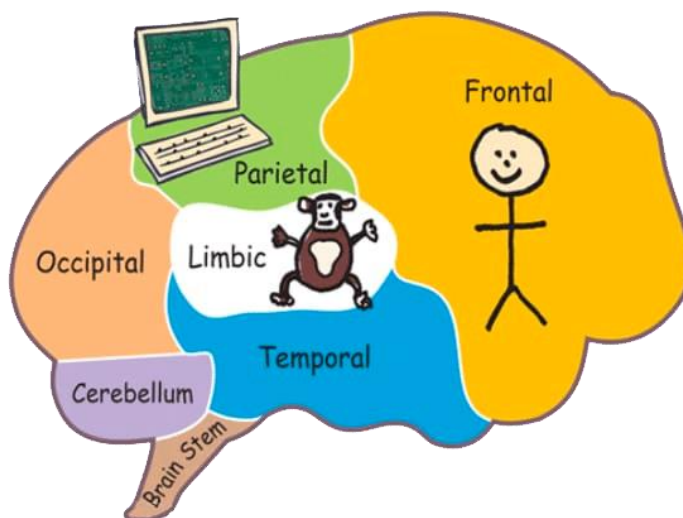


Figure 26: The Chimp Model (Chimp Management Ltd, n.d.)

It also continues with the demarcation theme between rationality and emotion, using the concept of a “divided planet” (Peters, 2012, p. 15) for the human and chimp. Peters (2012, p. 15) states that it denotes “the battles that goes on inside your head”. A theme that is prevalent throughout the book.

‘The Chimp Paradox’ (Peters, 2011) although written for self-development is also used by coaches. Haldane’s (2015) review of the book cites its usefulness especially for those struggling with their emotional control. He caveats this by stating that some cerebral readers may find it childish and that there is an overuse of metaphor when explanatory language may suffice.

Schwartz, Thomson and Kleiner’s (2016) ‘High Road and Low Road’ schematic (Figure 27) may be preferred by Haldane’s (2015) more cerebral readers. It presents an explanatory and integrated view. The descriptions are positioned as *more considered* and *more reactive* behavioural options with both being given equal weight regarding their usefulness towards outcomes (Schwartz, Thomson and Kleiner, 2016).

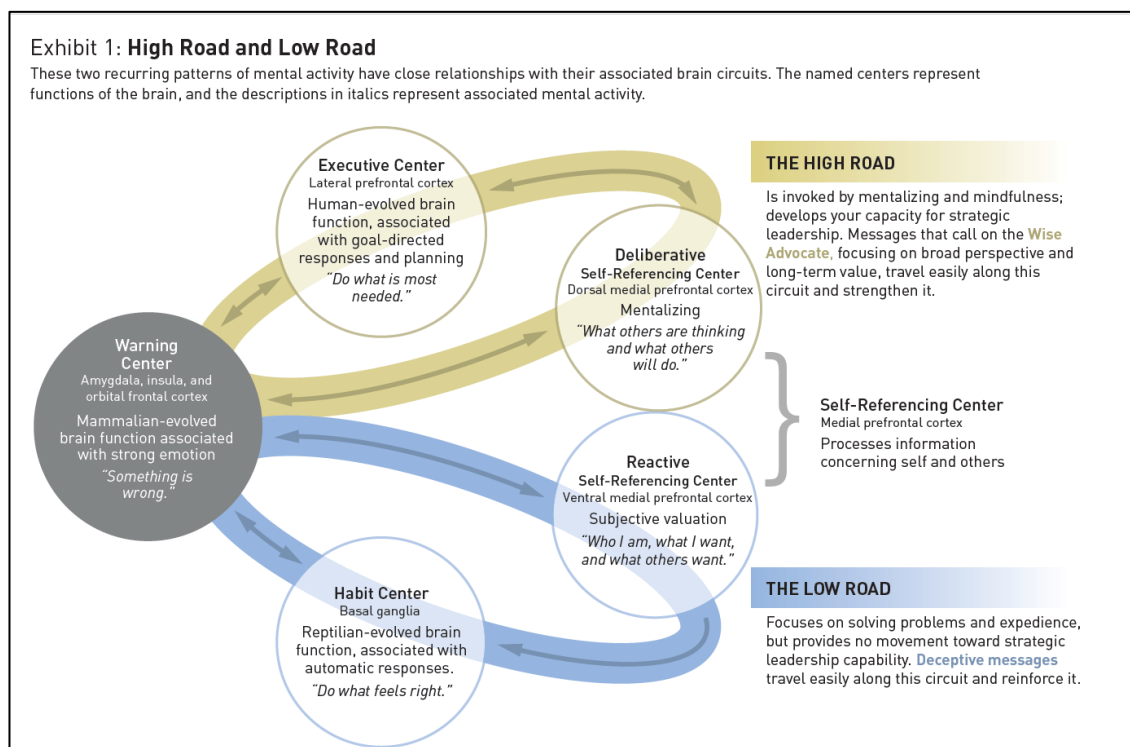


Figure 27: High Road and Low Road model (Schwartz, Thomson and Kleiner, 2016)

Another strong criticism that Barrett (2017), Cesario, Johnson and Eisthen (2019) have of the triune brain and limbic system models is the characterisation of “rationality

battling emotion” (Cesario, Johnson and Eisthen, 2019, p. 12). Their view is also supported by the updated understanding that emotions are a key part of decision-making and thinking (Gilbert, 2013; Barrett, 2017). They especially dislike how emotion is often depicted unfavourably and rationality favourably. Their supposition is that the influences of traditional views, especially those of Freud and Plato, are hard to eradicate. However, the literature frequently represents different parts of the brain as being in conflict with each other, despite the outdated partitioning and personification of neural networks and neurochemicals this imposes.

2.8 Coaching and neuroscience

Section 2.7 demonstrates that there are areas of contention and differing views over the use of the reviewed models. This also emerged for the topic of coaching and neuroscience during my broader neuroscience reading discussed in section 1.5.2. I therefore reviewed literature on this topic as I expected to bring neuroscience into my research in some form and wished to be mindful in my use of it.

Bowman et al. (2013) say that neuroscience has propagated lots of applications for several behavioural professions including coaching. Grant (2015) reminds us however that coaches have been *coaching the brain* well before neuroscience became mainstream. Grant (2015) also questions what neuroscience has uncovered within coaching that was not already common knowledge. Overall, he argues against neuroscience as the answer to *everything* coaching. Bowman et al. (2013) and Riddell (2019) counter this by arguing that coaches work with coachees on personal change and therefore it is reasonable to assume that some knowledge of neuroscience is beneficial. Riddell (2019) goes so far as to suggest that it should be an area of expert knowledge for a coach. O’Connor and Lages (2019) believe that coaches who do not gain some neuroscience understanding will eventually be disadvantaged.

Neuroscience is a young field of research and still in rapid expansion (Bowman et al., 2013; Riddell, 2019). It covers a diversity of disciplines (Riddell, 2019) as illustrated by online journal ‘Frontiers in Neuroscience’ (Figure 28).

Frontiers in Neuroscience is composed of the following Specialty Sections:		
Auditory Cognitive Neuroscience	Autonomic Neuroscience	Brain Imaging Methods
Decision Neuroscience	Neural Technology	Neurodegeneration
Neuroendocrine Science	Neuroenergetics, Nutrition and Brain Health	
Neurogenesis	Neurogenomics	Neuromorphic Engineering
Neuropharmacology	<u>Neuroprosthetics</u>	Perception Science
Sleep and Circadian Rhythms	Systems Biology	

Figure 28: Frontiers in Neuroscience online journal sections (Frontiers Media S.A., n.d.)

Therefore, Page (2011) asks what a coach could expect to understand from such a bewildering array of new findings and what might be useful to them. Grant (2015) comments that for non-neuroscientists it is difficult to grasp what is useful and valid from neuroscience research. However, Riddell (2019) demonstrates how a coach could use a neuroscience-based explanation with a coachee to provide a different perspective on their behaviour. This gives an explanation at a neural rather than a behavioural level and may improve engagement with some coachees (Cozolino, 2014; Riddell, 2019). Bowman et al. (2013, p. 103) agree that it can help both coaches and coachees to “think about thinking”. This view was endorsed by a UK University’s Director of Neuroscience (2019) when talking about his undergraduates. He stated that they attended lectures about the brain to raise awareness of brain health during their studies and how they could maintain it.

Bowman et al. (2013) suggest that neuroscience helps inform coaches on their choice of interventions, although there are no specific neuroscience-developed coaching applications at the moment. Grant (2015) however feels that neuroscience is overused and given too much credence, whereas Riddell (2019) argues that it can add credibility to the coaching field. However, Page (2011), Bowman et al. (2013) and Riddell (2019) state that caution is required when using neuroscience for a number of reasons. Firstly, neuroscience interpretations are not always as clear cut and absolute as they appear. They often require more interpretation than may be thought and sometimes results are incorrect or biased. (Grant, 2015; Riddell, 2019; Rousselet et al., 2019). Books by Rose and Abi-Rached (2013), Hickok (2014) and Barrett (2017) discuss these issues in depth. Riddell (2019) lays out some useful aspects for deciding upon an article’s credibility. She

also advises coaches to read widely to ensure multiple perspectives are found and to keep up-to-date with neuroscience sources (Riddell, 2019). Page (2011) adds that it is difficult to know if results reproduce outside the laboratory and coaches should be cautious about implementing every new finding. This aspect was endorsed by two Professors of Neuroscience (2018a, 2018b) at leading UK universities, who participated in the original Delphi study pilot for this doctorate. They stated that findings in rodent research can be difficult to relate to human neurobiology, although much is often generalised to human behaviour.

Secondly, neuroscience findings are often overly elaborated and presented to grab attention (Bowman et al., 2013; Rousselet et al., 2019). Riddell (2019) states that coaches have a responsibility to seek out credible sources and not collude with such embellishments. However, Grant (2015) comments that it is difficult for non-neuroscientists to appreciate what is fact and what is myth (Soo-Hyun Im et al., 2018) especially as the original sources often use technical jargon (Page, 2011). Riddell (2019) and Grant (2015) agree that coaches have a responsibility to eradicate the use of neuromyths. However, Pasquinelli (2012) and the speakers at the British Neuroscience Association (2018) Christmas Symposium suggest they are prevalent and hard to overturn. The current trend (Grant, 2015) for using neuroscience within coaching literature can also lead to meaningless (Hawkins and Smith, 2018) and possibly misleading information (Carson and Tiers, 2014) as well as laboured links between neuroscience and coaching interventions (Brann, 2015; Dixit and Dixit, 2018).

Overall, Riddell (2019) advises reading publications by someone trained in neuroscience and to be wary of overstated claims by others. The books by Cozolino (2017) and O'Connor and Lages (2019) versus Carson and Tiers (2014) illustrate her point. The first two are highly referenced whereas the latter has no referencing even though it makes some strong neuroscience claims. For example, "The latest revelations from neuroscience can transform the work you do as a coach, hypnotist, or therapist" (Carson and Tiers, 2014, p. back cover).

2.9 Summary of the reviewed literature

The term 'reflexive hindering' was not used within the reviewed literature but coachee inner obstacles were acknowledged. In some cases, this was just part of the coaching

approach's flow of asking 'what could stop you from achieving your outcome?' and was not labelled as an inner obstacle. In other approaches the nature and origin of inner obstacles, often called defence mechanisms, forms the core coaching work. However, it was not clear as to whether these inner obstacles were, in actuality, impeding progress or just forming part of the coaching conversation. There was no substantial coaching literature that focused on coachee inner obstacles. Any references were spread throughout a variety of texts which were primarily written to explain coaching approaches and the use of methods. Descriptions of inner obstacles predominantly used the conceptual cognitive model (Section 2.4.3, Figure 10). Neuroscience-based explanations were sparse and typically high-level statements about the brain.

Coaching models and models of the inner workings of the mind were conceptual, discursive and metaphorical. However, two information processing theory models underpinned by neuroscience research provided acknowledgement of and useful insights into certain characteristics of reflexive hindering. Where neuroscience-based models are used by coaches they are often based on the triune brain and limbic system, both considered by some neuroscientists to be simplistic and outdated. Predominantly these models portray various parts of the brain as battling each other, where one part is positively positioned as desirable and the other is portrayed negatively and as undesirable. Some models, such as Schwartz, Thomson and Kleiner's (2016) 'High road, Low road', align closer to current neuroscience thinking and provide a more explanatory dialogue. However, its use within the wider coaching field was unknown.

There was a concern within the literature about crossing the therapy-coaching boundary when exploring inner obstacles too deeply. However, it was observed that Ontological, Somatic and Psychodynamic coaching approaches undertake personal history work. Furthermore, it was asserted that neuroscience can explain seemingly contradictory behaviours and gives insight without being therapy.

Resistance or an uncomfortable response was often seen as something to be avoided or a signal that the coaching has pushed the coachee too far. The general advice was to pull back and progress within the limits of the coachee. In approaches that took these reactions in their stride, the suggestion was to focus on enhancing the trusting relationship and to allow progress to emerge at its own pace. Some conversations around rational and irrational beliefs were pejorative and some approaches sought to

normalise them rather than judge them. Understanding these responses neurobiologically to any depth was not apparent, other than the use of the limbic system's amygdala hijack.

There is a precedent in TA and Psychodynamic coaching for information sharing with the coachee and educating them on various topics that are deemed to enhance the coaching process. There was also advocacy within the reviewed coaching and personal change literature that it is valuable to understand how the mind/ brain works. However, neuroscience-based information for coaches and the use of explanatory conversations on inner obstacles and phenomena suggestive of reflexive hindering were not apparent. Therapy clients similar to reflexive-hindering coachees were acknowledged and Compassion Focused Therapy (CFT) was evolved specifically for them. CFT's two key components are understanding the brain's idiosyncrasies and use of compassion. Kegan (1992) and Gilbert (2013, 2014) both maintain that a subject to object shift is required in order to critically reflect upon current reflexive responses. Gilbert (2013, 2014) believes this is achieved through brain education.

Some coaching approaches do not wish to dwell on problems per se. But neuroscience-informed explanations may be viewed as insightful rather than problem-focussed. It could also give psychodynamic coaching an alternative explanation beyond its Freudian background, especially as this work is under increasing critical scrutiny (Crews, 2017).

There was advocacy for neuroscience adding credibility to coaching and that its use may lead to some coachees engaging better with other coaching interventions. However, using neuroscience within coaching comes with strong concerns about its misrepresentation and misuse. Thus, coaches are advised to read widely, find the source material and maintain an up-to-date understanding.

The literature review demonstrates that coachees displaying responses akin to reflexive hindering exist although up until this point they have not been specifically identified as reflexive-hindering coachees. It also suggests that a neuroscience-informed approach might enable reflexive-hindering coachees to make a subject to object shift and be conducive to enhancing the progress they are able to make during coaching. Also, there is advocacy that it is valuable for coaches to understand something about the brain and a precedent for educating coachees in beneficial topics.

2.10 Reflexive hindering outline updated

The nature and scope of this doctorate has been significantly shaped by the literature review and steeping myself in neuroscience. My understanding of reflexive hindering has evolved and enabled a richer definition and outline of it.

2.10.1 Updated reflexive hindering definition and outline

Coaching context

Motivated and unable coachees: Kegan and Lahey (2009), Gilbert (2013) and Shabi (2019) observe that coachees can be outwardly engaged and inwardly impeded. This inaction, reduced motivation to take actions or avoidance of actions that could be helpful, is not conscious. Shabi (2019) advises that a coach should be tolerant of such coachees as they are seldomly doing this purposefully. It does however result in a state in which coachees seem, if not paralysed, unable to act in a manner that is directed towards achieving the coaching goals (examples given in Figure 1, section 1.4.1). I have called this phenomenon ‘reflexive hindering’.

Deep-seated change: Hawkins and Smith (2006) discuss the theory of first and second order change. First order change is described as change that does not affect a coachee’s core assumptions. This could be said to work within the bounds of *who we think we are*, including natural extensions or developments of that. Second order change however happens when the coachee’s major assumptions are challenged.

Horizontal development (Grant and Cavanagh, 2018) is where the coachee’s view of the world is not challenged and is linked to first order change. It seeks to work with expanding the coachee’s capability within *who they are* and feel they could naturally extend to. Vertical development (Grant and Cavanagh, 2018) is described as a change in the way a person views the world and seeks change at the deeper level of core beliefs and *who you are*.

Kegan and Lahey (2009) therefore suggest that second order change requires vertical development on behalf of the coachee and that this may be strongly resisted by them, knowingly or otherwise. As Hawkins and Smith (2006, p. 10) observe, “[w]hen the changes you are making start to push you well outside your comfort zone there are physical responses brought into play, just like the central heating thermostat, to stop you carrying on”. Whilst being an unsophisticated analogy, it conveys the overall sense of

reflexive hindering and that it is perhaps an instinctive response to second order change.

Neurobiological context

Our formative years: Coachees are often unaware of how accepting they are of their interpretation of the world, ways of being and accepted wisdom, and how this affects their actions. Shabi (2015) eloquently states the situation:

“As humans, we usually take our interpretations and ways of being for granted. For example, if an individual sees the world as dangerous, he is likely to be risk averse and say no to opportunities; similarly if someone sees life as an adventure, she is more likely to say yes to opportunities and to take risks. Our ways of seeing, and of interpreting, the world will have been shaped by the narratives in which we have been immersed. Most of the time, these narratives are transparent to us: they are not consciously seen; we have grown up in discourses that have shaped us all our lives, even before we were aware of ourselves or of the world. Therefore, we don’t say, for example, “I have learned to see the world as dangerous, and that makes me risk averse”; instead we might say, “the world is dangerous, and I have to be careful.” In other words, *it appears obvious to us* that the world is dangerous and that we have to be careful, rather than something to investigate further.”

(Shabi, 2015, pp. 2-3)

The aspects of the brain responsible for such perceptions and responses are constructed during early formative years when the individual is developing and learning how to survive in the world. These emerge as the way of navigating life in order to adapt, survive and thrive. In later life these navigation methods are responsible for embracing change when the adaptation and its consequences are perceived appropriate. However, when the adaptation is perceived, consciously or nonconsciously, beyond this, a deep-seated reaction results which impedes progress towards the change required. (Duff and Kinderman, 2006; Brewin et al., 2010; LeDoux, 2016; Schore, 2016; Cozolino, 2017)

Neurobiological response: Adaptive responses for self-preservation are strongly learned and thus have robust and quick-to-act neurobiological patterns, which tend towards the stance of *better safe than sorry* (LeDoux, 2002; Duff and Kinderman, 2006; Brewin et al., 2010; Gilbert, 2013). They are also strongly and persistently *felt* and *realised* by the person thus ensuring action is taken to remove themselves from the threat or to avoid getting closer to it (Gilbert, 2013). If there is a physical response it may be experienced as anxiety, nervousness, fear or anger. The response is intended to

curb or stop actions and the emotion heightens this need. The coach may interpret this as conscious resistance by the coachee, although the brain is purely operating given its current neurobiological patterns and inputs which are themselves partly the result of the individual's unique life experience. (Duff and Kinderman, 2006; Gilbert, 2013)

Autonomic nervous system: Porges' (2007, 2011, 2017) Polyvagal Theory covers the autonomic nervous system's three responses to situations and their associated threat level. The responses are social engagement (safe), mobilisation (fight/ flight) and immobilisation (freeze, feign death, behavioural shutdown). The level of risk perceived in the environment is nonconscious and the responses are reflexive and involuntary. When perceived safe, social engagement enables interaction with others and the ability to think fully. However, if the situation is perceived as more threatening by the brain then the sympathetic nervous system is engaged to prepare to either fight or flee. With this come the effects of a drop in social engagement, biological changes to aid fight or flight and an increased perception of threat. If, however, the situation is perceived as inescapable and a threat to actual survival, the brain triggers the third response which is immobilisation. Often a person may become very withdrawn, more detached from the conversation or shuts down in various ways. These aspects are likely to play a role in reflexive hindering, especially as the reflexive hindering intensifies.

How reflexive hindering manifests during coaching

Constraining various conversations and actions: Coaching deems that coachees are fully functioning and capable people (Cox et al. 2018; Palmer and Whybrow, 2019). It also acknowledges that coachee inner obstacles create responses that vary in intensity and effect (Palmer and Whybrow, 2019). Reflexive hindering therefore sits within this context although it is positioned neurobiologically. However, the way it manifests in a coaching programme varies: extensively across a programme; only whilst discussing a certain coaching goal; during particular coaching conversations or whilst attempting actions outside of the coaching session.

It evolves as a growing cautiousness towards discussing possibilities and developing options for action, which seem increasingly implausible (examples given in Figure 1, section 1.4.1). Reflexive hindering progressively hampers the coachee's ability to take meaningful actions as it intensifies, thus hindering progress towards their desired coaching objectives. The responses become their *reality* and as they intensify the

espoused actions seem less conceivable. Eventually it can constrain their ability to adapt further, although the coachee is probably unaware of its origin and true effects.

Figure 29 shows a schematic depicting the potential range and impact of reflexive hindering upon a coaching programme.

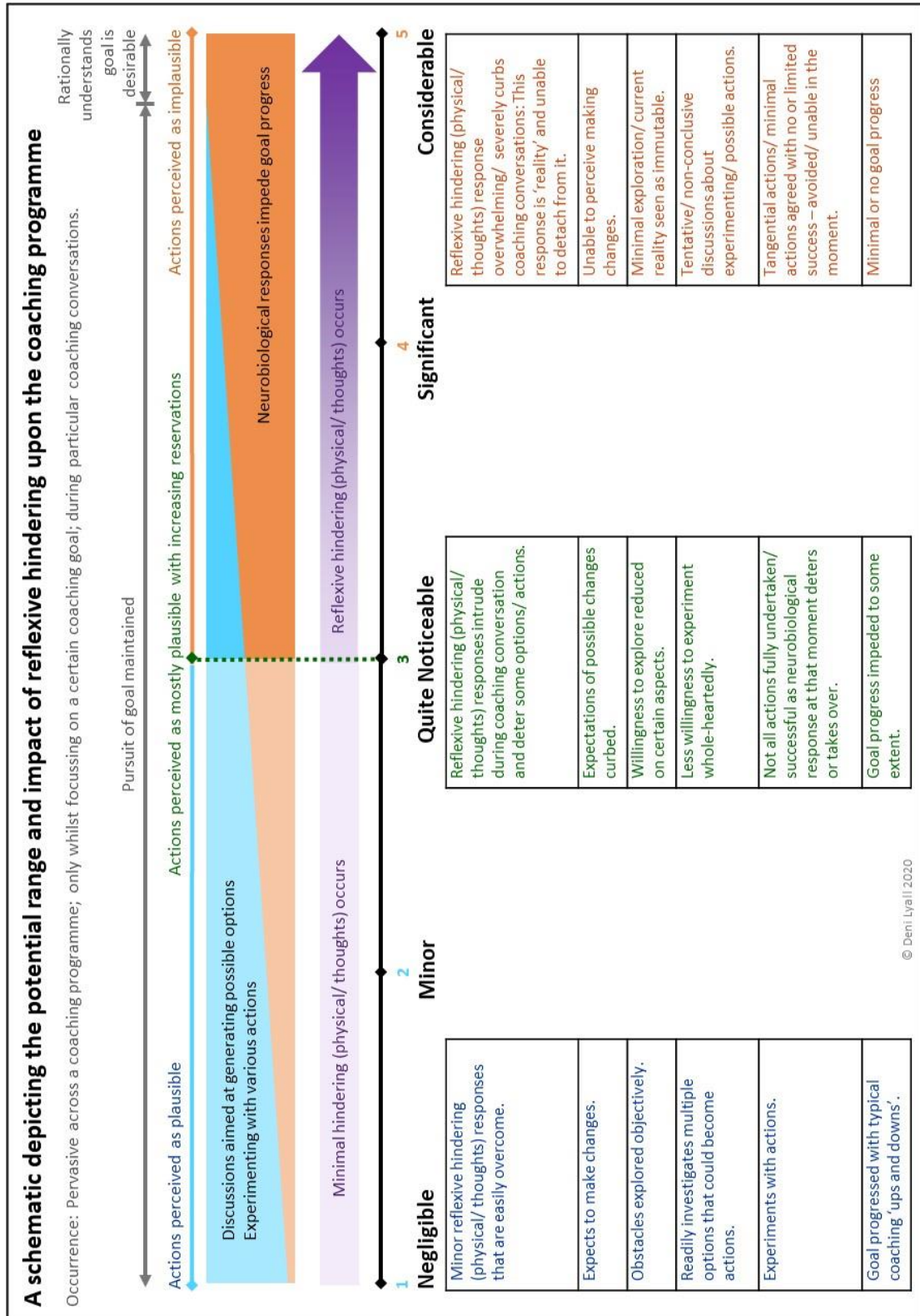


Figure 29: A schematic for subjectively assessing the extent of reflexive hindering and its possible impact

This schematic has been devised from the researcher's observations for illustrative purposes. It will be used by participants to subjectively describe how much reflexive hindering they perceive is occurring in order to determine if they have an appropriate coaching assignment for the research.

Unable to fully detach from the response: Thus, the deep-seated responses are *real* and *pertinent* for the coachee. The situation *is* threatening although they may struggle to articulate why. Kegan (1992) proposes that they are fused with their experience at that moment, unable to detach and become objective which makes investigation, reflection and action more difficult. Kegan and Lahey (2002), Duff and Kinderman (2006) and Gilbert (2013) advocate that this inability to be objective hinders individuals from taking meaningful actions to progress their desired outcomes.

Coachees can usually logically comprehend that they are hampered by the response they are experiencing once it is brought into their awareness. They also know that in order to progress their coaching outcomes they need to be able to do something different. However, some coachees display bafflement as to the reason they cannot progress even though they rationally understand their predicament. Other coachees might be unaware of how they are impeding their own progress as their actions appear congruent to them. Some might even state that all the options thus far are implausible, although they struggle to articulate why.

These situations present a dilemma to the coach in formulating a way forward. Gilbert (2014) however advocates that understanding about the idiosyncrasies of the brain and how it tends to operate and why, enables individuals to take a more detached perspective.

2.10.2 Using an infographic for psycho/neuro-education

Psychoeducation is where relevant information is systematically shared with a patient and is common practice in clinical settings (Miller, 2016). It endeavours to inform the patient about their symptoms, treatment options and to improve self-motivation for adhering to treatment (Donker et al., 2009; Ekhtiari et al., 2017). Figure 30 gives an example of an infographic used for psychoeducation.

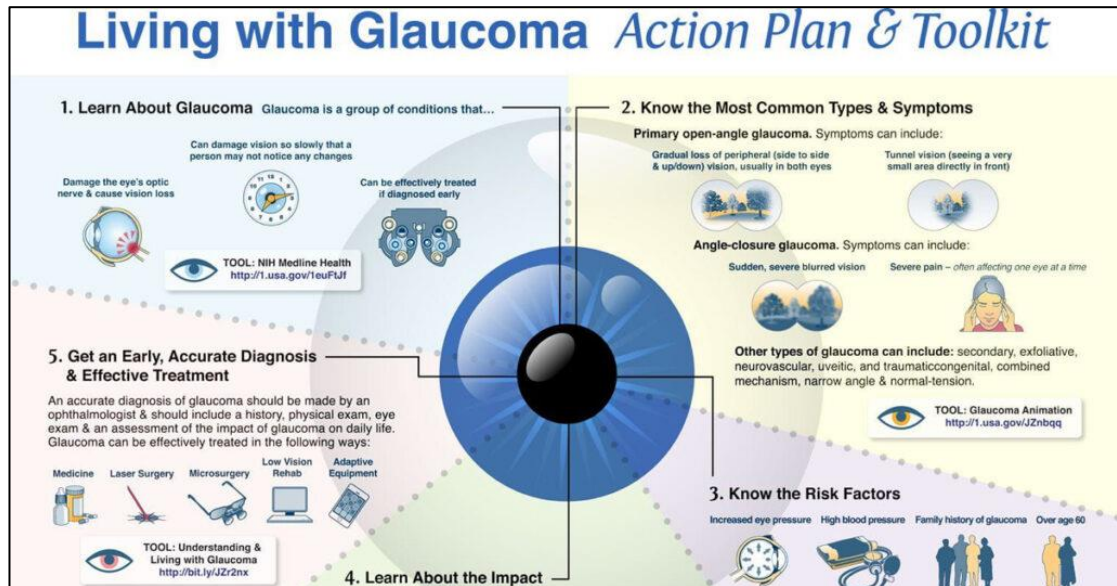


Figure 30: Example of a psychoeducation infographic (Jones, 2014)

The human body systems (e.g. respiratory system in Figure 31) can also be presented as psychoeducation infographics. Both examples attempt to bridge the gap between being scientific enough whilst not alienating people with technical language.

Human Body: Respiratory System

The respiratory system is responsible for gas exchange—the inhalation of oxygen (O_2) and the exhalation of carbon dioxide (CO_2). The lungs, conducting airways, and the diaphragm are key structures of the system.

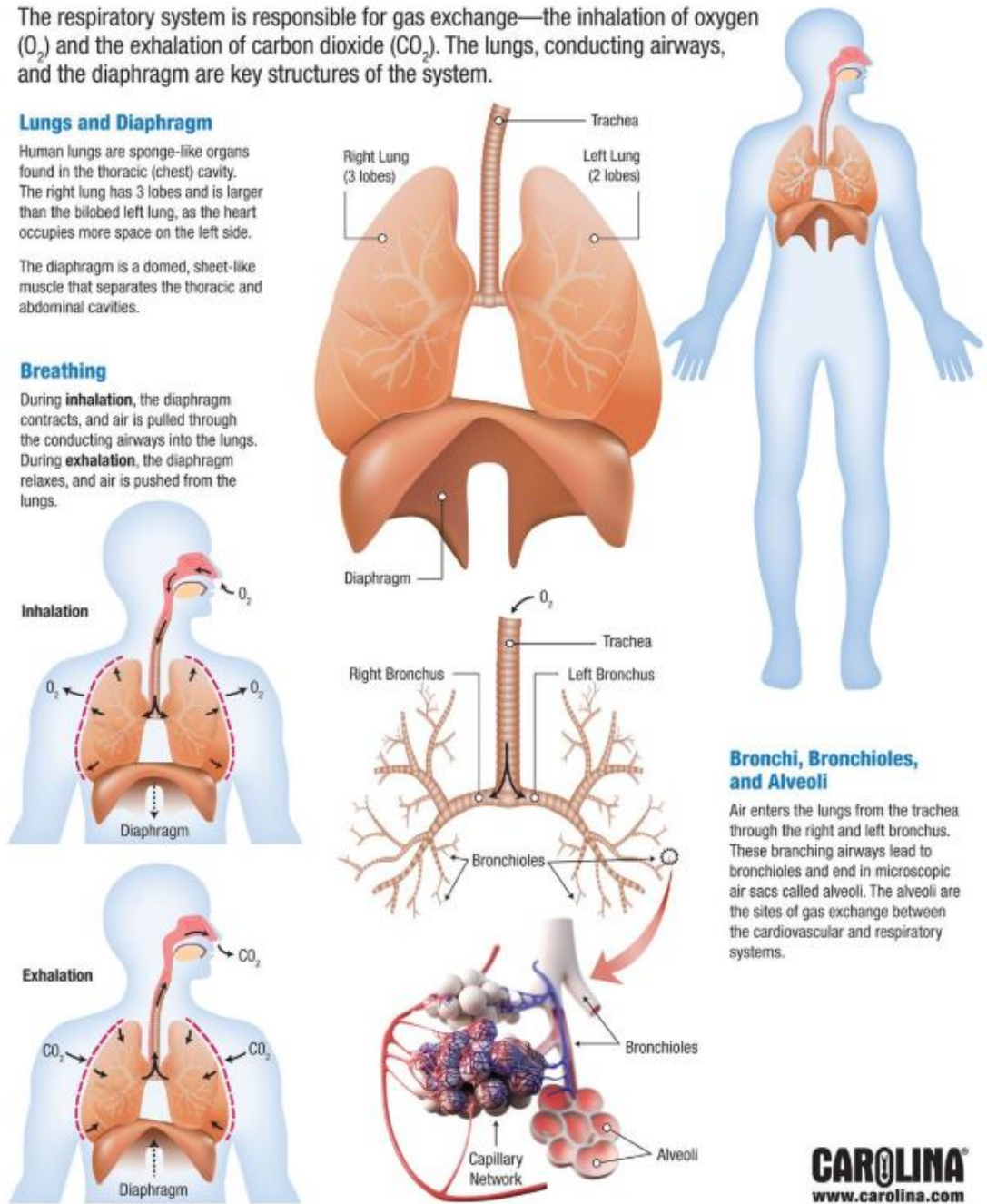
Lungs and Diaphragm

Human lungs are sponge-like organs found in the thoracic (chest) cavity. The right lung has 3 lobes and is larger than the bilobed left lung, as the heart occupies more space on the left side.

The diaphragm is a domed, sheet-like muscle that separates the thoracic and abdominal cavities.

Breathing

During **inhalation**, the diaphragm contracts, and air is pulled through the conducting airways into the lungs. During **exhalation**, the diaphragm relaxes, and air is pushed from the lungs.



Bronchi, Bronchioles, and Alveoli

Air enters the lungs from the trachea through the right and left bronchus. These branching airways lead to bronchioles and end in microscopic air sacs called alveoli. The alveoli are the sites of gas exchange between the cardiovascular and respiratory systems.

CAROLINA
www.carolina.com

Figure 31: Respiratory Infographic example (Carolina Biological Supply Company, n.d.)

Donker et al. (2009) and Harvey (2018) state that there is evidence that psychoeducation enhances the outcomes of treatment, such as prolonging the period before relapse and improved self-helping behaviours. This is especially evident when

used in conjunction with other clinical interventions, such as CBT. They add that it is cost effective and can be undertaken by non-professionals.

There is also a precedent for neuroeducation (Miller, 2016) and neuroscience-informed psychoeducation (Ekhtiari et al., 2017). In these, simplified neuroscience information is shared with the client. The shared information raises patients' awareness on the brain functions underlying their symptoms, how change is neurobiologically possible and the consequences of their current behaviour (Miller, 2016; Ekhtiari et al., 2017). It also enables the professional to discuss habituated neural responses and how the patient might modify these. Miller (2016, pp. 105-106) states that it helps shift patients "from being passive observers to being active participants in their mental lives" – a subject to object shift. Ekhtiari et al (2017) admit however that it can be difficult to achieve as neuroscience is a complex field.

Miller (2016) and Ekhtiari et al. (2017) discuss the importance of how and when information is shared. They advocate it should be visual, engaging and paced with the patient's interest. However, Miller (2016) notes that patients are keen and interested to learn about neuroscience as it gives them a different perspective on their condition. Ekhtiari et al. (2017) believe that it is particularly useful for patients who lack awareness of their condition and its consequences. Miller (2016) and Ekhtiari et al. (2017) advocate that more research is required into the use of neuroeducation, including effective ways of conducting it. Ekhtiari et al. (2017) add that research benefits from the involvement of real-world practitioners for developing material and feedback on its ease of use and effectiveness.

Currently there appears to be no applicable neuroscience-based coaching artefact for raising awareness of reflexive hindering, although the elements for one seem to be present within the neuroscience literature. Therefore, an infographic was designed to raise insight into reflexive hindering, with the aim of creating a subject to object shift for those coachees. This should then enable them to detach and critically reflect upon the reflexive hindering, thus opening up more possibilities for change. In turn, that should improve their ability to progress towards their coaching outcomes.

2.10.3 The infographic

There were three main themes from my experience and the literature review that seemed pertinent to coachees who reflexively hinder their coaching progress. The themes form the three main sections of the infographic (Figure 32) and are:

1. Coaching seeks to explore the situation and what helps and hinders coachees. When reflexive hindering is occurring, it might be beneficial to discuss certain aspects of brain function and its limitations as well. Then coachees have an appreciation of how they may nonconsciously hinder themselves and thus make more informed choices.
2. The brain-related information might create a firmer basis for believing that change is possible - that these aspects of who they are, are not as absolute as they appear. It could be helpful for coachees to appreciate that a seemingly innate response is probably a learned response at a time when they were not fully aware of it happening. It could also be helpful to appreciate the short and long-term effects that these responses can typically create.
3. It might be beneficial for these coachees to think about what it takes to achieve some of these changes on a practical level (to modify neural pathways through deliberate adaptation) and how to mitigate some of the short-term seemingly adverse effects that this could trigger.

Therefore, the infographic and its narrative are designed to address the three points above. Their content was informed by,

- My coaching experience of reflexive hindering in action.
- My understanding of brain function from steeping myself in neuroscience.
- An enhanced understanding of reflexive hindering and related aspects from the literature review.
- My initial narrative attempts at improving a coachee's understanding of reflexive hindering.
- Presentations to coaching and talent development professionals focusing on pertinent brain facts and the implications of those to their discipline.

Overall, the infographic seeks to generate an explanatory discussion about certain aspects of the brain aimed at helping coachees understand in a rational, non-judgemental way (that does not feel like therapy) how they may hinder themselves. It is designed to raise awareness and explain a coachee's seemingly contradictory thoughts and behaviours. Overall, it seeks to give them a different perspective – a subject to object shift - and the ability to explore different actions due to this new awareness. The infographic is fully referenced and these are given in Appendix 5.

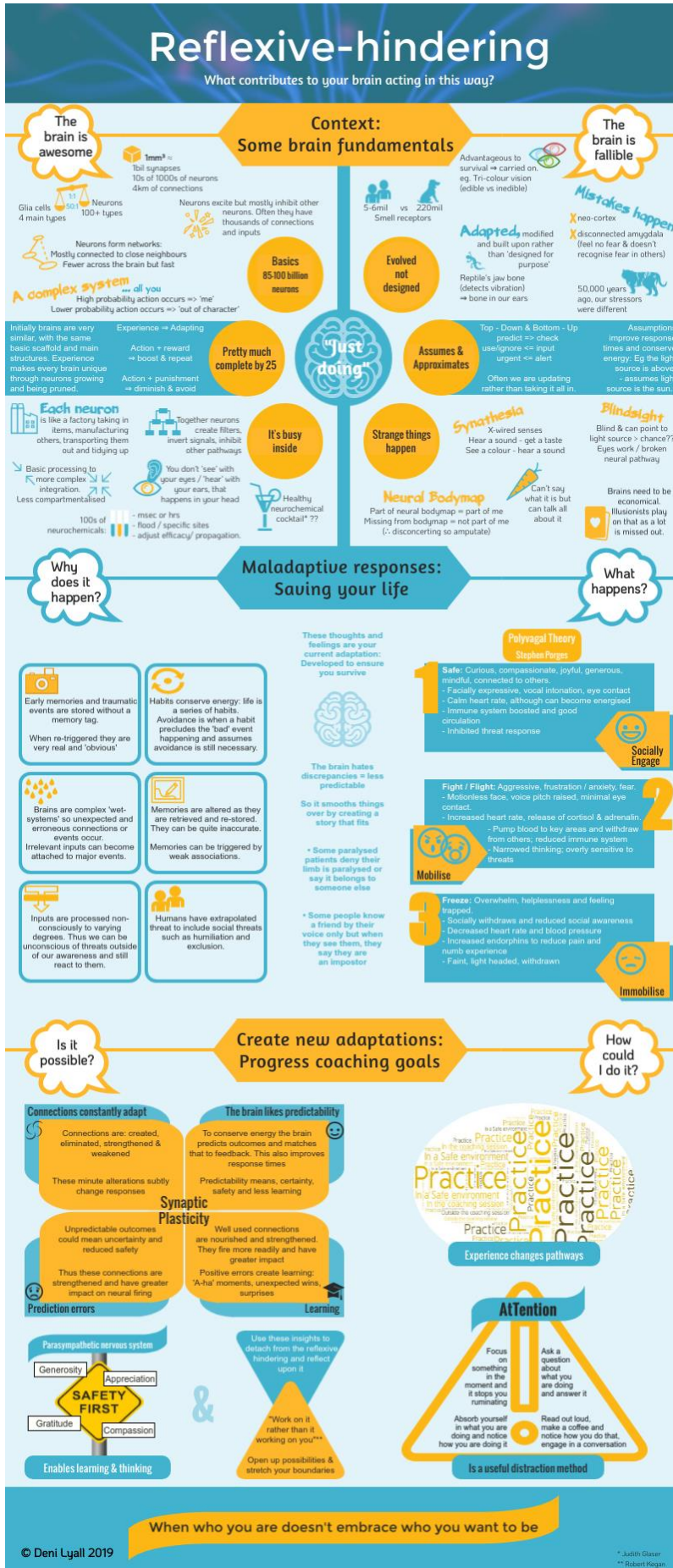


Figure 32: The Reflexive Hindering Infographic

Each of the three sections have been designed to focus on a main theme. The main theme of section one is that the human brain is awesome and limited. It is aimed at undermining the misconception that the brain is perfect and is designed perfectly. The section contains various items illustrating certain brain facts and concepts to demonstrate its two subthemes.

Section two's theme is that maladaptive³ responses were developed at some point to ensure that you survived and thrived, and that this is still their underlying intention. It is designed to help coachees understand some seemingly contradictory behaviours, to realise how influential the brain is and how related neurochemical changes affect them. It also aims to raise a coachee's awareness that they can, and need to, take more control rather than it just controlling them.

Finally, section three's theme is about 'realistic hope'. It highlights that change is possible although there is a reality as to how much effort it takes and what is possible. It also suggests general ways that a coachee might mitigate the increased reflexive hindering that is likely to occur during the initial stages of change.

2.11 Aims, objectives and outcomes

The overall aim of this doctorate is to:

explore reflexive hindering in coaching and the effect that an associated neuroscience-based coaching conversation, using a purpose-developed infographic, has on coaching efficacy when reflexive hindering impedes progress

Therefore, the research objectives are to establish:

1. A deeper understanding of the concept of reflexive hindering within coaching.
2. An understanding of the coach's experience of using the neuroscience-based infographic with a coachee where the reflexive hindering is impeding progress.
3. The value derived, if any, from using the neuroscience-based infographic with respect to progressing the coaching outcomes when reflexive hindering occurs.

³ maladaptive: not adjusting adequately or appropriately to the environment or situation. ('Maladaptive', 2019)

The concept of reflexive hindering initially arose from my own coaching experience. Its definition and outline have been greatly enhanced by steeping myself in neuroscience and by the literature review. Consequently, the first objective has primarily been addressed by these. The second and third objectives form the research project itself, which is detailed in Chapters 3, 4 and 5. In essence the research project is to investigate the efficacy of the infographic.

The intended outcomes at the end of the doctorate are envisaged as:

- Document(s) outlining reflexive hindering within coaching.
- Coaching practitioner material(s) for enabling critical reflection of the reflexive hindering that hampers the progress of the coaching goals.
- Recommendations of beneficial coaching practices for working with reflexive hindering.
- Material(s) for raising awareness of reflexive hindering within the coaching community.
- Recommendations for further research directions.

3 Research project design, from ontology to methods and project activities

3.1 Introduction

Researchers often start with a research topic and proposed research methods, such as interviews or questionnaires. However, Patton (2002) and Gray (2014) propose that research credibility and value is enhanced by situating the research process in a wider context. Robson (2011) also asserts that without scientific design consideration data can be collected only to discover afterwards that the findings are meaningless or inappropriate to the topic being advanced. Therefore, in this chapter I will consider my research project context, process and design, with section 3.2 discussing the research process itself.

Crotty (1998) advocates considering two overarching questions. Firstly, which methodology and methods to use and, secondly, how to justify their use. The justification comes from the topics of ontology, epistemology and having a theoretical perspective. These ensure that the researcher contemplates (Crotty, 1998):

- What is the purpose of the method?
- What will be the nature of the knowledge generated and how will others view that knowledge?

These considerations put the research into perspective, sharpen and clarify its focus, and hone its methods (Robson, 2011). They surface underlying assumptions and their influence on the research (Saunders, Lewis and Thornhill, 2019). Therefore, ontology, epistemology and the question of a theoretical perspective are discussed in sections 3.3 to 3.6 as they create an overarching guiding framework (Patton, 2002) for my research.

Crotty's first question is addressed in sections 3.7 to 3.9 through outlining my choice of methodology and proposed methods. The latter being greatly enhanced by the previous considerations. For example, it becomes clearer through reading widely that terms like 'interview' are all-encompassing and have nuances that require further exploration (Patton, 2002).

Section 3.10 outlines the ethical principles I adopted as these are crucial for shaping and bounding the realities of data collection (Patton, 2002; Creswell, 2009; Robson, 2011; Gray 2014). This chapter concludes with details of the actual project activity undertaken.

3.2 The research process

Crotty (1998) comments that within the literature there are a bewildering array of philosophies, paradigms and methodologies often laid out in a non-orderly fashion with unclear links to theoretical elements and inconsistent use of terminology. This was unexpected but confirmed by Saunders, Lewis and Thornhill (2019). However, the study of such topics is invaluable for justifying the choice of methods and underlining the nature of the knowledge generated. This forces a re-examination of the researcher's underlying assumptions on these topics, the research rationale and its intended aims and outcomes.

Overall, the research processes of Crotty (1998) and Saunders, Lewis and Thornhill (2019) stood out for me as two main ways of navigating this topic.

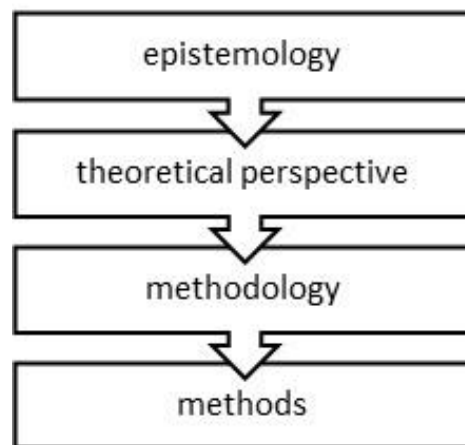


Figure 33: Crotty's Four Elements of the Research Process. (Reproduced from Crotty, 1998, p. 4)

Crotty's (1998) 'four elements' approach (Figure 33) is practical and articulate with a clear line of sight between each element.

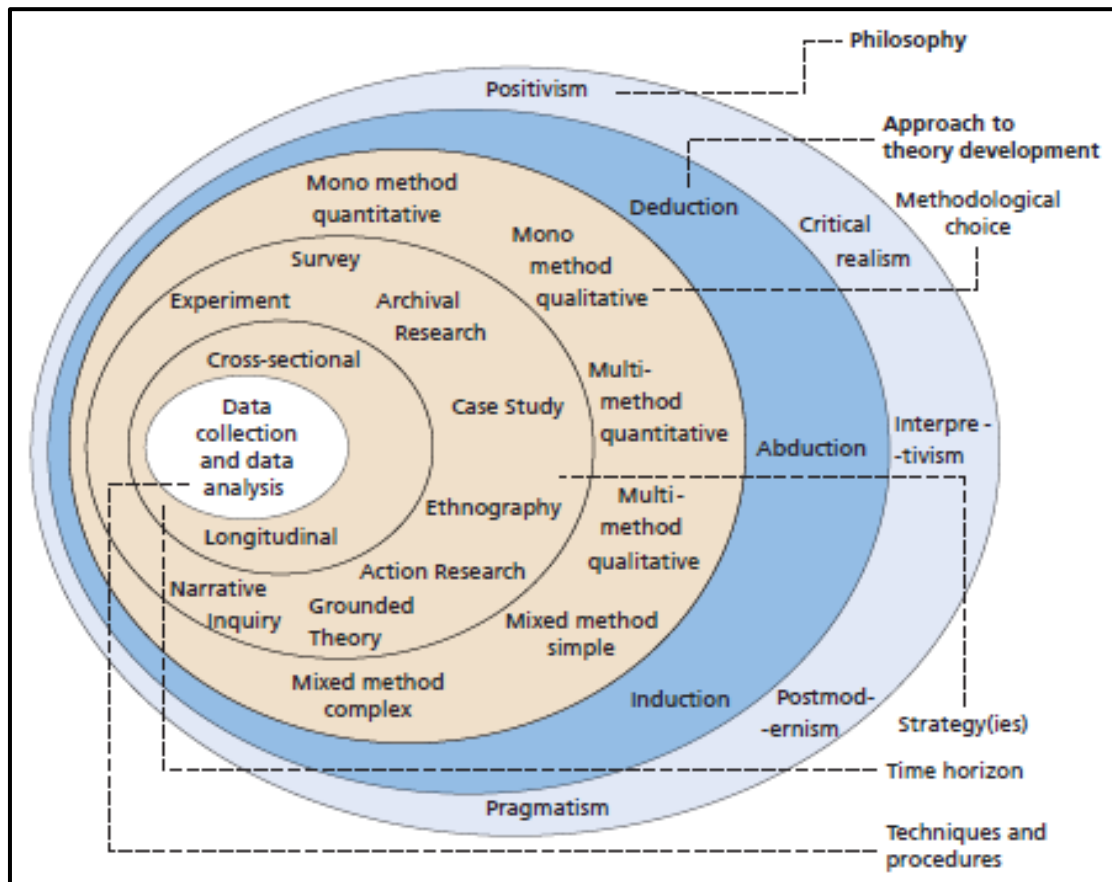


Figure 34: Saunders, Lewis and Thornhill's 'Research onion' (Saunders, Lewis and Thornhill, 2019, p. 130)

Saunders, Lewis and Thornhill's (2019) six-layered 'research onion' (Figure 34) can be used to create a thorough narrative from philosophies to methods. However, some of the layers seemed unnecessary and could be merged, for example, 'Time horizon' into 'Strategy(ies)'.

Other texts (Patton, 2002; Creswell, 2009; Robson, 2011) are unclear as to how the individual terms are linked and what is advocated as a research process. Initially, this apparent lack of coherency was frustrating, although from further reading, I appreciated that the nature of these topics creates this multitude of perspectives. Overall Crotty's (1998) approach to the research process is the most powerful in my view. It is thought-provoking, meaningful and to the point, whereas others tend to diverge into alternative approaches and perspectives.

Therefore, this research follows Crotty's (1998) structure as laid out in Figure 35, with one modification from Kawulich and Chilisa (2012). They take a similar approach to

Crotty (1998) albeit with slightly different terminology. They also separate Methods into Data Collection and Data Analysis which seems worth denoting.

- **Epistemology:** Focuses on the nature and characteristics of the knowledge generated by the research; its adequacy and how others might view it.
- **Theoretical Perspective:** Provides a context for the process; grounding its logic and criteria; stating the assumptions and views of the world that researchers bring to their research.
- **Methodology:** Strategy or plan of action; an account of the rationale it provides for the choice of methods and the particular ways in which the methods are used.
- **Methods:** The concrete techniques or procedures intended for -
 - Data Collection
 - Data Analysis

Figure 35: The research process for this research (Drawn from Crotty (1998: p. 2-9) and Kawulich and Chilisa (2012))

My underlying assumptions towards the research project were reassessed and challenged by needing to understand the research process more thoroughly. It also started to surface and question some of my underlying assumptions about the nature of reality and what I deem as legitimate knowledge. Thus, the following sections on ontology and epistemology were thought-provoking for me.

3.3 Ontology

Crotty (1998) believes that ontology and epistemology, although often treated separately, arise and merge together, with writers often struggling to keep the two topics differentiated. Crotty (1998, p. 10) refers to ontology as “the study of being” or the nature of reality itself (Gray, 2014). Whereas he views epistemology as being about the nature of our knowledge of reality. However, Saunders, Lewis and Thornhill’s (2019) discussion on ontology is a good example of ‘another writer’s struggle’. They use the example of how some people view the UK’s European Union membership as overly bureaucratic whilst others view it as providing legal protection, to illustrate ontology.

This seems to be less about the nature of reality and more about people's perceptions - a topic that Crotty (1998) reserves for his discussion on theoretical perspective.

However, Saunders, Lewis and Thornhill (2019) do not have an equivalent theoretical perspective layer and perhaps do not perceive the need for it given their ontological stance.

For these reasons Crotty (1998) does not include ontology as a fifth element in his model (Figure 33) and initially this influenced my thinking. However, Gray's (2014) reference to it was striking. He chose to discuss ontology thoroughly despite basing his epistemology and ontology section on Crotty's (1998) four elements. This highlighted the work of Chia (2002) and his discussion on the philosophical underpinnings of research design, which are coherent and insightful.

Chia (2002) contends that our ontological perspective is part of our culture and therefore is adopted without us even realising it is happening. He states that this has many implications as it fundamentally shapes our interpretation of the world. One consequence is that it influences which knowledge is deemed legitimate and significant, as well as what is paid attention to. It therefore affects how we create knowledge and the viability of that knowledge.

Chia (2002) outlines the two dominant metaphysical traditions of ontology: Firstly, the Heraclitean ontology of 'becoming' that favours a fluid and evolving world. Secondly, the Parmenidean ontology of 'being' that favours a stable and everlasting world. According to Chia (2002) the Parmenidean mindset prevails in the West. Consequently, "form, order, individuality, identity and presence are privileged over formlessness, chaos, relationality, interpenetration and absence" (Chia, 2002, p. 5). This leads to a "representationalist epistemology" (Chia, 2002, p. 5) with the use of language and symbols being deemed as representing an accurate portrayal of the external world. Subsequently, two prevalent ways of knowledge creation developed, those of rationalism (knowledge derived from abstract principles, concepts, intuition and logical reasoning) and empiricism (knowledge derived from concrete experience and observation). Chia (2002) then advocates that it is the continuum or interplay between rationalism and empiricism that spawns the majority of theoretical perspectives. This recognises that knowledge can be derived by combining conceptual or logical reasoning and actual experience. This was reassuring as I was concerned that needing to choose

between one stance or the other would be inappropriate for this research, given the outline of reflexive hindering was derived from both rational and empirical knowledge. Thus, Gray (2014) states that the epistemological stances of objectivism and constructivism, and most theoretical perspectives, are based on a 'being' ontology. Only postmodernism, located in a truly subjectivist epistemology, is seen to be underpinned by a 'becoming' ontology (Chia, 2002). From this discussion, Crotty's (1998) decision on ontology can be appreciated.

Chia's (2002) paper was enlightening on these topics and highlighted their usefulness to my research. On reflection, I need to be cognisant of the claims of validity that I place upon the knowledge created by my research. Also, of the West's tendency to bring form and order through a 'being' ontology, as it creates a feeling of permanence or irrefutability. The neuroscience literature had already put similar doubts into my mind as interpreted experimental results, researcher-bias and economical influences can, and do, lead to questionable conclusions (Rose and Abi-Rached, 2013; Hickok, 2014).

This realisation has led me to appreciate and reflect upon just how much of what I consider to be sound fact is in reality subjective or a socially accepted construction. Also, to deliberate as to whether there is any ability to create a true and real account of the world and whose true and real account that would be. This will fundamentally affect the light in which I interpret my findings and share them with the wider coaching community.

3.4 Supporting examples for the choice of epistemology and theoretical perspective

I reflected upon my activities thus far in order to position the suitability of my chosen epistemological stance and theoretical perspective. Four aspects emerged that I feel warrant outlining at this point.

- My experience of reflexive hindering within my coaching practice: Co-constructing meaning; Object-Subject interplay. (Section 3.4.1)
- My definition and outline of reflexive hindering: Co-constructing knowledge; Driven by my values. (Section 3.4.2)

- Designing an infographic to raise awareness of reflexive hindering: Shaped by experience and knowledge; Focus on *what works* and what is *good enough*. (Section 3.4.3)
- Involvement of experienced executive coaches to beta test⁴ the infographic: Co-constructing knowledge and improving practice. (Section 3.4.4)

Based upon these, I will later contend that Social Constructionism (Crotty, 1998) forms a suitable epistemological stance and Pragmatism (Johnson and Onwuegbuzie, 2004) is a congruent theoretical perspective: both acknowledge that meaning-making often involves objective and subjective elements and that knowledge-creation is rarely just rational or empirical.

3.4.1 My experience of reflexive hindering within my coaching practice

A coachee already has many conscious preconceptions and nonconscious neurobiological adaptations that influence their perception of a situation. Thus, they are constructing their own personal interpretation of it, some of which may be unwarranted. From my experience this is illustrated in the many cases where the coachee wishes to do what others (who do not construct a meaning which triggers similar reflexive-hindering responses) may do ‘naturally’.

Thus, reflexive hindering acknowledges the multiple constructed realities of a situation and respects the coachee’s meaning-making of it. It also acknowledges that this construction has been influenced by our coaching conversation, the social interaction with others and the world, as well as more objective aspects such as the biological nature of human-beings.

3.4.2 My definition and outline of reflexive hindering

It is probable that my ontological position of ‘being’ will have influenced my desire to describe and categorise reflexive hindering. However, I feel comfortable with the belief that appropriately held concepts, models and frameworks are useful for navigating life (Chia, 2002). I personally caveat this usefulness by judging it on its practical rather than its theoretical value. Thus, I tend to preference knowledge that leads to changes in the

⁴ Beta test: “A trial of machinery, software, or other products, in the final stages of its development, carried out by a party unconnected with its development”. (‘beta test’, 2020)

effectiveness of the real world, i.e. for the purposes of this research within my coaching practice. (Chia, 2002).

Admittedly, reflexive hindering is a term and concept that I have evolved and formed from my interpretation of my coaching experience and the values that I hold. This has been deepened and expanded by a richer understanding gained from the literature review and conversations with colleagues. This helped shape my thinking from both practitioner and academic perspectives. Whilst its definition and outline are not truly objective, neither are they truly subjective. I have however purposefully sought to take a more explanatory position than a conceptual one. I believe this position will be helpful in aiding the coachee to become more objective about their response and to gain an insight into the construction it is rather than the absoluteness they appear to take it as (Patton, 2002).

3.4.3 The reflexive hindering infographic

The infographic is intended to be used by a coach in order to raise a coachee's awareness of reflexive hindering. I felt confident in designing it due to my extensive training experience and also due to,

- My experience of reflexive hindering both personally and through coaching reflexive-hindering coachees
- Steeping myself in neuroscience
- An enhanced understanding of reflexive hindering from the literature review
- My initial narrative attempts at improving a coachee's understanding of reflexive hindering
- Giving neuroscience-based presentations to other talent development practitioners

Hence, the information on the infographic is pulled from the fields of neuroscience and psychology, interpreted by myself, honed by the interaction with various audiences and put together in the way I feel suits the task I intend it for. I acknowledge that there will be shortcomings due to the lack of a diversity of inputs in its production, although I felt this was a suitable starting point within a reasonable timescale.

3.4.4 The method(s) proposed for the research project

One way to improve the infographic's efficacy is to have other experienced coaches beta test it. They will use it in ways I might not envisage and in a wider variety of coaching situations. Therefore, collectively we can co-construct the next iteration of the infographic or the reasons for discontinuing its use. Their experience and what they share with me will however be influenced by a several factors, such as:

- the interplay between themselves and the infographic
- their interpretation of what they feel is expected of them and their assumptions surrounding that
- the interplay between myself and them during the interview
- the beliefs and views that they, and I, bring to their participation and the subsequent discussion
- the coachee and their response to the infographic and how using it changes the nature of the session

Therefore, in the data collection interviews my focus is on understanding the coach's experience of using the infographic and the value they feel it did or did not add. It is this richness of experience that I am seeking and would not have created by myself. Whilst everyone's experiences and meaning-making will be treated equally, I will subsequently interpret the findings to improve the infographic's efficacy. Thus, through co-construction of knowledge with my participants I seek to effect a change in coaching reflexive-hindering coachees.

In summary, I feel these examples illustrate the kinds of knowledge and meaning-making that my research is situated in and will itself generate. They also illustrate the real-world and practitioner research that I am undertaking. In turn these underpin the suitability of my chosen epistemological stance and theoretical perspective, which are discussed in the following two sections.

3.5 Epistemology

Crotty (1998) advocates that epistemology provokes thought about the nature of the knowledge our research will generate, its characteristics and why others should consider it of value. Put succinctly, Gray (2014, p. 19) states that it enables us to decide “what kinds of knowledge are legitimate and adequate”. It informs not only the theoretical perspective but also the methodology and methods used. Leading from section 3.4, I will now outline my reasons for choosing Social Constructionism as my epistemological stance.

3.5.1 Social constructionism

Crotty (1998) presents the nature of knowledge and the construing of meaning, epistemologically, in the context of object and subject. Objectivism is where the meaning of an object is held within the object itself. The meaning of the object and thus reality is not attributed by the subject but stands separately. This therefore advocates an ability to understand the objective truth. Subjectivism on the other hand holds that all meaning about an object is imposed on it by the subject, that the object within and of itself holds no meaning. Therefore, multiple meanings and realities exist and the ‘truth’ of the meaning resides with the subject regardless of the object. Between these sits Constructionism which contends that meaning is made by the interaction between an object and a subject. That “truth, or meaning, comes into existence in and out of our engagement with the realities of our world. ... Meaning is not discovered, but constructed” (Crotty, 1998, pp. 8-9). Patton (2002) further reminds us that Constructionism is about constructing the meaning of reality not about constructing reality itself.

It is also worth noting that Constructionism (Crotty, 1998; Robson, 2011) and Constructivism (Creswell, 2009; Gray, 2014) are frequently used interchangeably (Patton, 2002) although some authors (Crotty, 1998; Robson 2011) distinguish between them. Constructivism is used by some when discussing “the meaning-making of the individual [untainted] mind” (Crotty, 1998, p. 58). Conversely Constructionism is used to emphasise “the hold our culture has on us [and that] it shapes the way in which we see things (even the way in which we feel things!) and gives us a quite definite view of the world” (Crotty, 1998, p. 58).

Social Constructionism contends that meaning is constructed as human beings interact with the world, with each other and with objects (Crotty, 1998). Crotty (1998), Patton (2002) and Creswell (2009) emphasise that this meaning is intrinsically shaped by cultural, historical and linguistic influences within which an individual is steeped before they are aware of it. I will therefore use the term 'Social Constructionism' to denote the construction of meaning or knowledge and that it is inherently socially influenced. This aligns with the nature and setting of reflexive hindering and the research being undertaken.

Crotty (1998), Patton (2002) and Creswell (2009) also advocate that although the meaning is constructed it does not infer that it is not real for the individual and experienced as such. For a constructionist, a slight is just as real as a tree. Overall, this leads to there being multiple realities for any situation or object. This resonates well with the nature of reflexive hindering as I have defined it, especially its feeling of *realness* and unquestionability born out of the coachee's interpretation of the situation.

Robson (2011) adds that given that meaning is constructed, it implies that there is no single or consistent knowledge of external reality. Therefore, knowledge changes over time and within different contexts as well as for different people. This supports my desire to be able to affect change in the coachee and reduce the effects of reflexive hindering on their ability to make progress during coaching.

The constructionist researcher's focus is on understanding participants' experiences and how others make sense and meaning in the world. Therefore, having a number of participants brings a richness and diversity of meanings to the fore. This is the essence of the research project for me. It gives my research the ability to improve the robustness and effectiveness of an explanatory approach to reflexive hindering within coaching. It is also the nature of coaching.

The researcher's values are acknowledged by Robson (2011) as shaping meaning, rather than asserting that the researcher should be able to be totally detached and objective – a view with which I very much align as my level of interaction with participants might make it difficult otherwise. Creswell (2009) and Robson (2011) also state that a researcher and the research participants are co-constructing knowledge together as they engage with each other. This is certainly my intention through the beta testing and subsequent interviews with participants.

The task of the researcher is to understand these multiple realities and to make sense of them in the given context. They must remember that no one of these constructions is more true or valid than another although some may be more useful than others in the given context. Thus, whilst not evaluating the experiences espoused, a researcher is able to consider the implications of their findings and can generate meaning from them (Patton, 2002; Creswell, 2009). This flexibility to take the findings and use them to make changes to the infographic and my coaching is important to me.

On a final note, 'researcher' could be exchanged for 'coach', in most cases, in the above discussion on Social Constructionism, as in essence a coach works in the world of co-construction with the coachee (Stelter, 2018). Thus, I believe Social Constructionism is a suitable epistemology to adopt given my reflections above and my supporting examples in section 3.4.

3.5.2 Implications for the research

There were four items of note from reading about Constructionism that I had not fully appreciated before. I therefore considered their implications more deeply for my own research. Firstly, Crotty (1998, p. 68) says that the researcher needs to be careful, as "[w]hat is said to be 'the way things are' is really just 'the sense we make of them'". I know that I have a tendency towards the former if I reflect on my own upbringing and education. In contrast to that I have been given feedback on my ability to respect and acknowledge the reality and experience of the coachee in an accepting way. However, in my quest to understand more about reflexive hindering within coaching, I am now reflecting on the fact that there is a sense of wanting to find out *the way it is*. This is unlikely to be possible given the above discussion and it is doubtful that the nature of my findings would support such an objectivist-orientated statement. Crotty (1998, p. 64) concludes by advocating that we should therefore "hold our understandings lightly and tentatively and far less dogmatically". That is a view I now appreciate.

Secondly, Patton (2002) discusses the effect that power has on what knowledge gets constructed. In the broader sense it is worth noting that in both neuroscience research (Rose and Abi-Rached, 2013) and in the practice of coaching (Cox, Bachkirova and Clutterbuck, 2014), genres and direction are often determined by the funding available, commercial viability and the preferences of society or those in influential positions at the time. Patton (2002, p. 98) advocates that "'truth' is a matter of consensus among

informed and sophisticated constructors, not of correspondence with objective reality”. However, the forming of ‘truth’ should not become the privilege of the few over the many. Thus, I need to remind myself that schools of thought are not as impartially absolute and authoritative as I had thought.

Thirdly, Patton (2002) mentions that due to the contextual and individual nature of experience, results are quite particular and may not be generalisable across contexts. Thus, I need to think about positioning my findings as insights and thought-provokers, with the intention of aiding another coach in deciding if and how to use the understanding of reflexive hindering and the infographic within their coaching practice. Therefore, the conclusions should be to inform rather than instruct, to illustrate rather than being all-encompassing.

Finally, from a methods perspective, Robson (2011) notes that Constructionism is open to which approach and methods are used. As previously discussed, Constructionism whilst not evaluating experiences per se, does allow the researcher to explore their implications for that context and to draw conclusions. Overall, these flexibilities allow me to bring the focus back to the practical application of my findings within my coaching practice. The next section on theoretical perspective now builds on this.

3.6 Theoretical perspective

Crotty (1998) positions theoretical perspective as the way of guiding and underpinning the choice of methods that deliver the research aims and objectives. It is the lens through which the researcher views the research, including their assumptions, and provides a framework for the research undertaken (Saunders, Lewis and Thornhill, 2019). Epistemology strongly informs the choice of theoretical perspective but axiology – the role values play in research - is important to consider as well (Saunders, Lewis and Thornhill, 2019).

Crotty (1998) suggests that Constructionism is the dominant epistemological stance taken by most researchers who are not conducting objectivist-orientated research. It is associated with a number of different theoretical perspectives and Pragmatism is one of them.

3.6.1 The influence of being a practitioner-researcher

Chia (2002, p. 4) states that “the practitioner is essentially a pragmatist – what *works* is more important than what is *true*” rather than the “truth-seeking orientation” of scholars. Initially I was defensive towards an accusation of ‘shoddiness and anything goes’ aimed at the practitioner, which is how I interpreted his comment. However, at this point I had to explore and justify to myself what my theoretical perspective should be. In doing so I realised that I am an example of his statement and so must concur with it. When I considered my doctoral motivation and efforts to date, I realised that I have,

- identified and outlined reflexive hindering through pulling together material from my own experience and diverse reading.
- taken reassurance from Gilbert’s (2010, 2013) view that clients need insights into the brain’s idiosyncrasies in order to become objective and open up possibilities for change, as it aligns with my thinking and experience so far.
- focussed on making some form of progress towards being able to effectively coach when reflexive hindering occurs and designed a neuroscience-based infographic to achieve that.

My recognition is that, thus far, I have not sought to develop a much deeper and fully comprehensive definition or outline of reflexive hindering. I have taken my present version to be ‘good enough’ and instead I am now focused on finding out *what works* to improve coaching efficacy when reflexive hindering hampers progress. As a first step in doing that I wish to understand how the infographic works in practice and what value might be derived from using it. Again, I have determined what I consider to be a *good enough* starting point: an initial working version of the infographic. I am however truly open and curious to understand how the infographic works with and for other experienced coaches now those two basic elements are in place. Nevertheless, my purpose for doing so is to improve the robustness and effectiveness of the infographic in the service of coaching reflexive-hindering coachees or to knowingly discontinue its use.

3.6.2 Pragmatism

It feels that Pragmatism has already significantly influenced and directed my research activities and thinking up to this point. Nevertheless, I need to decide how I am

choosing to interpret Pragmatism as Crotty (1998), Talisse and Aikin (2008) and James (2019) paint a troubled and fragmented past for it. Talisse and Aikin (2008, p. 25) conclude however that this “is a sign of intellectual health rather than crisis” as Pragmatism is relatively young in its conception.

Despite the apparent disparate versions there appear to be some common threads within them. James (2019) discusses how Pragmatism is about experience and is therefore more empiricist than rationalist. As such, it embraces the assumption that reality and truths change and are part and parcel of the human mind. Cherryholme (1992), Patton (2002), Talisse and Aikin (2008), Gray (2014), and Morgan (2014) concur. Together they agree that overall Pragmatism is about action and actions that enable progress to be made in the real world. In order to do this successfully pragmatists are less focused on the truth seeking of theories and certainly not on theory for theory’s sake (Patton, 2002). If theorising, developing or understanding theory is required to make progress then it is watchfully undertaken. Otherwise, it is perceived as impeding progress (Talisse and Aikin, 2008; James, 2019). Cherryholme (1992, p. 16) summarises it with, “Do not block the road to inquiry, and look to the consequences” and James (2019, p. 72) goes so far as to ask “[w]hat, in short, is the truth’s cash-value in experiential terms?”.

On the other hand, a truth is welcomed if it enables progress whether it is true or not. At first this seemed surprising but James’s (2019, p. 73) example of ‘being lost in a forest’ was enlightening. He describes how upon finding a path, you are spurred on by believing it leads to a house. He contends that that belief may lead to you finding safety sooner even if you eventually discover that there is no house. It is these intricacies by which I can envisage how some of the ‘troubled past’ was created.

The other central tenet for Pragmatism is to advocate “freedom of inquiry” (Morgan, 2014, p. 6) where the researcher, or others, can identify key issues they wish to work on and define for themselves how to do that. This allows the researcher to focus on explanations and actions that they deem address the research problem and to discard the rest (Cherryholme, 1992). Cherryholme (1992, p. 13) states that pragmatic research “is driven by anticipated consequences” which resonates with me and I would proffer has driven my research to date. Pragmatism therefore keeps the research problem central and instrumental in informing the research and its methods (Creswell, 2009).

This flexibility lends itself to using multiple methods although Saunders, Lewis and Thornhill (2019) caution that this is not always so. In reality the pragmatist researcher must choose one or multiple methods based on what delivers the best overall practical outcomes. If the research question suggests a methodology associated to another theoretical perspective, such as Phenomenology or Ethnography, then Pragmatism is unlikely to be appropriate. (Cherryholme, 1992; Saunders, Lewis and Thornhill, 2019)

Pragmatism's axiology (Figure 36) also seems congruent with the reality of my research. Its axiology embraces the fact that the researcher's values influence the choice of direction as well as methods. It thus accepts that in practice it would be difficult for the researcher's values not to influence those factors. (Saunders, Lewis and Thornhill, 2016)

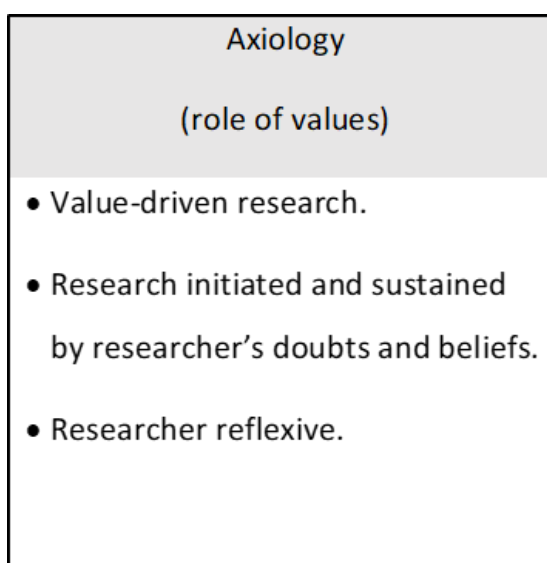


Figure 36: Axiology of pragmatism (Saunders, Lewis and Thornhill, 2019, p. 137)

Bullet point two in Figure 36 fits with my sense that my doubts and beliefs have played a significant role in shaping and driving my research on reflexive hindering: that is my doubt in the use of conceptual models and frameworks, and my sense that something related to neurobiology might be helpful. Also, my conviction towards helping my coachees has been a strong motivator and enabled me to work through the different requirements of the doctoral journey.

Johnson and Onwuegbuzie (2004) provide a comprehensive overview of Pragmatism's features and disadvantages (Appendix 4). Taking these and the above discussion into consideration I therefore decided to use Pragmatism as my theoretical perspective. I

will now discuss a number of methodologies that may be relevant to my research, epistemological stance and theoretical perspective.

3.7 Methodology

3.7.1 Action Research

Participatory Action Research was considered as it appears to align with Pragmatism and practitioner research. This approach contends that together the researcher and participants define their collective problem to work on, their solution to test out and what to measure. The researcher, therefore, does not constrain the research topic or how the findings are interpreted. Thus, it works well in situations where participants are a full part of the research system (Coghlan and Brannick, 2005). Therefore, Action Research of this nature does not appear to be an appropriate research methodology to adopt, as the research has already been defined by me.

McNiff (2016) contends that Action Research can be situated in the practitioner's desire to improve their own practice; that it is solely their practice being researched and they who are researching. They may however also choose to involve others in their research, especially to aid improvements in their own practice. This methodology requires the practitioner to keep detailed logs of thinking, investigation and also complete case studies as part of their research. I feel that I have not been rigorous enough in those activities up to this point to now engage in this style of individual Action Research, otherwise this might have been an appropriate methodology to use.

3.7.2 Mixed Methods

This methodology is strongly connected with Pragmatism (Johnson & Onwuegbuzie, 2004; Creswell, 2009; Gray, 2014). It contends that using both quantitative and qualitative research methods can provide the best answers for the research question rather than being overly restricted by one stance. Creswell (2009. p. 214) outlines a "concurrent embedded" design with a single data collection phase for both qualitative and quantitative data. The primary data collection method can be qualitative whilst a secondary quantitative method can provide supporting data.

However, the quantitative and qualitative research methods are usually significant in their own right and my timescales probably preclude this. At this point only two fixed-

response questions are proposed as part of the research and these were discussed with a quantitative methods expert. Their conclusion was that the proposed quantitative research element was minimal and unlikely to be credible for Mixed Methods research.

3.7.3 Multiple Methods and Nascent Theory research

In organisational research there is a preference for the term Multiple Methods rather than Mixed Methods. It is espoused that this allows greater flexibility of method choice and the point at which the data is combined. The use of Multiple Methods sits well with Pragmatism in that it acknowledges that the real world is complex and that different methods can create a fuller understanding of the research question. (Nepal, 2010; Gray, 2014; McDonnell, Scott and Dawson, 2017; Saunders, Lewis and Thornhill, 2019)

In addition, Edmondson and McManus (2007) introduce the concept of Nascent Theory research in their discussion on field research within organisations. This involves researching an immature or new topic where little theory or literature is available to the researcher. They advise that this research by necessity requires more open questions, use of feedback, rethinking and iteration so that the data collected develops the researcher's understanding. As the term 'reflexive hindering' is not currently used or known within the coaching community I believe that my research would be considered Nascent Theory research. Thus, Multiple Methods can endorse the use of phenomenologically-informed interviews and rating questions to ensure the methods fit the research question. Multiple Methods is therefore the chosen methodology.

3.8 Methods: Data collection

The methods outlined below were to enable data to be collected on the participants' experience of using the infographic and the value that they felt, if any, was derived from using it with their reflexive-hindering coachee. Participants therefore needed to understand the concept of reflexive hindering as well as being trained on the infographic, to enable the data to be collected. Consequently, certain materials were created prior to inviting participants. The full data collection process undertaken is shown in Figure 37 and detailed below.

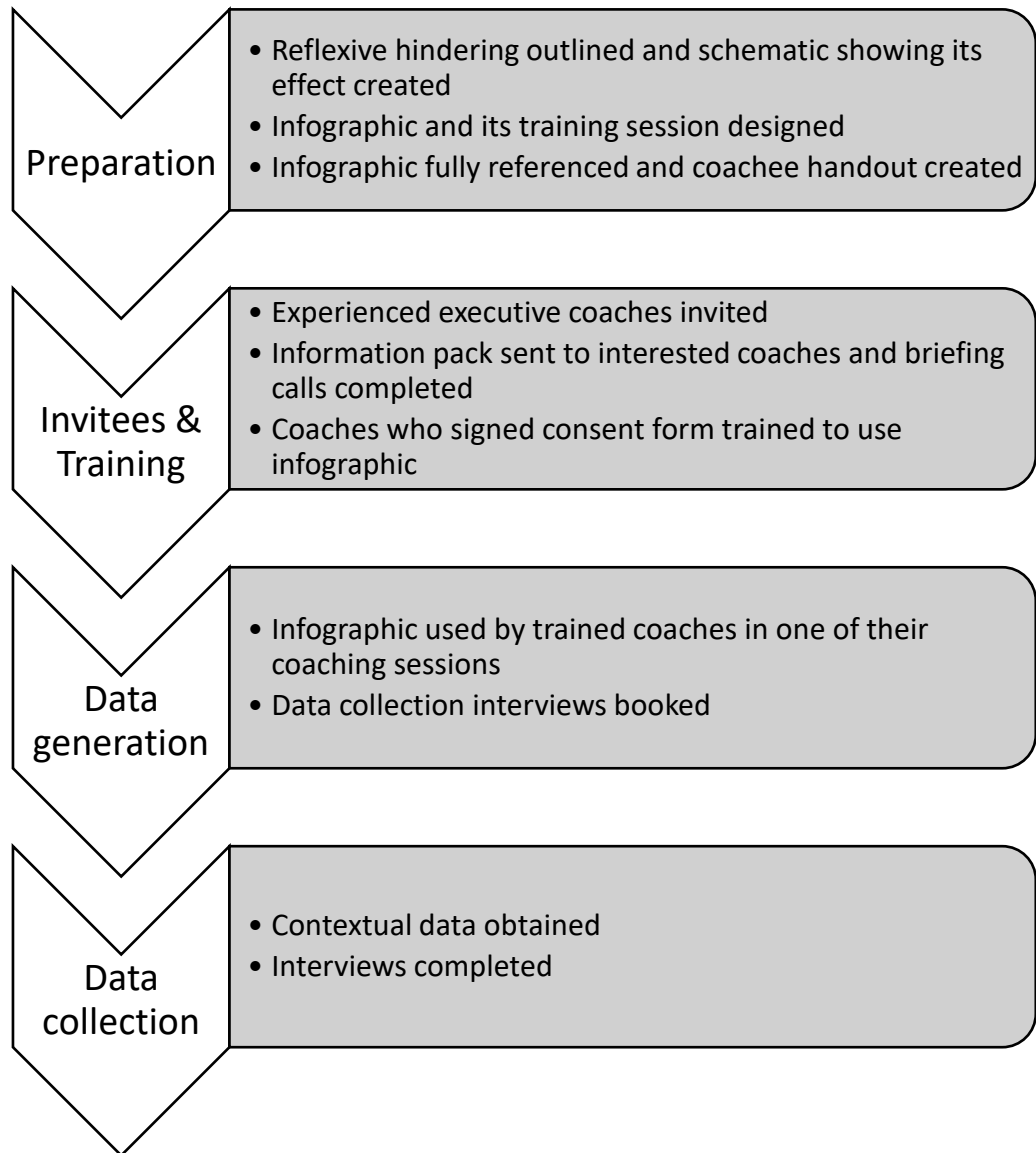


Figure 37: Flow of the activities leading up to and including data collection for this research project

3.8.1 Preparation

Method for determining if a coach has a suitable current coaching assignment

The reflexive hindering outline in section 2.10.1 was used to create a mechanism for participant selection. The text and schematic (Figure 29) enabled the coach to consider the extent to which they were observing reflexive hindering within a coaching assignment. This enabled them to subjectively rate it, from zero to five, on the illustrative schematic provided.

Reflexive hindering infographic

Over the course of six weeks I designed a neuroscience-based infographic specifically tailored for reflexive hindering. I sought feedback on it from coaching colleagues and my applied-neuroscience supervisor. The content was honed further during the development of its related training session.

Ninety copies of the infographic were printed. It was sized (222mm x 510mm) so that it could be read whilst not becoming unwieldy. It was folded (225mm x 209mm) to minimise the initial visual overwhelm that it could create and also to fit into a document carrier. A pdf digital version was made available for virtual and telephone coaching.

Cross-referencing the infographic and associated handouts

A cross-referencing version of the infographic and its associated reference list were created to provide the participants with full references (Appendix 5). A Further Reading handout for coachees was developed and gave suitable references (Appendix 6) in an appealing way. There were three items on its reverse side that I believed could be useful during the coaching session.

Participant training session on infographic

The infographic training session was based on my UWTSD 2018 Coaching Conference presentation. I was confident in designing it as I have designed and delivered hundreds of face-to-face and virtual training sessions. A copy of the training session narrative was sent to participants afterwards. This was effectively the content of the training session apart from the discussions generated through participant interaction. The training session was seventy-five minutes long. This was a balance between it being long enough to be useful and not becoming so long that it deterred participation.

Invitation and participant information pack

The initial invitation to potential participants was written (Appendix 7). It included the initial participant requirement of being an experienced coach with more than five-hundred hours of paid executive coaching (EMCC, 2015).

A detailed information pack for interested invitees was created (Appendix 8) and outlined the involvement required from a participant as well as information on the nature, background and aims, etc of the research. It also included the reflexive hindering outline and schematic.

3.8.2 Participant selection

Invited

Executive coaches were invited to participate in the research. Appropriately experienced and interested invitees were sent the participant information pack and reflexive hindering outline. A briefing call was arranged for a convenient time.

Briefing call

This thirty-minute phone call covered the research, their participation and answered any questions that the potential participant coach had. I gave further details on reflexive hindering and helped to determine if they had a suitable current coaching assignment. A coaching assignment was deemed suitable if the coach felt that the level of reflexive hindering was three or above on the schematic provided (Section 2.10.1, Figure 29). I checked that the items on the consent form had been addressed for those who wished to proceed and asked for a signed copy of it. The training session date was also arranged.

3.8.3 Data generation

Training

The pack of materials for the training session and for use in the research was sent out once the consent form was received. It included three copies of the infographic and the Further Reading handout plus one copy of the cross-referenced infographic and associated references.

The training sessions were all individual and were delivered face-to-face or via Zoom⁵. Afterwards I sent the trained coaches a Continuous Professional Development certificate and the training narrative handout.

Using the infographic

At the end of the training session we discussed the next steps regarding their participation: namely, for them to use the infographic when appropriate and then to promptly arrange a data collection interview.

Once they informed me that they had used the infographic we arranged a mutually suitable interview date. I also emailed them a copy of my three main questions and

⁵ Zoom is a virtual meeting platform

optional probing questions so they had an appreciation of the interview format. This is an approach that Saunders, Lewis and Thornhill (2016) advocate aids credibility.

3.8.4 Interview design

Interviewing

Interviewing is a major data gathering method within qualitative research. It makes the assumption that the participant's experience is valuable and knowledgeable, which aligns to Social Constructionism's focus on constructing meaning (Patton, 2002; Saunders, Lewis and Thornhill, 2016). Semi-structured and certain formal unstructured interviews have their purpose and focus determined by the interviewer. These interview styles however allow freedom for the interviewee to share what they feel is important and for the interviewer to explore the emerging topics. The extent of this freedom depends on the amount of structure. (Patton, 2002; Gray, 2014; Saunders, Lewis and Thornhill, 2016). Patton (2002) recommends the use of an interview guide to force the researcher to think about the nature of the interviews, questions and probing questions. This framework keeps the interview within the bounds of the research whilst maintaining the freedom to appropriately explore. It also highlights the need to use the limited time valuably and ensure useful data is collected.

Interviewing as a method works well for my research as it does not intrude on the coaching session and with how the coach typically uses external material. It does however allow me to elicit their experience of the session. Whilst an interviewee can never fully reconstruct their experience (Seidman, 2006), I felt this was preferable to creating an intrusive situation through observation or filming. Furthermore, I am an experienced coach and used to building rapport and asking questions on emerging themes in an unstructured one-to-one setting of up to two hours. My participants are also used to sharing their experience as they participate in coaching supervision and other professional development discussions.

Outside of qualitative interviewing, quantitative research uses closed, fixed-response questions in an interview setting. These have fixed answers to choose from and can be used to collect behaviour, opinions or demographics, etc (Patton, 2002). They intentionally force the interviewee to put their experience into a predetermined box and are therefore easier to analyse using statistical methods (Gray, 2014). Saunders, Lewis and Thornhill (2016) state that rating questions are widely used to obtain data on

participants' opinions and are easy to develop. One way to format the fixed response answers is to use balanced Likert-type response ratings, such as: strongly agree/ agree/ neither agree or disagree/ disagree/ strongly disagree (Saunders, Lewis and Thornhill, 2016, p. 459; Gray, 2014). The data generated is therefore ordinal. Although my research is qualitative, I wished to situate the qualitative data within a more quantitative context. I acknowledge that this is partly due to my tendency towards objectivity but it also comes from my experience in conducting 360-feedback interviews. My experience has shown that an interviewee might choose to give many more positive than negative examples and yet rate their overall experience of the leader as quite poor. Or vice-versa. As with 360-feedback, I wanted the participant to give their responses rather than me intuiting them. Thus, I felt that two pertinent rating questions related to the two main questions would help position the qualitative data collected. The answers could also be used to explicitly ask the interviewee for their suggestions on amendments to the infographic and its use.

Interviewees generally find these questions appealing to complete as long as the response items are easily distinguishable from each other (Saunders, Lewis and Thornhill, 2016). Croasmun and Ostrom, (2011) advocate that positively and negatively worded response items engage participants to consider their answer rather than responding automatically. But that the use, or not, of a neutral mid-point item is down to researcher preference, although an odd-number of response items provides a middle response which can become overused. However, it does allow for a true middle response rather than forcing a negative or positive bias.

There are some limitations with rating questions, for example, the answers are self-reported and can be biased by previous questions or conversation. Additionally, some people never answer at the extreme ends thus skewing the data. The question wording also needs to be considered so that the question is clear, unbiased and does not cause embarrassment. A further disadvantage of rating questions is that the response maybe chosen to be socially acceptable or what the interviewee feels the researcher is looking for.

Design

I chose to conduct relatively unstructured longer interviews of up to sixty minutes using three main open interview questions. These questions were honed after reading Gray's

(2014) problem-centred interview example, Patton's (2002) discussion on neutrality and Groenewald's (2004) research paper discussing Phenomenology. Although I did not use a phenomenological methodology, I believed that holding Phenomenology lightly within my interviews added value to them. It reminded me to seek the lived experience of the participant and to get them to reconstruct that with rich detail whilst minimising my impact on it (Groenewald, 2004).

Groenewald's (2004) paper was particularly useful as his research sought to ascertain if a specific educational venture contributed to the development of those educated. He, like me, needed to balance asking a possibly positively biased question whilst being open to the fact that the venture may not contribute anything to those educated via it. His two phenomenological interview questions were therefore,

- How did/do you experience the joint educational venture?
- What value, if any, has been derived from the collaborative effort?
(Groenewald, 2014, p. 47)

He chose to add 'if any' to his second question to mitigate the positive bias, which is a technique also advocated by Patton (2002). I therefore chose to include 'if any' in my second question for the same reason.

Thus, my first main interview question was aimed at understanding how participants used and experienced using the infographic. The second was aimed at discovering what value, if any, they felt it had on progressing the coaching goals in that session. The third question invited the participant to proffer information that they felt was relevant and had not yet been sought. Spontaneous probing questions were also asked when appropriate as the conversation evolved.

Question 1: "Please tell me everything you can remember about your experience of using the infographic in the coaching session?"

Question 2: "With respect to progressing the coaching goals, what value, if any, was derived from using the infographic?"

Question 3: "Is there anything else you'd like to tell me that I haven't asked about?"

The interview concluded with two rating questions that each used a seven-point Likert-type response rating scale (Croasmun and Ostrom, 2011; Saunders, Lewis and Thornhill,

2016). A seven-point response scale has three categories of differentiation on either side of the neutral point. I felt that three categories gave a better differentiation of responses than only two categories (Bishop and Herron, 2015), but were still distinct enough in their own right. I chose to use a neutral mid-point response item as I felt that it represented a genuine possible answer to the question and that the participants would use it for its intended use, rather than an 'opt-out' response.

The wording for the two questions is neutral and the response items are appropriate for the questions asked. Bishop and Herron (2015) suggest that the response items chosen for these questions are more uniformly distributed than other possibilities such as never, seldom, occasionally, always. They state that uniformly distributed answers reduce the skewing of participants' responses. It may also go some way to reduce the issue whereby the extreme responses are typically disregarded. However, critics maintain that the uniformity of the response intervals is dependent on the respondents' interpretation of them and, thus, the skewing of answers cannot be ruled out (Bishop and Herron; 2015).

Consequently, the two questions were,

Rating Question 1: Overall, what was the infographic like to use in this session?

Very difficult

Difficult

Somewhat difficult

Neither difficult nor easy/ ok

Somewhat easy

Easy

Very easy

Rating Question 2: Overall, how did it affect the progress of the coaching goals during this session?

Strongly detrimental

Detrimental

Somewhat detrimental

No affect

Somewhat beneficial

Beneficial

Strongly beneficial

Possible probing question: What would need to be different to move that answer further towards Very easy/ Strongly beneficial?

These questions were to give an indication of the overall opinion of the participant and also to elicit suggestions for possible changes to the infographic and its use. They would not form a true Likert Scale as a reliable scale typically requires a question set containing at least six questions with response scales that are focused on one particular aspect (Bishop and Herron; 2015).

The questions were asked at the end of the interview so as not to bias the experience shared and so that their answers were informed by having reflected upon their experience during the main discussion. Asking the questions during the interview also afforded me the opportunity to probe further into the reasons for their chosen answers, if required

3.8.5 Data collection

Contextual data recorded

The participants provided details surrounding the coaching session as well as brief details of their neuroscience training and use of it within coaching (Appendix 10). This data was purposefully collected outside of the interview because otherwise it would add extra content and time to it. Furthermore, as Patton states, (2002) putting it at the start of the interview might set an unfavourable tone to the fluidity of the interviewee reconstructing their experience.

Interview

The interviews were conducted via Zoom as that made recording them easier and it improved the ability to find a suitable time closer to their coaching session. The overall session was sixty minutes which included introduction, interview and wrap-up. The interviews were recorded once permission was granted and followed the interview guide's flow (Appendix 9).

3.9 Methods: Data analysis

3.9.1 The context data – Tabulated

The context data was entered into a customised Excel spreadsheet and appropriately summarised to aid clarification. For example, the free text on the participants' neuroscience training was used to assign each participant to one of three categories for that aspect (Minimal, Some self-learning and workshops, More extensive).

3.9.2 Interview data – Thematic analysis

The interviews were transcribed and then thematically analysed, using a simple thematic analysis process. This is a well-used generic approach to analysing qualitative data. It is a good way to summarise the main points and can be used by inexperienced researchers (Patton, 2002, Creswell, 2009, Robson, 2011; Saunders, Lewis and Thornhill, 2016). Robson (2011) has a useful thematic analysis process, shown in Figure 38, which I followed for this part of the research.

1. Familiarize yourself with the data
2. Generate initial codes
3. Identify themes
4. Construct thematic networks
5. Integrate and interpret

Figure 38: Phases of a thematic analysis (Robson, 2011, p. 476)

Thematic analysis is akin to the process that I use for analysing 360-feedback for coachees, although the latter usually has less material - typically my notes from six thirty-minute interviews. Therefore, NVivo⁶ was a useful aid and repository for the analysis.

My initial stance was to be guided in the analysis by the two main interview questions around 'experience of use' and 'derived value, if any, from its use'. Otherwise I allowed the themes to emerge from the data and then interpreted the findings.

⁶ NVivo is a software package designed to aid thematical analysis

3.9.3 Rating questions – Descriptive statistics

Two main types of statistical analysis are used for closed fixed-response questions. Inferential statistics are used for in-depth analysis, whereas descriptive statistics describe the basic features of the data gathered typically in a graphical format. I was collecting responses from two rating questions, so a descriptive statistical bar chart (Figure 39) for each question was an appropriate way to present those results if required. (Gray, 2014)

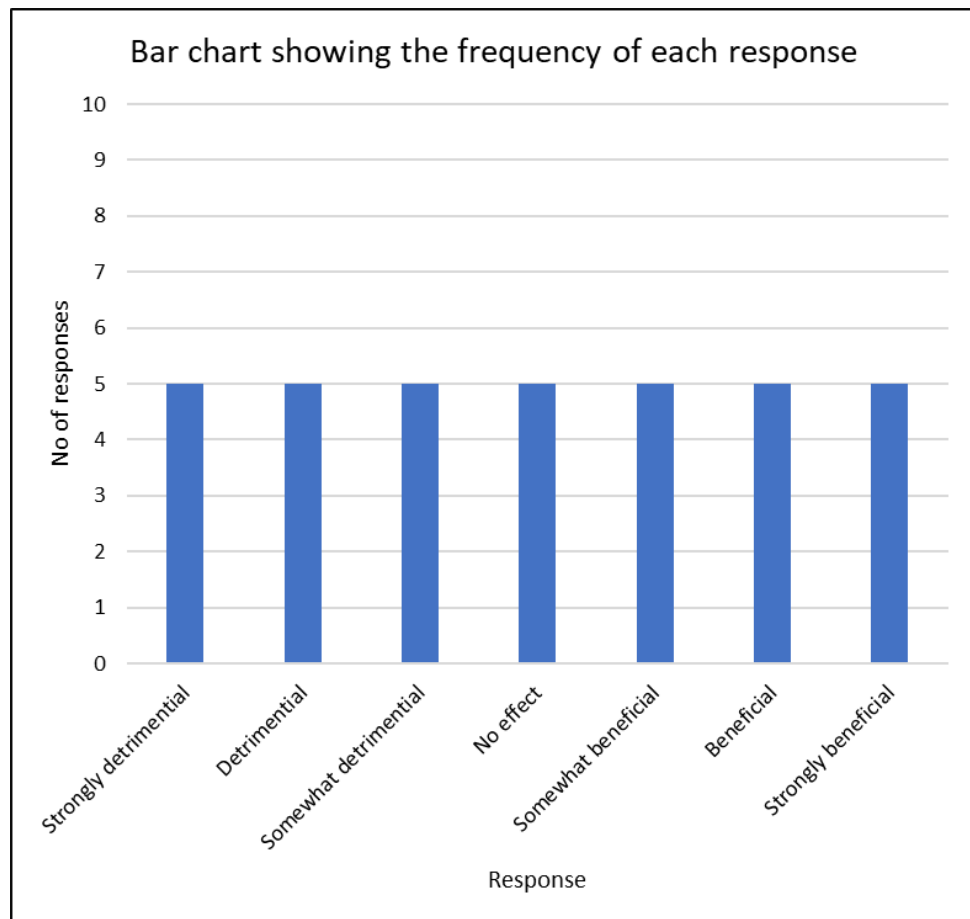


Figure 39: Example of a Bar chart

3.10 Ethics

3.10.1 Introduction

In research projects there are ethical issues to consider for the research methods and overall research project (Patton, 2002; Robson, 2011; Gray 2014). I therefore reviewed a practitioner and a researcher set of ethical considerations in order to decide which one to use for this research.

I abide by the Association of Coaching's (2012) global code of ethics (Table 3) as an accredited coach and I felt these may also be suitable for my research. They are comprehensive but are tailored towards coach-coachee relationships and commercial service provision rather than research. Therefore, they did not feel appropriate for use in this instance.

Working with clients	Context
	Contracting
	Integrity
	Confidentiality
	Inappropriate interactions
	Conflict of interest
	Terminating professional relationships and on-going responsibilities
Professional Conduct	Maintaining the reputation of the profession
	Recognising equality and diversity
	Breaches of professional conduct
	Legal and statutory obligations and duties
Excellent Practice	Ability to perform
	On-going supervision
	Continuing professional development

Table 3: Association of Coaching Global Code of Ethics May 2018

The initial Delphi study had ethical considerations outlined by Keeney, McKenna and Hasson (2011, pp. 105-113) covering,

- Respect for human dignity
- Justice
- Beneficence
- Non-maleficence
- The role of the researcher

These still resonated with me even with the change in research project, therefore I continued to use them for my ethical considerations.

3.10.2 Respect for human dignity

This is about self-determination and how a person controls their own life (Keeney, McKenna and Hasson, 2011). The main considerations are that participants are fully informed and feel free to participate or withdraw at any point.

An information pack was provided (Appendix 8) to ensure potential participants were informed about the project. This described the nature, scope and intended benefits of the research, and the scope of their involvement. Also, a phone conversation was completed at a mutually suitable time to answer questions and discuss participation.

I allowed participants to determine if they felt congruent with taking part and when they felt the infographic might be most valuable to use. I appreciated that participants might feel a sense of urgency towards using the infographic. However, knowing that there were a number of other participants seemed to alleviate that urgency. On the other hand, the infographic might have been forgotten if it was some weeks before they used it. Therefore, reminders required some thought in order to minimise the infographic being used inappropriately.

3.10.3 Justice

Justice is primarily about anonymity and confidentiality (Keeney, McKenna and Hasson, 2011). A number of measures were put in place to maintain these. All interested coaches were allocated codes and the master list, recordings and transcribed interviews were kept securely. It was stated that their data would remain anonymous and nothing in the thesis would be attributable to a participant. Confidentiality and anonymity aspects were reiterated at the beginning of the data collection interview and permission was sought before recording the interview.

3.10.4 Beneficence

Beneficence requires the researcher to 'do good', in so much that the research benefits others and the wider community of practice. (Keeney, McKenna and Hasson, 2011). I felt solid on this principle as the research had emanated from my desire to further help my coachees and was also grounded in Pragmatism. The participant information stated the intended aims, objectives and outcomes of the research. All respondents had also

related well to the dynamic, concurring with its consequences and how the infographic could potentially help.

During the initial conversations I discussed with potential participants how using the infographic might add value to their coachee. Some also suggested alternative contexts for its use, such as with teachers, where they believed that understanding its concepts would be insightful for that community.

3.10.5 Non-maleficence

This principle is about 'doing no harm' (Keeney, McKenna and Hasson, 2011) and it raises two relevant considerations. The first is about not causing the participants stress or distress, although Keeney, McKenna and Hasson (2011) stated that with expert or professional participants, such as mine, then this risk is reduced. This situation may have arisen however during initial conversations and data collection interviews. During the initial conversations some coaches may have felt pressured into participating or into needing to use the infographic inappropriately. The actions outlined in section 3.10.2 were aimed at reducing this.

I also needed to emphasise at the start of the data collection interview that the interview was about their experience of using the infographic and therefore all information shared was useful and valid. Furthermore, I needed to ensure there was no feeling of evaluation or judgement of them, their coaching or their use of the infographic. Finally, I needed them to be comfortable in telling me their real experience and for them not to edit it due to feeling they may embarrass themselves or criticise my work. As an experienced coach I felt that I have a lot of professional experience and ability in handling these aspects.

The second consideration was that I had no real control over how the coach actually used the infographic and what information they conveyed. Therefore, I was relying on their integrity and judgement to do no harm. In addition, I took these steps to mitigate this concern:

- Discussed their suitable coachees and how using the infographic might apply to that situation
- Provided examples of when and how I use the infographic

- Trained them in using the infographic, allowed adequate time for their questions and provided written notes
- Provided comprehensive and coachee-orientated infographic references
- Provided extra information on four key infographic topics
- Offered to answer further questions and provide information/ advice

Overall, I chose experienced coaches to participate as they have navigated many situations across their coaching career. Thus, I felt they were competent to handle issues that might arise from using the infographic.

3.10.6 The role of the researcher

The main consideration here (Keeney, McKenna and Hasson, 2011) is about maintaining objectivity by,

- being methodologically consistent and truthful
- ensuring complete and impartial data generation, collection and analysis
- minimising the researcher's effect on participation

Methodological consistency and truthfulness across participants were improved by having structures and/or scripts for the initial discussions, the training session, the information sent out and the interviews.

Social Constructionism places importance on ensuring completeness and impartiality (Patton, 2002; Creswell, 2009). The phenomenologically-influenced interview helped with this aspect by enhancing the participant's ability to drive its content and thus reduce my bias. Listening to previous interviews was helpful for reflecting upon biases and how I could have remained more impartial. A critical friend role also ensured rigour and reduced the bias during data analysis and interpretation.

My concern about the researcher's effect on participation involved the one-to-one elements. This should have been reduced as we were both experienced coaches and relationship building is a key coaching skill (De Hann, 2012; Palmer and Whybrow, 2019). Eliminating it totally would probably be difficult although reiterating that this was to beta test the infographic helped. I hoped that that created conditions akin to peers co-constructing valuable material rather than just reporting back.

Overall, regular contact with my supervisors and personal reflection provided guidance and maintained the focus on these researcher-related considerations.

3.10.7 Ethical considerations related to the participants' coachees

This research is focused on the experience of the coach using the infographic and what, if any, value they felt it brought to progressing the coaching goals within that one coaching session. Although the interview was with the coach and not the coachee, the coach has, by the nature of a coaching session, involved their coachee. This ethical aspect warrants consideration and was discussed with each potential participant during the briefing call.

My pragmatic research stance was that I wanted the infographic to be used in the same way the coach would use any other educational or exploratory input. Thus, making its use as authentic as possible for the research. Consequently, the research would not be changing the intervention between the coach and coachee, and would not be impacting the coachee in a manner any different to usual coaching practice. Accordingly, the coach would have full control over if, when and how they used the infographic, including withdrawing its use at any point. I believed that this was important for the research itself as it would not constrain or predetermine how the coaches used the infographic. This would therefore lead to the most realistic use of the infographic and add to the robustness of the findings. As with coach-initiated input, the coachee's permission must be sought before using the infographic: this is standard coaching practice. Therefore, due to seeking this permission and from my reflections on all the ethical aspects, it was concluded that further permission was not required.

In each briefing call these aspects were covered.

- How the infographic was introduced and 'positioned'
- Whether the coachee should be informed of the wider research context
- Coach-coachee confidentiality
- Bringing the infographic into the coaching session

I emphasised that, as experienced coaches, they must use their judgement in these matters as they would for any other situation that might arise during a coaching assignment, so that they felt comfortable and congruent. Also, that they needed to use the infographic as they would any other awareness raising material that they currently

use: It needed to be when they genuinely felt it was appropriate and would add value. This situates using the infographic in common coaching practices and attempts to produce a realistic experience of using it for the coach and coachee. I also stated I would respect their decisions and that their decisions would add value to the research due to the diversity created.

We agreed together that a useful way to introduce the infographic is to say that a colleague has created an infographic as part of her doctorate and that they, the coach, feels it would be insightful to share it with the coachee. I also stated that they must ask the coachee's permission to use it.

In most coaching assignments there are likely to be external aspects that a coach could inform their coachee of, such as the content of HR and Line manager briefings prior to engagement. But as experienced coaches, they choose what to disclose, or not, guided by their judgment of the beneficial or non-beneficial effects on the coachee, coaching codes of conduct and supervision. Consequently, given this context and after our discussion on the subject, all the participants and I have felt congruent in our stance of choosing not to share the wider data collection context with the coachee. We agreed that doing so is probably not beneficial to the coachee or the research.

I also stressed that I respected their decision as to what information they felt comfortable sharing with me and that I was focused on their experience of using the infographic. Furthermore, that although I would ask questions, whether they wished to answer them and to what degree would be entirely their choice. This extended to the Context data sheet which states that they may leave any question unanswered.

The duration or style of the infographic conversation may at first appear at odds with coaching. However, 360-feedback sessions and personality-questionnaire debriefs are similar in nature and are deemed an acceptable part of a coaching programme. Also, the literature review demonstrated that some coaching approaches undertake appropriate education sessions. Participants also stated that they felt the coachee would benefit from having this neuroscience-based conversation and that they, themselves, were keen to undertake it.

3.11 Project Activity

This section outlines extra details and the main changes in actual project activity from those described in sections 3.8 and 3.9 above.

3.11.1 Participant invitation and selection

Invitations were sent out to:

- The co-ordinators of two business coaching practices where I am a paid associate. Both shared the invitation email with other associate coaches.
- The members of the coaching group that I co-host
- A few coaches outside of the above
- Forwarded invitations from one coach to another

Formal briefing calls were not part of the original design but after the first two I realised they were important to do. They enabled me to discuss reflexive hindering using examples and to have a thorough discussion about suitable coachees. Overall, I had phone conversations with twenty-six potential participants, of which twenty-four were subsequently trained. Ten trained coaches eventually became full participants as they used the infographic with a coachee and were subsequently interviewed.

3.11.2 Training sessions

The training sessions went ahead as planned. Four were in person and twenty were virtual. Participation varied from listening intently to being highly interactive due to a deeper exploration of the neuroscience underlying the infographic.

The training sessions were also useful for myself in either furthering my reflexive-hindering understanding or elucidating different approaches I had not considered. This was unexpected and welcomed.

Initially I had thought that twenty trained coaches might produce the required number of interviews for reaching data saturation. However, after the initial eight interviews it became clear that the remaining coaches' situations had changed. I reviewed the data and was not comfortable that data saturation had been reached. Therefore, I enlisted a further four coaches during March 2020, which resulted in two additional interviews and data saturation.

3.11.3 Interviews

I noticed during the first interview that the coach had been somewhat hesitant towards divulging aspects that might have felt like criticising the infographic or my work, even whilst answering the neutrally positioned question one. I therefore said to her that it was valuable to understand what did not work as much as what worked because I could then create an improved version for other coaches. My intention with this statement was to position issues that had arisen within the session, due to the infographic, as being beneficial for me to learn about. Afterwards, I noticed that she was more open to stating what had been problematical during the coaching session such that the interview felt well-rounded at the point of conclusion. I felt these aspects were confirmed when I listened to the recording of the interview afterwards. I consequently changed my introduction for interview two by expanding the piece positioning the research as beta-testing the infographic. I reiterated that I had created a first draft of it and that I needed other coaches to help improve version two. I emphasised that this meant sharing what worked and what had not worked - a thorough critique. I stated that the infographic would therefore be thoroughly beta-tested by eleven, including myself, experienced coaches. Thus, enabling us to collectively create a sounder and more valuable version for others, or to knowingly decide not to continue with it.

Hence after the second interview I listened to both interview recordings in order to reflect on the changed introduction, my interview style and the data generated. In doing this I realised that there was also a second possibility for the first interviewee's hesitancy. It could be that she was conscious of not wanting to portray herself and how she used the infographic as inept. Therefore, I updated the introduction to clearly emphasise that all their experience was relevant and there was no evaluation of them, their coachee or their coaching. No further hesitancy of either nature was noticed during the remaining eight interviews.

I was surprised that the first two interviewees both rated the infographic's use as beneficial towards progressing the coaching goals in that session. I reflected on this further to ensure the robustness of the findings as I had not necessarily expected those ratings given the discussions during the training sessions. On the other hand, both interviewees stated certain issues with the infographic itself and the difficulties that those had created. The interviewees, once comfortable, appeared able to feedback on

that aspect. Thus, I inferred that they would also be comfortable giving feedback that the infographic had not added value or had substantially detracted from the session's usefulness. Also, I chose experienced executive coaches to participate because they were experienced in giving difficult feedback to coachees and thus, would likely do the same during the interviews. This was supported by the other eight interviews where strong criticism of certain aspects of the infographic was stated, sometimes from the outset of the conversation.

I was however reassured from the first two interview recordings that question two was not noticeably biasing the answers to it. I also noted that the two coaches stated many of the benefits (value derived) from using the infographic whilst answering question one. Thus, the first interviewee's answer to question two was to state that it had already been covered whilst answering question one. Additionally, the rating questions, which were visually displayed, showed both extremes from 'very difficult' to 'very easy' and 'very detrimental' to 'very beneficial'. These had prompted further information with respect to the interviewee's experience of using the infographic and the value derived towards progressing the coaching goals. I had also used probing questions to unearth how certain aspects had unfolded or been achieved. Consequently, I decided that overall the interviews were eliciting a realist representation of the coaching session and what was achieved within it.

I also made these other adjustments after listening to the first two interview recordings.

- The first participant had requested help with preparation for the interview and to be consistent I adopted this for everyone. I therefore created an email stating the three main interview questions and this was sent out once the interview was booked.
- The interviews had an underlying flow and I realised that it was similar to Gray's (2014, p. 387) example of the flow for problem-centred interviews. I noted the actual flow for my interviews (allow them say what they want which usually follows the flow of the coaching session, then go back over areas I want to explore) and used this to guide my other interviews.

- I noticed I interacted more in the second interview and seemed to get less richness from it. Thus, I was more restrained in later interviews and used the interview guide to remind me of this.
- I updated the context data form to include the participant's knowledge of brain function as this might be an influencing factor on their experience. This update was agreed with my supervisor.

3.11.4 Data analysis

The interviews were transcribed and loaded into NVivo. I had anticipated that I could use NVivo for the full thematic analysis however I found working on the computer screen limiting. I therefore printed the ten transcripts and completed the initial thematic analysis using coloured pens and notelets. This was then transferred onto NVivo. Any further significant re-coding was completed in the same manual way. I used NVivo for coding as well as file storage, once the analysis settled and the changes were minor. My lead supervisor and doctoral colleagues acted as critical friends for the themes that emerged.

I realised that overviews of each coaching session summarising various aspects of the experience would add richness to the findings. Data and quotes were therefore extracted from each transcript to portray the use of the infographic and the coach's and coachee's experience of the session. Correspondingly, I created charts illustrating, within reason, the usage of each element on the infographic and the significance of that conversation.

The interview recordings were revisited as the tonality of the interviewee was also important data. For example, some participants were joyous in their tone whereas other were more considered. Furthermore, some aspects were emphasised differently and their significance changed once the tone and words were taken together. The recordings also helped to create each session's summary as they often reflected the overall feel of the coach's experience.

4 Findings

4.1 Introduction

In this chapter I overview the findings from the interviews with ten executive coaches. The interview data is related to the questions,

“Please tell me everything you can remember about your experience of using the infographic in the coaching session?”

“With respect to progressing the coaching goals, what value, if any, was derived from using the infographic?”

Firstly, I outline how the data was generated and provide the context data. This shows the diversity of the coaches’ neuroscience experience and the point at which the infographic was used within the overall coaching programme. The rating questions are then briefly reviewed as their results capture the underlying trend of the interviews.

Rating question 1: Overall, what was the infographic like to use in the session?

Very difficult	Difficult	Somewhat difficult	Neither difficult nor easy/ ok	Somewhat easy	Easy	Very easy
----------------	-----------	--------------------	--------------------------------	---------------	------	-----------

Rating question 2: Overall, how did it affect the progress of the coaching goals in the session?

Strongly detrimental	Detrimental	Somewhat detrimental	No affect	Somewhat beneficial	Beneficial	Strongly beneficial
----------------------	-------------	----------------------	-----------	---------------------	------------	---------------------

Then each of the ten coaching sessions that took place are summarised to illustrate the coaches’ experience of using the infographic with their coachee. This data shows the diversity of ways in which the infographic was used, the coachees’ and coaches’ experience of the infographic and the nature of the conversation it facilitated. The final section overviews the four main themes that emerged from the thematic analysis of the interview transcripts.

4.2 How the data has been analysed

The findings were obtained in four ways depending on the requirement.

- Data was drawn directly from the context data sheet (e.g. session duration in minutes).
- Specific information related to context, timings, usage, etc were obtained from the transcripts. E.g. Whether the Further Reading handout was used or not; at what point in time during the session the infographic was brought in and how long it was used for.
- Relevant details about the process undertaken during the session and the coach's feelings during that process, were extracted from the transcripts and abridged to create summaries and overviews. E.g. 'Coach 7 went through section one but only covered the left-hand side of section two and the main headline of section three'. Or, 'Coach 4 was initially excited and apprehensive about using the infographic but once started her apprehension receded and she enjoyed the session'.
- A conventional thematic analysis was completed on the ten transcripts and twenty-four post-recording comments (from the researcher's interview notes) for all themes that emerged.

Each section states how the findings were obtained.

4.2.1 The thematic analysis

A simple thematic analysis was completed on eight and one quarter hours of transcribed interviews from ten coaches and twenty-four post-recording comments from the researcher's interview notes. My two main interview questions did influence the thematic analysis as proposed in section 3.9.2, although other themes emerged during the analysis.

The initial coding was undertaken manually using printed transcripts. The themes emerged as I went through the transcripts and therefore themes were added as they arose. At this stage, the earlier transcripts were not re-coded for the later themes. This generated eighty-eight initial themes which were consolidated and clustered into seven themes and twenty-three sub-themes. These were created in NVivo and the manual

coding was transferred into it. Next, each transcript was re-coded for all themes and sub-themes, plus the original coding was checked. The thematic analysis was then printed off and cleansed which resulted in theme, sub-theme and coding alterations.

I had initially decided to follow Robson’s (2011, p. 476) five steps for completing a thematic analysis (Figure 38). On reflection, I feel that the actual analysis steps are more accurately outlined by Braun and Clarke’s (2006) six phases shown in Figure 40. They closely align to Robson’s (2011) steps but include a sixth step which I had not appreciated until this point.

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic ‘map’ of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Figure 40: Phases of thematic analysis (Braun and Clarke, 2006)

The five themes (Table 4) and twenty-four subthemes were finalised after two more iterations of printing and validating.

Name	No. of coaches	No. of refs
Familiarity with the infographic is needed	10	45
Impressions of efficacy	10	174
Value derived from using the infographic for the coach	10	141
Value derived from using the infographic for the coachee	10	187
Views on the Infographic	10	217

Table 4: Emergent Themes from the thematic analysis

Two further predetermined themes (Table 5) were analysed towards the end of the thematic analysis.

Name	No. of coaches	No. of refs
Process	10	97
Reasons for using the infographic with that coachee	10	64

Table 5: Predetermined Themes from the thematic analysis

Appendix 11 shows the coach and referencing breakdown for all seven themes.

In this chapter I have chosen to preference the number of coaches related to a theme over the number of references made. This is because I have taken a constructionist-stance and chose to conduct phenomenologically-influenced interviews. For these an individual's voice and meaning-making is valued despite the majority voice. This is often conveyed in their voice tone and emotional intonation as much as the number of references to a theme.

4.3 Contextual data

The pertinent context data for the coach, coachee and session were obtained from the Context Sheet completed by each coach and from specific references taken directly from the transcripts (e.g. Whether the infographic session was pre-agreed). The ten free-text entries on participants' prior neuroscience training were simplified into three categories for ease of use. All the context data was collated using an Excel spreadsheet and is overviewed in the following three subsections.

4.3.1 Coach context data

The interviews were completed with ten female coaches with varying neuroscience knowledge.

- Three had minimal neuroscience knowledge and rarely brought neuroscience into their coaching, if at all.
- Four had completed some neuroscience self-learning and attended some coaching workshops on neuroscience.

- Three had more extensive neuroscience knowledge through attending longer programmes and other significant activities.

The latter seven brought neuroscience into at least half of their coaching and used diagrams or handouts to varying degrees.

The amount of stated preparation after the training session and before the coaching session also varied.

- Two coaches undertook no other further preparation.
- Three coaches reread the training session notes as preparation.
- Three practiced – two with friends or family/ one used it briefly with a previous coachee.
- Two did not state whether they undertook any further preparation.

4.3.2 Coachee context data

There were six male and four female coachees in senior roles spread across a variety of industry sectors and job functions. Five of the coachees were in science or technology related roles. The high-level coaching themes were diverse, covering ten out the thirteen possible themes provided.

The amount of reflexive hindering by the coachee occurring during the coaching programme was given by the coach using the reflexive-hindering schematic I had devised (Section 2.10.1, Figure 29). This amount varied for the ten coachees from three (quite noticeable) to five (considerable). One coach however changed their coachee's rating from four and a half to two when they met, as the coachee had made good progress since their previous coaching session.

4.3.3 Session context data

The infographic session was between seven days and 111 days after the training session - seven were completed within thirty days. These sessions varied in length from forty-five minutes to three hours and were at various stages of the coaching programme, from the first to the sixth session. The style of using the infographic also varied.

- Five sessions were face-to-face using the printed infographic.
- Two sessions were virtual using a digital copy of the infographic via screen share.

- Three sessions were virtual but without screensharing capability so the coach and coachee had individual copies, although the coach and coachee could see each other.

Seven of the coaches intended to use the infographic with that coachee during that particular session. This was set up in three different ways.

- For three, a session based on the infographic was agreed beforehand with the coachee.
- For two, the infographic was introduced and used straight away.
- For two, the use of the infographic was agreed at the start of the session but it was introduced and used later on.

Two further coaches intended to use the infographic with that coachee but only introduced it if, and when, an opportune moment occurred, which it did in both cases. The remaining coach used the infographic spontaneously during the session and had not intended to use it with that coachee.

The data collection interview took place by the end of the following day for four of the coaching sessions and within seven days for another five sessions. One interview took place fifty-six days after the infographic coaching session.

4.4 Usage of infographic elements

The data for the order in which the sections were discussed and the infographic proportional symbol maps⁷, was generated by reading each transcript and extracting the relevant details.

4.4.1 Order in which the sections were discussed

Eight coaches went through the infographic in order from section one to section three, although the level of detail varied. One coach used only sections two and three. The other coach started with section two, followed by section three and then section one.

⁷ Proportional symbol maps scale the size of simple symbols (usually a circle or square) proportionally to the data value found at that location. They are a simple concept to grasp: The larger the symbol, the “more” of something exists at a location. (Source: <https://www.axismaps.com/guide/univariate/proportional-symbols/>. Accessed:13 August 2020)

Three coaches used the Further Reading Handout during section one: two showed the neuron diagram and one used the egg-box example.

4.4.2 Usage of each element and its conversational prominence

The proportional symbol map in Figure 41 illustrates how many coaches mentioned an infographic element at least once.

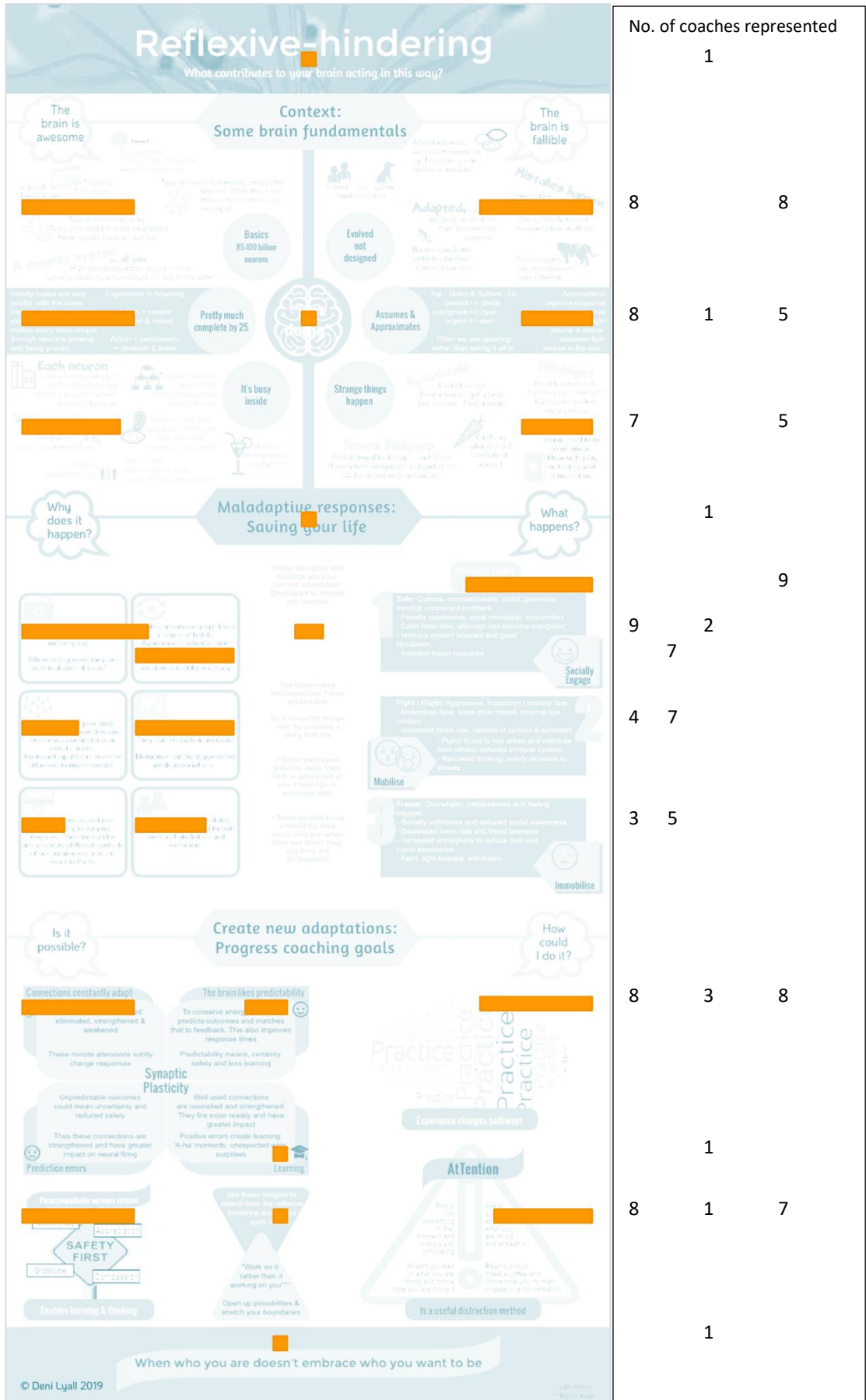


Figure 41: Proportional symbol map indicating how many coaches mentioned an infographic element at least once

The proportional symbol map in Figure 42 seeks to illustrate how much conversational emphasis was placed on an element. The multipliers of one, three and nine were used to accentuate the significance of the discussion that took place about an element by each coach. This ranking method is commonly used in project management (Hunt, 2015) and in Quality Functional Deployment (Franceschini and Rupil, 1999). The results it gave felt more representative of the emphasis placed on each discussion by the coaches during the interviews than when using linear one, two, three multipliers.

The multipliers signify

- One - it was lightly mentioned or just touched upon.
- Three - it was discussed.
- Nine - it was a key conversation.

Therefore, the size of the proportional symbol is determined by the summation of each of the ten coach's score for that item. Each coach's score could be zero, one, three or nine.

The number of coaches who spoke about an element and how that was signified is shown in square brackets. For example: -

- [0,1,0] equates to one coach discussed that element, and its proportional symbol size will have a multiplier of three: $(1 \times 3) = 3$.
- [1,4,2] equates to one coach lightly mentioned that element, four coaches discussed it and two coaches had a key conversation due to it. Therefore, its proportional symbol size will have a multiplier of thirty-one: $(1 \times 1) + (4 \times 3) + (2 \times 9) = 31$.

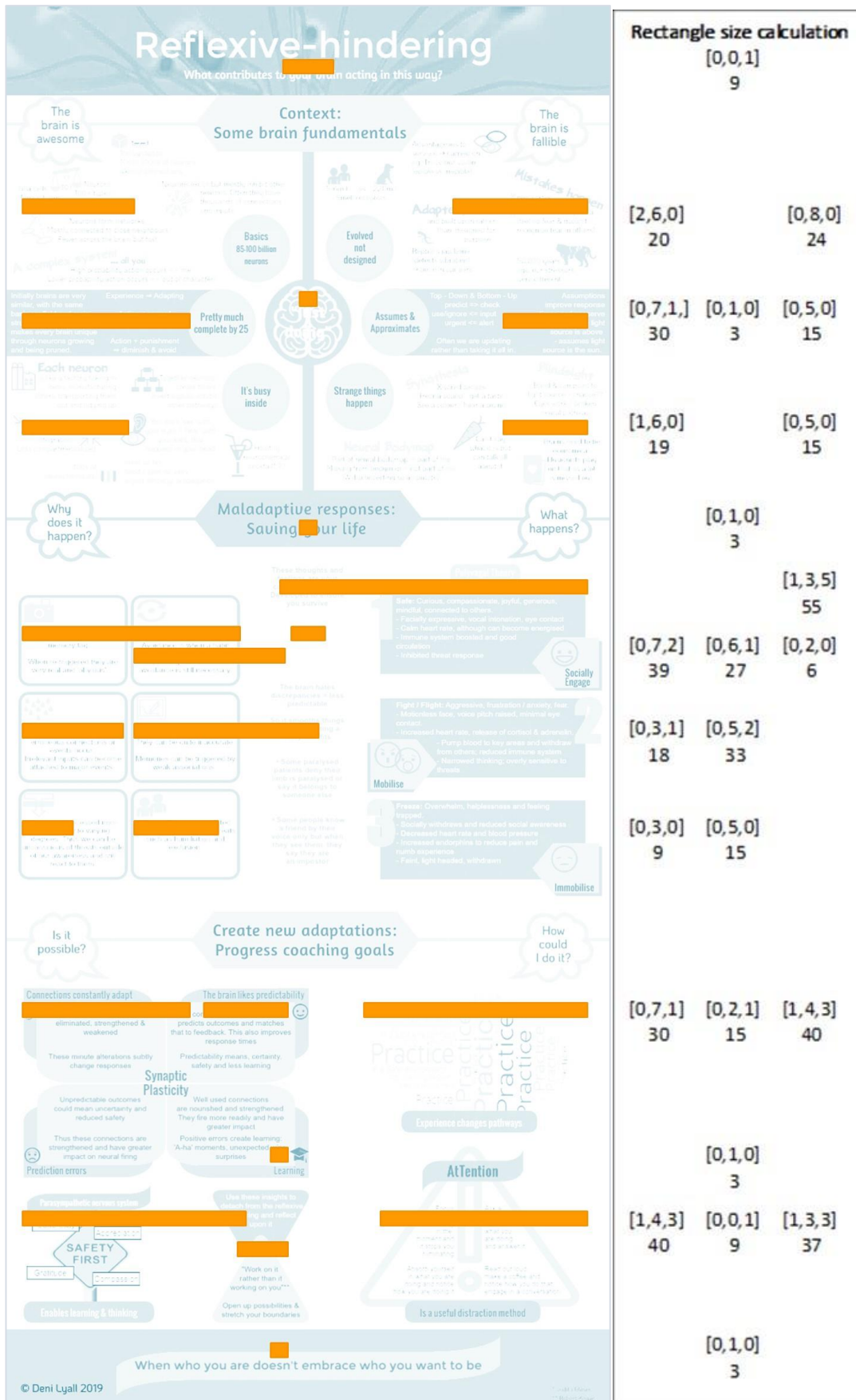


Figure 42: Proportional symbol map indicating the collective conversational emphasis placed on an infographic element

4.5 Rating questions responses

The Likert-type response ratings were obtained from the specific references in the transcripts.

The answers to rating question one (Overall, what was the infographic like to use in the session?) were spread evenly from 'somewhat difficult' to 'easy'. These answers were predominantly related to the large amount of information on the infographic, its layout and the coach's familiarity with it.

The answers to rating question two (Figure 43) however were all on the 'beneficial' side of the response ratings. The reasons given for the rating relates to the subthemes pertaining to the value derived from using the infographic for the coachee and coach.

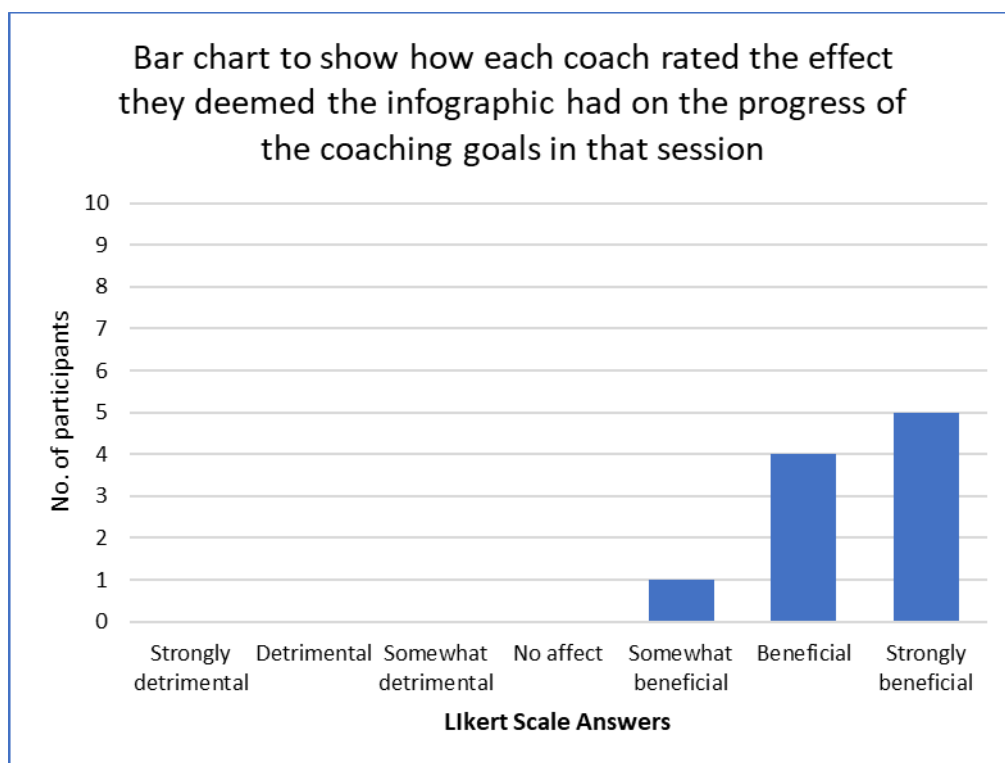


Figure 43: Bar chart of aggregated Rating Question Two responses

The 'somewhat beneficial' answer was given by Coach 8, who down-rated her coachee's reflexive-hindering behaviour from four and a half to two at the point of coaching.

4.5.1 Theme: Reasons for using the infographic with that coachee

I felt it would also be useful to analyse the reasons that the coach had chosen to use the infographic with that coachee. Therefore, I re-read the transcripts and coded specifically for the predetermined theme and subthemes shown in Table 6.

Name	No. of coaches	No. of refs
Reasons for using the infographic	10	64
a) Why they chose this coachee	10	22
b) What they hoped the coachee would gain from the session	10	32
c) What other factors influenced them in choosing this coachee	5	10

Table 6: 'Reasons for using the infographic' subthemes from the thematic analysis

(a) There were predominantly two reasons why the coach chose that coachee for their infographic coaching session. Six coaches wanted to use the infographic because their coachee kept reverting back to their usual behaviour. The other four coaches' decisions were driven by an emotional context, such as anxiety, negative thoughts or emotional responses.

(b) What they hoped the coachee would gain from the infographic session varied more. Two coaches felt it would give their coachee hope and confidence; two wanted it to create commitment for sustained action by giving a different perspective; one coach wanted it to have real impact so their coachee realised the effect he was having on himself; and the other five coaches felt that raising their coachee's understanding of the brain would be advantageous given their coaching goals.

(c) Five coaches stated that they felt their coachee was particularly amenable to a neuroscience-based infographic conversation because they were practical or STEM (scientific, technology, engineering, mathematics) coachees, or coachees interested in neuroscience.

4.6 The coach's experience of using the infographic in the coaching session

This section précisés the ten coaches' experience of their coaching session. The summaries demonstrate the different situations to which the infographic was applied and the different ways in which it was utilised. Each summary includes the following details:

- Context: Coaching medium, timings, programme details and positioning of the infographic.
- How the infographic was introduced, its flow within the conversation, what generated a significant conversation and other noteworthy points.
- How the coach felt about the session and other noteworthy points related to the coach.
- Stated actions and how the coachee felt about the session.

The summaries were created using representative references and extracted details from each coach's transcript and their Context Sheet.

The two related themes at the end of this section were generated during the thematic analysis.

Additional points not covered by the session summaries:

- Three of the coaches had already covered some neuroscience facts about the brain with their coachees, typically about how neural pathways can change through neural plasticity and the limbic system.
- Four of the coaches brought in other material during the session, such as drawing their own brain diagrams, visualisation techniques and the limbic system.
- All coachees had copies of the infographic to look at after the session, either in paper or digital format.
- One coachee was sent the full referencing list (Appendix 5) and one was sent the Further Reading handout.

Coach 1: face to face - session 6/9 (90min)

Infographic not declared until opportune moment – used for middle 30min

This coach usually takes the lead for the session topic from the coachee's update and rarely goes to the session intending to cover something. But on this occasion, they thought the infographic might be useful to cover.

"... he'd sent me an email beforehand, and it seemed the issue we had been discussing over the last previous two sessions now suddenly seemed to be going into [X] and [Y] ... I thought ... [w]e're getting a real definitive with this split, rather than merging together. So, I think, certainly, it was on the basis of seeing that that I thought let's really try this, because this may now give him a process. Or a word to hang his hat on. So he can begin to just unlock it a little bit more."

The coach introduced the infographic by asking,

"How does your brain know to switch off between [X] and [Y]?"

The coach often brings the brain into their coaching conversations although it felt a little more formal using the infographic. Section one was covered with both coach and coachee viewing the infographic. Sections two and three however were covered differently.

"And then I just talked to him about a few things, rather than pointing to it on here, ... because I could see I was just losing him ... so I just thought I'll put that to the side and we'll just carry on our conversation. But use the information."

The coach stated that it formed an educative part of the coaching session and was beneficial to use. She felt that it was the sharing of the information that was advantageous, rather than the infographic per-se. The key conversation emanated from discussing the term 'reflexive hindering'.

"What he enjoyed about it is that he felt a weight of the responsibility lifting. ... It moved his thinking to become more solution based."

Overall, the coach was comfortable with using the infographic's neuroscience content and felt encouraged for the coachee as it created a shift in thinking. They did not state if they had completed additional preparation since the training session.

Stated action(s) for coachee: Practice mindfully making a cup of coffee to distract himself and get away from his desk.

Comments reflecting the coachee's experience:

"...I could see ... it was too much. I could see from him looking at it and then trying to listen to me ..."

"He loves that term, by the way. Reflexive hindering. He said, "Oh, interesting. Tell me more", you know, so, he was really captured by that term."

"So, if it [infographic] had been even the slightest inconvenience, he wouldn't take it. He wouldn't have done so. But he said, "Oh, yeah, yeah, please. Yeah", you know, and he scooped it up with his papers."

Coach 2: face to face - session 3/6 (120min)

Infographic declared at start, used at suitable moment – used for middle 60min

This coach was delighted to use the infographic and found it worked really well, even with her minimal neuroscience knowledge.

"... I think what you're doing is fantastic because it's so positive, it's so normalising in its outlook, it's so positive because it forgives ... and it gives hope in a practical way so I think it's really good ... I think I've got a tool here that's made a difference to somebody's life ..."

The coach nearly used it in the previous session but decided she was not prepared enough. She was therefore nervous about using it, even though she had subsequently completed more preparation. She positioned using the infographic at the start of the session but waited until the coachee discussed how he had once again lapsed before using it.

"Well this is what I was going to show you, do you remember when we were talking last time about your dad 'blah blah blah', and then we got straight into it then."

She went straight to section two as she felt he was impatient to get to some actions. She spent most of the time on section three and section one was not covered. The key conversation evolved whilst discussing the safety-first and attention elements.

“He liked that and he wrote it [a mantra] down, ... and he was saying it looking at me and it was really clear that, his face, just the relief on his face”.

Overall, the coach was very enthusiastic about using the infographic and felt it had been strongly beneficial towards what had been achieved during the session.

“I was extremely nervous ... and the pleasure, I mean I can't tell you it just went so well, it did and he was just really interested in it.”

Stated action(s) for coachee: Practice mantra daily to curb rumination and improve self-compassion. Took his partner through the infographic.

Comments reflecting the coachee's experience:

“I showed him the infographic and I showed him the second part, the middle section, great, he looked at this and he said, ‘oh my goodness this is good’, “
“... in fact, he got hold of it and was reading it,”
“... he said, 'Have you got a digital copy?' ... he sent me a text at the weekend about how he was working on it with his [partner] ...”

Coach 3: virtual, no screenshare - session 4/7 (45min)

Infographic used impromptu, at opportune moment – used for last 20-25min

This coach was not planning to use the infographic with this coachee but his conversation related to fear prompted her to use it. She was delighted she did so, even though she had undertaken no further preparation since the training session.

“As it came up in the moment, I said I've got something here, a resource that might be useful for us to talk about ...”

She then sent the coachee an electronic copy via the messaging system. The coach found the infographic easy to use and went through sections one and two relatively quickly.

“I was so excited that I’d found an opportunity to use it, ... so I was kind of winging it, but I was able to pick out parts of the infographic to – and find them useful. Without – well very little preparation.”

There was a rich conversation during section three, with the key conversation emanating from the safety-first element as,

“It was a complete reframe of just be compassionate to it, to that part of the brain.”

This coach prefers to be well-prepared and plan things in advance. But she felt comfortable working with the infographic in the moment due to its visual layout. Overall, she felt it was strongly beneficial towards achieving the outcome that resulted from the session.

“I’m absolutely delighted to use it ... actually we probably wouldn’t have got to the self-compassion piece without this, so actually it’s been really valuable, valuable, yes.”

Stated action(s) for coachee: Practice saying the statement to improve self-compassion.

Comments reflecting the coachee’s experience:

“... I said to him, there is a lot on here, ... so I’m just going to pick out the parts that I think are relevant.”

“I was fairly confident that he would keep up with it and I think he did, judging by the responses that he gave me. I think the compassionate part was the hard bit, where he was less clear,”

“He said to me he found it useful to separate that part of the brain from himself.”

Coach 4: virtual, coachee sharing screen – 4th hr/16hrs (60min)

Infographic not declared until opportune moment – used for last 45min

The coach introduced the infographic when this opportunity arose for using it: -

“... she once again said, 'You know, I know what I need to do, I've done a little bit but I'm finding it really hard to make that change', I said to her, 'Actually I've got a new-ish piece of information that a colleague of mine is doing a doctorate on and would you be interested in looking a little bit deeper about how the brain works and how this might relate to your situation?' “

Only the coachee could screenshare so the coach sent the coachee an electronic copy of it. The coachee enlarged each section to fit the screen and the coach discussed the relevant items. The coach used her own notes from the training session as she had completed no further preparation.

The coach had minimal neuroscience knowledge and initially had mixed feelings about using it, but relaxed once she started talking.

“I was thinking, oh do I know enough about this, yes I must just go sort of left to right and just pick out a few things but not do everything and once I heard myself say that and I realised I could do that and she was interested, I definitely was still excited but I didn't have that apprehension. “

Section one was covered quickly but section two was more interactive, making up half of the conversation. The memories section led to a major disclosure and the coach was surprised how easily the coachee talked about that.

“... it felt like quite a big disclosure but it was done with ease. It was done with ease and with interest.”

Covering section three completed the conversation.

The coach felt she would be more comfortable using the infographic again and has subsequently used it with four other coachees.

“I really like it; it plays to my interest and ... the type of people I'm coaching at the moment ...”

Stated action(s) for coachee: Thinking more about the revelation. Practice asking the question to stop herself in the moment and make a choice about her actions. Take partner through infographic.

Comments reflecting the coachee's experience:

"I just noticed that she was totally engaged the whole session, she voiced that in terms of her interest in it"

"... she said that she was going to enjoy looking at it again ... I think she said that she was going to share this with her [partner] because ... there might be a little bit of, sort of accountability set up then between them because of their mutual knowledge of this model."

Coach 5: face to face - session 2/7 (120min)

Infographic pre-agreed – used after 15min for circa 60min

The coach felt it would be useful for the coachee to understand some neuroscience as the coachee mentioned being unable to break her old habits. So, the infographic-based session was pre-agreed.

"So, I contracted to say, And the reason for doing it was to help her understand what's going on in the brain, to help her make the changes which we'd just reviewed, in terms of her goals."

Initially the infographic was hard to navigate even though the coach had listened to the recorded training session just beforehand. She is conversant with neuroscience but the infographic was unfamiliar and the text was rather small to read. Therefore, she felt uncomfortable feeling like a novice again.

"to start with it felt clunky, ... when I got on to that [Polyvagal Theory], this section here that I'm much more familiar with and then I completely relaxed ... it was simply a lack of familiarity I think with the rest of it. ... the third page slightly clunky again just because I wasn't used to it."

She felt more comfortable once the conversation became more interactive and the revelation stemming from the 'early memories' element occurred.

"So, from that perspective it should be really, you know, a compliment to you [researcher] because it was really useful that that thing came up."

Eventually it became a stimulating conversation between the coachee's goals and the infographic.

"... we were looking at it and then stopping looking at it and engaging in conversation, so it was stimulating conversation. ... and we would refer back to it ..."

The coach also participated in this research to improve her knowledge which she felt had happened. She now brings in different information and in a more scientific manner. She said of another coaching session: -

"my coaching session today brought in things from this that I would never have used before, so, it's stimulating- And I actually did think, 'I wish I had the infographic open, I could get it on screen so I could show her', ... and it made me think ... I must have it so I can just share the screen if I need to in future"

Stated action(s) for coachee: Notice when using the old habit and reflect upon that to change neural pathways. Practice stopping in the moment and doing something different.

Comments reflecting the coachee's experience:

"... she said there was a lot to it but the bits that we highlighted she found really useful,"

"She pointed at certain sections, I pointed at certain sections as we overlaid how this related to what's going on for her in her, the changes she's trying to make."

Coach 6: face to face – first session after 3-4 mths break (180min)

Infographic declared at start, used at suitable moment – after 60min for 60-90min

The coach had used the infographic with a coachee prior to this session. However, it was not ideal due to limited time and a work-distracted coachee. She was nevertheless pleased about using the infographic again and brought it out straight away. She told this long-term coachee that it triggered some thoughts related to his situation which would be valuable to explore at some point. The coach introduced it an hour later after listening to the coachee's update.

“I said, ‘There’s some really interesting stuff that we can talk about with regards to how your brain is working, and what’s going on, ... especially your stress response.’ “

She was very comfortable using it and found it flowed well.

“I think it’s a complete thing that makes it very real, the fact that it’s this story that you go through, it’s a story, it’s not individual facts it’s a story essentially- It’s got a beginning, middle and an end, hasn’t it?”

The coach went through section one and by the end the coachee wanted to get onto section two. They concentrated heavily on section two, especially the Polyvagal Theory as that was most pertinent to the coachee and created the biggest shift in perspective for him.

“... and this is where his eyes sort of glazed over because it was a realisation for him.”

Section three was also covered.

The coach found the infographic really powerful to use

“I [coach] think I went away from the session feeling this session has been quite significant, in all the sessions we’ve had ...”

and this was echoed by the coachee afterwards.

She has also used her new understanding in conversations with her friends and family. Overall, she was very pleased to have come across the research and found its use strongly beneficial for that coaching session.

Stated action(s) for coachee: Take partner through infographic. Implement actions to improve being in ‘safe mode’.

Comments reflecting the coachee’s experience:

“So, they always want it and he said, “I need to take my [partner] through it.” ..., he said, “I need to show [them] this, I need [them] to at least understand what could be going on.”

“So, this is what he wrote [text] to me afterwards, he said, “[coach’s name] thank you so much for today, it was a great session. ... “

Coach 7: face to face - session 1/6 (60min)

Infographic used from the start – at the start, not in the middle, then recapped at end

This was the very first coaching session. The coach introduced the infographic at the start of the session and used it straight away.

“I said right up front ... that I’m working with a colleague ... and would they be happy to support that by having a look at this model, this infographic because it actually was relevant to the issue that they were going to bring to the coaching.”

The coach is very conversant in neuroscience and believes that it enhances the coaching process although she was apprehensive about using the unfamiliar infographic in the first session. This was compounded by the coachee becoming overly inquisitive about its underlying neural detail. However, the coach felt more relaxed as she picked out the relevant elements of section one and the coachee found them insightful.

The coach then explored the coaching issue more deeply and related it back to section two’s maladaptive responses and memory elements. This led to a stimulating conversation as the coach put the infographic in service of her usual coaching style.

“So, what we did was have a conversation about a pattern that’s maladaptive now but actually at one point in time was quite adaptive. ... That was a really helpful part of the conversation.”

The infographic was then put to one side and was only brought back in at the very end to recap the main themes of each section. Section three’s elements were only mentioned lightly but the coach used the strapline ‘When who you are doesn’t embrace who you want to be’ as it resonated for her.

“But in terms of the big take, the big buckets to the flow, helpful. Yup. I enjoyed it Deni, I enjoyed the session with them, it was a very productive coaching session, it was useful.”

The coach did not state if they had completed additional preparation since the training session.

Stated action(s) for coachee: Read through infographic.

Comments reflecting the coachee’s experience:

“One of the comments from the coachee very early on was, ‘Crikey, that’s a lot of information.’ And they said a bit busy and a bit overwhelming ...”

“As we went through, they were looking at bits and going, ‘That’s quite interesting’. And I was linking it back to the topic that we were talking about to help clarify it. “

“So, I left them with the infographic. They were interested, they wanted to see it in more detail.”

Coach 8: virtual, no screenshare - extra fourth session (60min)

Infographic pre-agreed – used after a quick check-in, most of 60min

This was an extra session specifically intended for sharing the infographic’s content because the coach felt it could be beneficial to the coachee. It was significantly different to the coach’s usual style although she is familiar with some neuroscience, especially related to compassion.

“So, she [coachee] appreciated that, that we were doing this on the back of her having made some fantastic changes and it would give her more food for thought. “

The coach prepared by re-reading the training notes twice. She also used them during the session which enabled her to feel confident and talk fluently through the infographic. She was not certain that would have happened otherwise as she felt there was an overwhelming amount of information contained within the infographic. She went through section one relatively quickly using the notes and felt that was the most difficult section. She then discussed the elements of section two which led to some key conversations and insights. Again, in section three the main aspects were discussed.

“So, I’m quite a thorough person, went through most all in the order and because I had nothing really to make a decision on what to leave out. I only had an hour on the call, so we weren’t labouring over it and I was using your script to help me.”

The coach paused at the end of each section, or where appropriate, to ask the coachee for their insights.

“And she also said to me, the first time she declared this, but she has ...”

Overall, the coach felt the conversation had reinforced some of the changes the coachee had made and emphasised the importance of consolidating them. She also acknowledged the infographic’s usefulness.

“it’s not my usual coaching thing to be dumping quite so much information to look at, it’s obviously got its benefits, it’s referenceable. And I do think if somebody was really stuck, I might say, ‘Now let’s have a look at ...’.”

Stated action(s) for coachee: Making practice fun. Has a mantra to reinforce commitment to change. Think about the conversation further.

Comments reflecting the coachee’s experience:

“I [coachee] looked at it and thought it was complex ... it just didn’t make sense.’ She said the verbal descriptions made more sense.”

“... ‘It’s not going to be the be all and end all but it’s a useful tool,’ is what she said. ... she’s glad she spent the hour,”

“... now she’s saying, ‘Well I did that, and now I know my brain was trying to hold me back, well [states mantra].’ So I think it’s given her a little bit more power to continue on the trajectory she’s on which is a really good one now.”

Coach 9: virtual, coach screensharing - session 2/6 (60min)

Infographic used from the start – for most of 60min

The coach practiced using the infographic and virtual coaching beforehand with a friend, as both were new to her. She is conversant with neuroscience and was enthusiastic to use the infographic, especially with this coachee. He suffers from depression and anxiety and she felt it was very relevant.

“... otherwise, he would just keep wallowing session after session. So, I did take control, I told him what we were going to do but I quite often do that with my clients anyway.”

The coach used the infographic straight away and went through most items in detail. She started with section two as it was most pertinent to the coachee. She then diverted to her company’s handout on ‘Workplace stress’ before covering section three. Section one was covered last, by initially discussing the elements most familiar to the coach and then discussing the rest. She also used the neuron diagram (Further Reading handout) and a mesolimbic system article related to autistic people.

“I think it [infographic] kept me on the straight and narrow because I’m a great wanderer when I’m speaking, and it did keep me more focussed. Because I absolutely stuck with that middle section and then went down to the bottom section. After I’d been through it all I then dotted about and pulled things out ...”

She was initially apprehensive about using the infographic and the virtual coaching but ultimately became confident with using them both. She felt the infographic gave her the means to focus the conversation towards action, which she ultimately achieved.

“He said to me, ‘I feel as though there’s something I can do for the first time in my life’, that gave me a warm and rosy glow.”

This was due to a combination of the conversation surrounding section two’s ‘altered memories’ element and the coach’s visualisation exercise. Overall, she was very pleased when the coachee said it had been a really helpful session.

“I’m very excited by it [infographic] Deni, really excited.”

Stated action(s) for coachee: Add the positive aspects back into negatively-biased memories, practice the visualisation discussed and also get others to practice visualisation.

Comments reflecting the coachee’s experience:

“He said he felt he’d got hope for the first time.”

“... he was very quiet but he was taking it all in he said.”

“He was really interested, I sent him a copy to look at and I said, ‘Have a look through it’. He said, ‘Yes I will do’. He said, ‘I’ve enjoyed it but there was an awful lot to take in’.”

Coach 10: virtual, no screenshare – session 3/6 (60min)

Infographic pre-agreed – used after 10min for circa 45min

The coach prepared by reading some of the infographic’s reference articles and practicing with her partner. This coach is not neuroscience conversant and was initially concerned about being competent enough. She and the coachee agreed in the previous session to use the infographic as it related to how the coachee hampered herself. She introduced the infographic by showing,

“...the card trick thing [referenced on Further Reading handout], then we talked a little bit about how we hadn’t noticed any of the background changes, and things, and then we linked that into this first bit, ...”

The coach kept the infographic conversation moving and left extended coaching conversations until afterwards. Thus, she asked the coachee to highlight particularly interesting topics as reminders to discuss further. The coach felt the infographic was relatively easy to use although,

“...I was slightly panicking about the time, ... it was very beneficial what we were doing ... we weren’t going to run out of time. But that was going on in my mind, ...”

Section one was covered quickly. However, section two was particularly fascinating to the coachee and was covered more deeply. Whereas, section three predominantly focused on creating appropriate actions.

“...then once we got into the second and third bit, I felt that it was really making a difference, and that was - I was going to use the word exciting, it probably wasn’t exciting but it was really, it was positive feelings - that you could see it was really resonating.”

The coach wove in another referenced video clip and the 'eggbox' illusion from the Further Reading handout, which the coachee really appreciated. The coach felt the infographic created a focal point and a framework as well as giving,

"... a language to be able to uncover some of the things that I'd already heard, ... and because it was here and written down, it somehow felt safer for her to be able to open up and for me to be able to mention these things."

Overall, the coachee gave many examples connecting the infographic to her life and the coach felt,

"... it went very well, and was very thought provoking for the client, and it triggered a lot of different avenues, ..."

The conversation created many insightful realisations for the coachee throughout the discussion. Afterwards they reviewed the topics that resonated and agreed to discuss them in following sessions.

Stated action(s) for coachee: Experiment with agreed actions to help change habits and refocus attention. Re-read section one.

Comments reflecting the coachee's experience:

"Section one, ... she did say it felt slightly overwhelming, looking at all of that"
"... she found it really useful, she got a lot out of it, she thinks it's a great model."
"... she said, was that there was so many 'aha' moments, within this, that it was almost too much to know what is the clear way forward then."

4.6.1 Themes relevant to the coaches' experience

The two following themes are most pertinent to how the coaches felt about their experience in using the infographic. Therefore, they are included in this section.

Theme: Familiarity with the infographic is needed

This theme (Table 7) was strongly pervasive throughout the interviews. All ten coaches often stated that undertaking training and being familiar with the infographic is beneficial.

Name	No. of coaches	No. of refs
Familiarity with the infographic is needed	10	45
a) To make it easier, more comfortable and feel more competent	10	15
b) To understand it all	8	15
c) Training helps	8	11
d) To tailor to coachee	4	4

Table 7: ‘Familiarity with the infographic is needed’ subthemes from the thematic analysis

(a) All ten coaches felt more familiarity would make it easier and more comfortable to use. Four of the coaches said that it was their unfamiliarity with the infographic that made it harder to use. The six other coaches did not explicitly state that although they felt that further use or practice would be helpful for improving the coach’s and coachee’s experience

Coach 9: I was glad I had gone through it with her [a friend] in a safe situation because I didn't do it as well as I did it with my client and I think the next time I do it with a client ... it will get better and better.

Also, four coaches were anxious about being able to use it competently,

Coach 7: I was a bit thinking, “Oh my goodness, I hope I’ve really got this.” So, it did get in the way ... because of my anxiety about, “Gosh have I got this, am I on top of it, am I using it properly?”

and another was concerned that she might look like a novice coach to her coachee.

(b) Eight coaches spoke about needing to become more fluent in the basic neuroscience and message underlying each icon.

Coach 6: I’m just someone who likes more familiarity with something and so then that’s why I got all your kind of reading here that I’m going to sort of start doing and spending some days doing my own development around this.

(c) Eight coaches also mentioned that the training session, the references and the notes from it helped them to use the infographic, as well as improving their understanding of it going forwards.

Coach 3: I mean obviously the training was useful, because I recalled a lot of it and was able to use this on – you know, in the moment, without having any preparation.

(d) Finally, four coaches said that becoming more familiar with it would help them understand how to tailor the use of the different elements to each coachee.

Coach 6: And for me to explore it to realise what are some of the important areas to linger on and what are the not so important areas,

Theme: Process

I felt that there were valuable insights within the transcripts relating to what improved the infographic session and a few instances of what hindered its use (Table 8). I therefore re-read the transcripts again and coded specifically for the two subthemes of ‘what helped’ and ‘what hindered’.

Name	No. of coaches	No. of refs
Process	10	97
a) What helped	10	79
b) What hindered	6	18

Table 8: ‘Process’ subthemes from the thematic analysis

(a) References for ‘What helped’ came from all ten coaches, although they had different ways of making the infographic or the session work for them. These are summarised in the following bullet points: -

- Use it with appropriate coachees and ensure you have enough time or reduce the amount covered.

- Have digital copies ready just in case and bring out paper copies with your other coaching materials at the start.
- Demonstrate that you have thought about why it could be helpful to them.
- Allow the coachee to talk about what is happening for them so you have a solid link for introducing the infographic.
- Relax and pick out what is useful for them.
- Tailor where you start and what you cover to the coachee's needs and be comfortable with what you leave out. Having a flow for the infographic helps.
- If they are interested you can talk more and the training narrative is useful for that. But make sure that you connect it to their situation and coaching goals.
- Talk about/ let them read a section and then ask them for their thoughts to keep them engaged, before continuing.
- If they are less interested then put it to one side and only refer to it if appropriate or bring it back in again later on.
- You can also use it in an educational way – 'I believe that knowing this will be helpful to you and your coaching goals' - and dedicate time for doing that. Going with their curiosity helps keep them engaged during these sessions.
- Insert video clips as well as using examples and anecdotes to bring it alive and help illustrate a point. The neuron diagram is also good for appreciating the brain's complexity.
- A lot of preparation is not necessarily needed, although it helps, as you can use the training notes. Remember - you are not trying to be a neuroscientist.

(b) There were also a number of circumstances declared by six coaches that detracted from using the infographic. Two coaches mentioned they did not have enough time for using the infographic. Another coach felt conflicted between the

anticipated timings from the infographic training verses the actual time taken due to the insightful conversations.

Three other coaches mentioned not being mentally prepared to use it. Two of these felt ‘wrong-footed’ as they usually use their own brain-based material and the flow of that was more ingrained than they had realised.

One coachee instantly picked up the infographic and became distracted by the detail underlying its content. The coach stated during the interview that, on reflection, the infographic had been introduced into the session too early. This was also the first session. This issue was not reported by the other coaches, even though other coachees picked up the infographic at a later point.

4.7 The main themes

This section covers the four emergent themes generated by the thematic analysis.

4.7.1 Theme: Impressions of efficacy

One of the themes that stood out from every interview was the strength of responses in support of the efficaciousness of the infographic and the session (Table 9). There were comments that indicated or demonstrated that the coach and coachee were supportive of the infographic, about having the conversation or for the session it enabled. There were also comments that suggested a belief in the infographic’s usefulness.

Name	No. of coaches	No. of refs
Impressions of efficacy	10	174
a) Related to the infographic overall	10	57
b) Related to the session it enabled	10	24
c) Related to a belief in its usefulness	9	48
d) Related to certain elements on the infographic	9	37
e) Related to having the conversation	6	8

Table 9: 'Impressions of efficacy' subthemes from the thematic analysis

(a) All ten coaches advocated the efficacy of the infographic. The strength of response varied from feeling that it had been useful (three coaches),

Coach 1: but I think that, for me, it was invaluable, just on the basis that it created another way to talk about the same thing that we'd been talking about

to feeling keen about it (four coaches),

Coach 5: my coaching session today [another session with a different coachee] brought in things from this that I would never have used before, so it's, it's stimulating- And I actually did think, 'I wish I had the infographic open, I could get it on screen so I could show her', ... and it made me think ... I must have it so I can just share the screen if I need to in future"

to feeling thrilled (three coaches).

Coach 3: I'm absolutely delighted to use it

I took the coachee's impression of the infographic's efficacy as being demonstrated by their desire to engage with it afterwards. The five face-to-face coachees all willingly took away or asked for a copy of the infographic. Four out of the five virtual coachees said they were going to look at it again. Three, of these nine, coachees stated they were intending to discuss it with their partners.

(b) All ten coaches stated the session they had was valuable. This was determined from a combination of what they said, and their voice tone and demeanour during the interviews. Overall, this was a strong theme that rose above some of the difficulties with the infographic that most coaches mentioned. Again, the strength of their responses varied. Two coaches indicated it had been productive,

Coach 7: Yeah, good. I enjoyed it Deni, I enjoyed the session with them, it was a very productive coaching session, it was useful.

and eight coaches indicated that the session had been impactful.

Coach 2: Oh, fantastic ... so this I think gave him a great tool. The '[mantra]', I keep banging on about it but it's wonderful, it's like waving a magic wand ... So, it has been fantastic, ... it's certainly really helped directly address two coaching goals of three that we've got so I was delighted with it, I really was.

Coach 10: ... she obviously had takeaways, things that she's going to already start to practice and put in place, and we've got lots of things now to put on the agenda that we're going to be able to talk about.

There were references from three coachees demonstrating or mentioning that the session had been useful and from six coachees that it had been very useful.

(c) A belief in the infographic's usefulness was demonstrated by comments from nine coaches and five coachees. These included beneficial improvement suggestions, stating it was useful, saying they would use it with other coachees or that they were glad they had participated in the research.

Coach 5: I would actually say [to a future coachee], 'this is to help you see things from a different perspective, looking at yourself from a removed person to a third person perspective, so it helps you to realise how you can bring about changes'.

(d) There were a variety of elements on the infographic that seven coachees noted as particularly engaging. These included the term 'reflexive hindering', the Polyvagal Theory section and,

Coach 8: she said, she liked the idea of looking, of thinking, well it's about 'working on it' rather than 'it working on you'

Five coaches gave enthusiastic statements about aspects of the training narrative, such as the term 'survive and thrive', as well as the infographic elements.

(e) There were references indicating that four coaches and three coachees were enthusiastic about undertaking a brain-based conversation using the infographic. The coaches were pleased to be able to use it and the coachees were keen to learn more about the brain.

4.7.2 Theme: Value derived from using the infographic for the coachee

All ten coaches rated the use of the infographic as somewhat beneficial to strongly beneficial with regards to progressing the coaching goals in that session.

The thematic analysis generated six subtheme benefits (Table 10) for this theme and coachees ranged from gaining three to five of them. Subthemes (a) and (b) were strongly represented in the transcripts, through both the number of references and the emotional tonality during the interview.

Name	No. of coaches	No. of refs
Value derived from using the infographic for the coachee	10	187
a) An explanatory understanding of brain function that makes it real	10	63
b) Real insights that made a difference	9	45
c) Creating a subject to object shift	7	23
d) Invigorates a commitment for action	7	23
e) Puts a focus on being kind to yourself and others	6	21
f) Belief or hope that change could happen	5	12

Table 10: 'Value derived from using the infographic for the coachee' subthemes from the thematic analysis

(a) All the coaches discussed how the infographic had really helped their coachee appreciate what could be happening for them neurobiologically and how that might relate to their coaching goal.

Coach 10: ... she was saying she can see how it links to all aspects of her work, so already that's very helpful, and it's certainly tapped very easily into the core areas that we're looking at.

Coach 8: some of the things she said that were interesting is how the brain sort of tricks you into thinking it's reality, and the recognition that it's not necessarily how it is, it's not an unquestionable truth.

(b) There were statements in nine of the interviews about real insights and valuable discussions that were generated during the coaching session. These were significant for four coachees and dominated two of the interviews about their coaching sessions.

Coach 2: ... it was really clear that, his face, just the relief on his face. I'm imagining him right in front of me now Deni and I can see him now, the look in his eyes, it went from hunted to 'yes, there's an answer here',

Three other coaches talked about insightful conversations that created a meaningful shift in perspective for the coachee.

Coach 1: What he enjoyed about it is that he felt a weight of the responsibility lifting. ... So, it felt an acceptance of it more. In some ways he felt a little bit more accepting of what's happening.

The infographic also gave three coachees real clarity into their behaviour and actions they could take. It triggered an important disclosure for two of them.

Coach 10: ... she's opened up on lots of different things which I wouldn't necessarily have known about I don't think, because it's gone a bit deeper. I mean some of it had been mentioned anyway, but I think it helped to get under the surface of those things and has opened up a lot of different areas where we could start to focus the work and already started to think of ways in which you can adapt,

(c) Seven coaches gave statements that indicated the coachee had extricated themselves from the issue and could look at it more objectively - a subject to object shift. This theme was especially strong in five of the coaching sessions, with multiple or extensive references. Words such as detach, disassociate or separate were used as well as phrases such as 'it's not me' or 'it's my brain'.

Coach 5: Because I think it has helped her to disassociate and actually be able to look at herself from the third person, of what's happening to her brain rather than this is me.

(d) There were statements for seven coachees indicating that they were showing a recognition that they needed to act or a commitment to taking action.

Coach 4: ... she was saying, 'Yes I can see that, it's about creating habits and I guess it's making the start that I need to think about'.

One coach also said that they felt it would reinforce their coachee's learning thus far and her commitment to embedding the new behaviours.

(e) There was an underlying theme present in six sessions that focussed on being more compassionate and appreciative towards yourself and others. Three coaches were overt about this and focussed their coachee onto the topics of compassion and appreciation. The other three coaches demonstrated this theme by saying that their coachee felt more accepting or understanding of their behaviour because they knew it was just a neural pattern. This normalised it for them.

Coach 1: That it actually wasn't necessarily him that was just being ... It was more a pattern that what was not ideally suiting him, but it was just something that his brain was switching in between. So, it felt an acceptance of it more. In some ways he felt a little bit more accepting of what's happening.

(f) Five coaches gave comments about the coachee having more hope or belief that change was possible and that they could do something towards making it happen. This was welcomed by these coaches.

Coach 1: But he suddenly felt, sort of, I could see in him there was more responsibility on his part. And a belief that he could change the status quo.

4.7.3 Theme: Value derived from using the infographic for the coach

All ten coaches cited benefits that they had gained from using the infographic and these became the six subthemes shown in Table 11. Coaches ranged from gaining three to six benefits.

Name	No. of coaches	No. of refs
Value derived from using the infographic for the coach	10	141
a) Useful structure and aide-memoir	10	44
b) Created an immersive and informative neurobiological exploration	9	34
c) Can be an easy to use neuroscience-based tool	7	16
d) Gave coach or coaching credibility	7	11
e) Enabled different conversations	6	21
f) A deeper understanding of neuroscience	5	15

Table 11: 'Value derived from using the infographic for the coach' subthemes from the thematic analysis

(a) All ten coaches talked about how the infographic had benefitted their coaching process in some way. For some of the coaches it provided a way to structure the conversation although they used it in different ways to give that structure.

Coach 9: I was able to do it in a much more structured way. ... I think it kept me on the straight and narrow because I'm a great wanderer when I'm speaking, and it did keep me more focussed.

Coach 7: the three big chunks of the conversation, I found that was my dominant guide. That was the framework that I kept coming back to.

For others it acted as a useful prompt sheet.

Coach 5: ... it contextualised it, it added little bits that I would have forgotten otherwise or maybe sometimes remembered and sometimes wouldn't. ... The difference was having things to remind me of what to talk about, and reinforcing certain aspects, ...

Some coaches felt it would become a useful reference point.

Coach 4: So, I expect it will be a useful, commonly understood language for us to cut through, you know just cut straight to an idea without having to explain it each time.

Two coaches also mentioned that the infographic or bringing neurobiology into coaching speeds up the coaching process.

Coach 7: I think it makes coaching faster and more compelling actually when people can see their own neurobiological patterning coming through like that.

(b) Nine coaches said that they had had rich and insightful conversations during the coaching session from using the infographic.

Coach 8: for me this whole model is about understanding your brain and understanding what's going on. So actually if we've had a shift in perspective on something or a shift in behaviour, that's good but actually if you can now understand how you managed to make that shift and what you were up against with your brain in doing it, then I think that reinforces the learning and makes, potentially could help the learning stick.

Coach 4: ... I was really pleased and a little bit surprised by the ease with which she talked about her past and very intimate detail really about ... it felt like quite a big disclosure but it was done with ease. It was done with ease and with interest and I've got a feeling that she wasn't going to stop thinking about that, ...

The transcripts for four coaches were dominated by references to this benefit and the difference it achieved.

(c) Seven coaches found different ways to make the infographic easier to use. One of them made it easier by using the training notes during the session, otherwise they said they would have struggled. One prepared by listening to the training session again and was surprised by how much she then covered from the infographic during the session.

The other five coaches rated the infographic as 'somewhat easy' or 'easy' to use. Two of these coaches embraced using the infographic and made no references associated with problems due to too much information or its visual layout.

Coach 3: ... I suppose that's testament to the clarity of how it is, how it looks. And how easy it is to pull out salient pieces that I thought might be relevant to him.

The other three coaches were those who stated that they had completed extra preparation between the training session and the coaching session.

- (d) Seven coaches mentioned that it gave weight or credibility to the neuroscience-based conversation.

Coach 3: but it also lent credibility, it wasn't just me making it up.

This was mainly due to it being well-referenced and presented in a scientific manner. As one coach said,

Coach 7: I think it really added value. I think it's very clear that there's a lot of actual factual information, data, hard data in this. But it's data that's been pulled together with a view to understanding how brains change. And why that is difficult. So, I think it lent credibility to the session.

- (e) Six coaches talked about how they had had conversations that were unexpected. These differences were quite striking for those coaches.

Coach 4: ... this worked really well to allow her to open up, maybe more than she might have done without it. It's an assumption of mine, but it seemed to give her permission, with very much ease to be able to talk to it from her own experience.

- (f) Five coaches stated that it gave them a deeper or updated understanding of neuroscience, even for those who were more neuroscience conversant.

Coach 5: ... it gave me a wider understanding of neuroscience generally ... If I was to say my normal use of neuroscience in coaching adds six out of ten to the coaching experience, I think this made it add eight to nine out of ten. ... and I found myself talking about neuroscience in a richer context - than I ever had, would have done before.

Two of these coaches also found themselves using it in other contexts.

Coach 6: ... I just want to show how this infographic has helped me think about things. So, my brother sent me a text ... And again, I was just chatting to her [my cleaner] ... I think this sort of speaks into all sorts of areas and it's really in my thoughts.

4.7.4 Theme: Views on the infographic

All the coaches had comments about how the infographic did and did not work for them. These comments form the seven subthemes in Table 12. The most prevalent themes were that the infographic was educational and that it was daunting due to the amount of information on it.

Name	No. of coaches	No. of refs
Views on the Infographic	10	217
a) Instructive and enlightening	10	60
b) Versatile	10	32
c) Visually daunting with lots of information to take in	9	39
d) Being neuroscientifically referenced and credible is important	9	22
e) Infographic style works	7	29
f) Some aspects did not always work very well	5	18
g) Differing views	5	17

Table 12: 'Views on the infographic' subthemes from the thematic analysis

(a) All ten coaches indicated that the infographic was instructive and enlightening for their coachees. The strength of their opinion is reflected by the fact that this subtheme has over twenty-five percent of the references for this theme. Overall, the coaches said that it gives a deeper understanding of what could be happening for the coachee and of how the brain works.

Coach 6: I think the first bit is really interesting because I think when you see their reactions to an understanding of the brain and although we know a bit about the brain, this is fascinating about the brain.

Also, that it gives a logical explanation and in a clear way,

Coach 9: I think all the information is there on a level that is suitable for most clients and it makes sense because you relate it back to the brain and back to the fact,

and creates curiosity in the coachee.

Coach 4: ... she was generally listening and taking it in and becoming more curious, so she was very engaged with it.

Two coaches commented that it makes it real for the coachee or that they can more easily visualise what is happening.

Coach 6: ... it gives you the backup of this is what's going on and this is- I think the way it's written and the fact that it is this, it becomes very real for people

Coaches also mentioned that having it written down gave more emphasis to things.

Coach 10: I think it's almost like a- having it there, written, it is real, it's not me or her making something up.

(b) All ten coaches demonstrated the versatility of the infographic. Both in its use virtually as well as being able to tailor it to the needs of the session and their coachee. All coaches said they tailored how they used it by focussing on the relevant aspects for their coachee. Some covered most elements but left out the less relevant minor ones,

Coach 3: It was really fast. And sort of quick, quick and dirty, if we can put it like that ... but I was trying to pick out the relevant sections for him, because obviously not everything on there is relevant to him.

Some left out larger parts that they felt were not necessary to the conversation,

Coach 7: I just felt it [Polyvagal Theory] was too much information and I didn't think it would add value to the coaching goals in the moment.

One coach chose not to cover section one and went straight to section two. Another coach also started with section two but covered all three sections eventually.

Coach 9: I started with the middle section of the handout, of the infographic because I could relate that directly to his childhood memories.

One coach also used two video clips and the egg-box example from the Further Reading handout as her coachee was highly visual.

Four coaches, who used it virtually, said that it worked in that format. The other virtual coach said that it was useful because they would not have used their notes in a face-to-face session. Two of the other coaches were pleased they had digital copies as it was useful to send to coachees and to have at hand if needed during future coaching sessions.

(c) Nine coaches mentioned that the infographic contained a lot of information and visual detail. Both of these were felt to detract from its usefulness and ease of use, although one coach did not mention these problems. Overall, this theme attracted the second highest number of references, though the strength of feeling about it was divided.

Five coaches mentioned that it was quite busy and that simplifying it might be useful.

Coach 2: it might be helpful if you had slightly less info on each page,

Whereas, four stated it more strongly.

Coach 1: when you look at it, it looks a heck of a lot of information to be taking in. You know, in terms of then presenting it to somebody. It's quite, it's quite complicated.

Five coaches found section one particularly problematic. Comments covered the fact that it was hard to navigate and quite intense.

Coach 8: I'm not sure I can cope with like the yellow in the top bit for example, five yellow circles and all the information roundabout. ... The bit that is not easy is the part one.

(d) Nine coaches referred to the fact that the infographic draws upon varied and multiple neuroscience references. This was viewed as giving it credibility or lending weight to the explanation. It was also important to some of the coaches.

Coach 2: it's something printed from an objective source, it's not just my opinion, this has come from academia ... he liked that and I liked it as well, ...

(e) Seven coaches mentioned that the infographic format was a great style to use as it conveys a lot of information.

Coach 2: He liked, I think he liked the drawings on there, he liked the way you'd got the information put together particularly on the last section as well, so he was happy.

Coach 3: ... I think that clarity - I mean it – I think that's a major achievement getting all that on that page Deni, getting it clear is, you know, it is fab.

(f) However, five coaches thought there were issues with certain aspects of the infographic style. For example, small font size or colour issues and with understanding what an element was conveying before it was explained to them.

Coach 8: She said, '... I looked at it and thought it was complex ... it just didn't make sense.' She said the verbal descriptions made more sense.

(g) Finally, there were some differing opinions that became apparent during the analysis. Some were between different coaches, for example,

Coach 1: He loves that term, by the way. Reflexive hindering. He said, "Oh, interesting. Tell me more", you know, so, he was really captured by that term.

Coach 5: So, for me the words reflective hindering were irrelevant to this conversation, it was something that had no meaning to my client,

and

Coach 6: that area [polyvagal theory] for me is really important, I could almost see a whole section on it

Coach 1: I think the polyvagal theory is really helpful. But, again, whether it needs to be that in depth on the infographic, ...

and from some coaches themselves.

Coach 8: I was quite impressed with the way you got all the graphics together and fitted so much in personally, but it's overwhelming to me.

4.8 Summary of findings

The ten coaching sessions demonstrate the range of different ways in which the infographic was applied, how effective it was and the various outcomes from the sessions. Overall, the ten coaching sessions can be summarised as being orientated towards: -

- Increasing hope or belief that change can happen and reducing self-blame to shift the coachee's attention away from negative self-talk towards more constructive behaviour. (Four sessions)
- Clearly and explicitly understanding the nature of what was driving the habit in order to create specific options for changing it. (Four sessions)
- Generally understanding more about how the brain operates in order to realise the persuasive nature of reflexive hindering, what enabled the changes to work and to reinforce the commitment to keep consolidating them. (One session)
- Gaining a real understanding of how your behaviour and thinking is impacting you, physically and mentally, to drive action to change that. (One session)

The experience of using the infographic varied from 'somewhat difficult to use' to 'easy to use' and the views on it given by the coaches were diverse and sometimes opposing. Although there was a genuine advocacy for efficacy of the infographic, this was tempered with how visually daunting it was.

Each coach felt the session had been beneficial to some degree: one coach reported it as somewhat beneficial, four coaches reported it as beneficial and five as strongly beneficial. The coaches stated six benefits that they felt the coachees had gained from the session and six benefits that they felt they had gained themselves.

5 Discussion

5.1 Introduction

The aim of this work has been to enable coachees to maintain momentum when reflexive hindering occurs. I came to this research with the sense that understanding more about certain aspects of the brain would be beneficial as I regarded reflexive hindering as an involuntary neurobiological response. The literature review indicates that a neuroscience-informed approach could enable reflexive-hindering coachees to make a subject to object shift and correspondingly be conducive to enhancing the progress they are able to make when reflexive hindering occurs. It also shows that there is advocacy for coaches to understand more about the brain and a precedent for educating coachees in beneficial topics. I therefore generated two specific items for executive coaches with respect to reflexive hindering. Firstly, I wrote an overview of reflexive hindering (what it was and how it manifests during coaching) including a reflexive-hindering schematic. Secondly, I designed a neuroscience-based infographic specifically for reflexive hindering that could be used by coaches with their coachees. Consequently, the purpose of the research project was to find out how executive coaches used and experienced using the infographic with their reflexive-hindering coachees and the value derived, if any, from doing so in one coaching session. Ten experienced executive coaches participated fully in the study and were interviewed after they had used the infographic with their coachee. Having analysed the interview data and presented the results, I now describe my reflections on the findings in relation to the current literature.

5.2 Coachee inner obstacles and reflexive hindering

The previous literature demonstrates that coachees displaying reflexive hindering exist although up until this point they have not been specifically identified as a particular subset of coachees. The previous literature also acknowledges that coachee inner obstacles exist although it is currently unclear as to how much that hinders the coaching process. However, the concept of reflexive hindering resonated with the ten participants as well as how perplexing it is and how much it hinders their coachee's

progress. At no point did they state that these coachees were not ready for coaching or that they had low coachability. The coaches were interested in the reflexive hindering discussion during the initial briefing call and readily identified one or more of their coachees as having at least 'quite noticeable' (section 2.10.1, Figure 29) reflexive hindering that was impeding progress. They understood the aim of the research and were willing to trial it with their coachees, despite this requiring a significant change to their preferred coaching style in some cases.

They also appeared very willing to discuss the issues of reflexive hindering with me and did so in a straightforward manner. It felt as if they saw the ability to elucidate the topic with their coachees as a positive conversation rather than overly focussing on what could be viewed as a negative topic. This was further endorsed by the fact that there were no concerns raised about the nature of the discussions they had with their coachee. This is in contrast to the reservations expressed about having such conversations with the level I and II coaching approaches in section 2.4, but aligns with the approaches in levels III and IV.

There was also no mention of discomfort or resistance on behalf of the coachees due to their insights and revelations. In fact, the opposite was mentioned, with a number of coachees making new disclosures about their past. These emerged whilst exploring how earlier experiences shape and affect present thinking and behaviour. Two coaches felt that the use of the infographic made this easier to do. Perhaps, directing a conversation towards the infographic made it easier to discuss these matters than having to directly talk about them to a coach. Coaching approaches such as Clean Language (Dunbar, 2016) use inanimate objects, picture cards and drawings or notes by the coachee, to stimulate the coachee's thinking. Dunbar (2016) discusses the Clean Hieroglyphs technique which is where a coachee writes down everything relevant to their goal or that conversation on one sheet of paper. The coachee is then asked what they notice about what they have written and how it is written both linguistically and pictorially. Dunbar (2016) suggests that having it written in front of them creates some emotional distance which aids the coachee's thinking process. The infographic may also create a similar effect alongside its instructive value, although this was not an explicit consideration of this study.

The insights and disclosures also seemed comfortable for the coach as there was no mention of them feeling uncomfortable about the direction the conversation had taken. Perhaps the explanatory nature of the conversation ensured that only the relevant details emerged. Also, this conversation was not aimed at resolving these disclosures but focussed on acknowledging their influence and maybe this created a natural boundary to the conversation. It feels as if it struck a balance for the coach between crossing the coaching-therapy boundary verses completely avoiding topics or feeling unable to acknowledge their existence for fear of crossing that boundary. This research therefore supports the stance of many of the level IIIb approaches (section 2.4) that discussions about formative years can generate understanding rather than becoming therapy.

One characteristic that featured in all the conversations is that there was acknowledgement that the neurobiological response manifesting itself as reflexive hindering was aimed towards 'saving your life'. Thus, it was at one time useful to the coachee, although now misplaced, and hence it is an adaptive response in context. Therefore, the overall purpose of the conversation is positively framed and may enable some of the level I and II approaches to use this as an alternative way of exploring obstacles without reaching problem saturation (Grant and Gerrad, 2019) or verging on therapy. It also creates an alternative neurobiologically-based option for coaching approaches to use. This may be more successful with some coachees, as suggested by the participants, rather than using therapeutic terminology, such as Psychodynamic coaching's transference, counter-transference, etc.

5.3 Enhancing the coaching of reflexive-hindering coachees and their ability to make progress

Overall, the results show that the infographic-based conversation enhanced the coaching of reflexive-hindering coachees during that session. The themes suggest that it created a valuable shift in perspective, a subject to object shift, that invigorated action and improved self-compassion and/ or acceptance of the dynamic. This mirrors in coaching what Gilbert (2013) asserts happens from using psychoeducation in Compassion Focused Therapy (CFT). It may also begin to address Irons, Palmer and Hall's (2019) call for more research into Compassion Focussed Coaching (CFC). The

research participants, like CFC coaches, educated their coachees about certain brain facts to create more openness to possibilities within the coachee and the results may therefore be useful to CFC research.

All the coaches rated the use of the infographic for that session on the 'beneficial' side of the Likert-type response ratings, with nine out of ten rating it as beneficial or strongly beneficial. I was not expecting such clustered results due to the diversity of the coaches' styles, their neuroscience knowledge, the reasons for which it was used and contexts it was used within. I also fully acknowledge that it is a joint result - a combination of my efforts and their coaching ability. It does however indicate that this is a viable option that is worth progressing further.

The coach who rated the session as 'somewhat beneficial' was the coach who had completed the coaching programme but felt that the infographic session would be useful for the coachee. She initially rated the coachee's reflexive-hindering as four and a half. However, at the infographic session the coach found that the coachee had made great progress and amended the rating to two. I was therefore anticipating a neutral rating at best for how the infographic had affected the progress of the coaching goals in that session, especially as this coach was cautious about imparting such a large volume of information. However, it was interesting to hear the various insights it gave her coachee. The coach concluded that it had reinforced the coachee's successful progress by illuminating what she had been *up against* (i.e. her brain's habits) and gave her a renewed commitment to consolidating those changes through continued practice. The fact that it was an additional session may also have unknowingly been a contributing factor towards the session's success as the coach could separate out the noticeable difference in coaching style whilst using the infographic. Importantly it also allowed the coach to use the infographic authentically and thus highlights the benefits of using it in this way.

These findings align strongly with Miller's (2016, pp. 105-106) proposal that educating clients shifts them from passive bystanders to actively contributing to the situation. Also, to Gilbert's assertion that educating clients on their "tricky brains" (Gilbert, 2014, p. 17) helps them make a subject to object shift and opens up more possibilities for change. However, Gilbert (2010) uses a more experiential method of educating his clients. For example, he demonstrates the power that memories have over the body by

inviting clients to imagine eating a delicious meal and noticing how it causes their mouth to salivate. Also, his central neurobiological model, discussed in section 2.6 (Figure 22), is at a higher systems level than the infographic. This research may therefore complement CFC by providing an alternative approach if required for some coachees. Equally, CFC also provides additional and complementary material to the infographic session if required.

In fact, the infographic conversation should enable the coachee to be more receptive to coaching interventions that the coach feels are appropriate once the shift happens. This is due to the improvement in belief and motivation for action shown in the results. The interviews also give examples of the coaches weaving in their own coaching exercises and models, especially once insights and realisations had occurred. These often took their lead from the infographic's section three prompts. This is an example of Bowman et al.'s (2013) assertion that coaches can use neuroscience to inform their choice of coaching interventions. Similarly, Gilbert (2010) uses interventions drawn from various practices such as CBT and Mindfulness after he completes his psychoeducation. Donker et al. (2009) and Harvey (2018) also state that neuroeducation has positive benefits for CBT and therefore this may be true for CBC regarding the infographic. Furthermore, the infographic may provide a useful additional conversation during Kegan and Lahey's (2009) Immunity to Change four step exercise, especially if reflexive hindering is impeding progress.

An unforeseen result was the extent of the relief, acceptance or self-forgiveness stated as being experienced by the coachee. This was stated as emanating from the realisation that the reflexive-hindering response is a neurobiological reaction that was once useful and not something to be embarrassed or self-deprecating about. This resonates strongly with the expectation that Gilbert (2103) has, that understanding the brain's idiosyncrasies reduces shame, guilt and self-criticism, although I had not expected it to be prevalent with coachees given the session's non-therapeutic nature. It appears from the findings that this emotional shift, including that of deep thoughtfulness stated by some coaches, is an indication that the subject to object shift has occurred, as the shift and enhanced self-compassion were jointly discussed during the interviews. Therefore, this may be a useful indicator for a coach using the infographic.

Overall, the themes and data for 'Value derived for coachees' give solid examples of the types of shift a coach could expect to see.

- A recognition as to what is driving the reflexive hindering
- Realising that the response has been learned and that neurobiological responses can change
- Having more self-compassion (and perhaps compassion for others) due to better acceptance of the reflexive hindering and its underlying adaptive intent
- Enhancing hope or belief within the coachee that change can be affected
- Use of detaching words or phrases, such as "it's not me, it's my brain", or being able to objectively discuss the dynamic as if an observer
- Increased motivation for taking action

5.4 Using the infographic within a coaching session

The findings show that valuable results were obtained within that session through a variety of ways of engaging with the infographic. This variation encompassed:

- medium (face-to-face, virtual meeting, etc)
- stage of coaching programme (second, third session, etc)
- point of introduction (prior to or at point of use)
- duration of use and depth of coverage (in-depth, light touch or only pertinent elements)

Also, there were a variety of ways in which the infographic was used during the coaching session.

- High-level conversational framework or flow. E.g. the three main section messages
- Detailed conversational structure using most of the elements in the order intended
- An aide-memoir for the coach
- A number of specifically pertinent elements used

Predominantly, these coaches appeared to take a pragmatic stance with respect to engaging with this research and to using the infographic; in that they felt they had enough understanding from the limited training to test it out and were therefore willing to use it. However, there was an unwavering focus on ensuring it served the coachee's needs and therefore the coaches have beta tested the infographic in a greater variety of ways than I had anticipated.

These findings show that the infographic has adaptability and that a coach can skilfully tailor its use appropriately for the coaching need. It demonstrates what is possible under different conditions and effectively encourages the coach to make it work in service of their coaching – to use it pragmatically and resist becoming unnecessarily wedded to its underlying linear flow. It also shows that the infographic has the robustness and versatility to be used in this manner. Nevertheless, all the coaches stated that they needed more familiarity with the infographic or that more extensive training was required. They felt this would create a richer understanding of the infographic's purpose, its key messages and storyline as well as the role of each element. In turn, as a number of coaches stated, this would enable them to make more informed choices about tailoring the infographic to their coachee's needs and also to understand the implications of those choices.

I thought these seemingly incompatible results were intriguing - the beneficial differences obtained during one coaching session from limited training verses their feeling that more familiarity with it would have helped. I discussed this with Association of Coaching accredited Master Executive Coach, Ian Saunders (2020b), who acted as a 'critical friend' for this chapter. He felt that this highlighted two characteristics. First, the difference between practice and rehearsal (Saunders, 2020a) which is an important distinction for musicians: for whom practice is an individual activity to enhance skill and knowledge, whereas rehearsal is a relational activity and involves the interplay between different people. In essence the training session and reading of the notes is akin to practice and moves the coach from 'I know I do not know that' to 'now I know it' - a shift from conscious incompetence to conscious competence (Figure 44) as described by Burch's (1970) conscious competence learning model (Adams, n.d.). However, the only 'rehearsal' of the infographic for seven of the coaches was when they used it live with their coachee. This brought a relational dynamic into using the infographic and

highlighted things that were unknown to them, that they ‘did not know they did not know’ (unconscious incompetence). This raises the coach’s awareness as to where they are less adept at using the infographic than they initially thought or areas where they could become even more adept. These two aspects (improving where you know you do not know beforehand and finding out there are other things you did not know you did not know during) might explain the coaches’ ability to get a beneficial result whilst at the same time desiring to gain more familiarity with it. Gaining more familiarity with it through rehearsal would enable them to hone their judgement regarding its use as they would encounter different situations to navigate. The highlighting of ‘things they did not know they did not know’ might also explain why some coaches felt uncomfortable as they began to use the infographic as it would have effectively taken them backwards from conscious competence to conscious incompetence (Figure 44). It might also have caused them to begin to consider whether they had other areas of unconscious incompetence (‘what else do I not know?’) that could potentially cause them problems during the sessions.

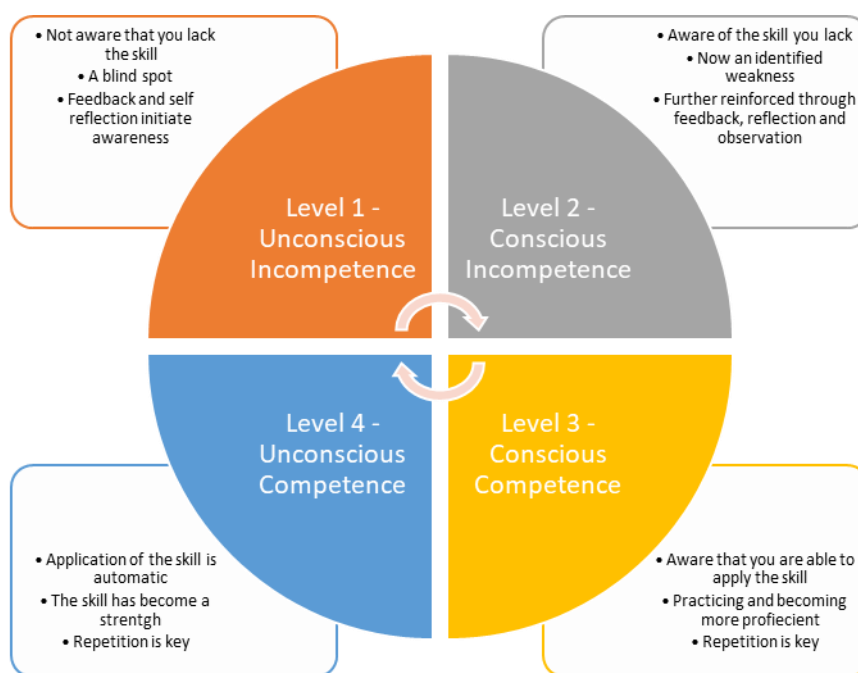


Figure 44: The Conscious Competence Learning model developed by Burch whilst working for Gordon Training International in the 1970’s (Mehlberg, 2015)

Secondly, Saunders (2020b) stated that he would expect these experienced coaches to skilfully use the infographic during the coaching session as they are likely to have a

more mature coaching ability. Hardingham (2006, p. 11) states that “competent and ethical coaches” draw upon various tools, techniques and models within their coaching practice and are called ‘eclectic’ coaches. These are coaches who Clutterbuck (2010) describes as using a ‘managed eclectic’ approach (Figure 45) to their coaching.

Coaching approach	Style	Critical questions
Models-based	Control	How do I take them where I think they need to go? How do I adapt my technique or model to this circumstance?
Process-based	Contain	How do I give enough control to the client and still retain a purposeful conversation? What’s the best way to apply my process in this instance?
Philosophy-based	Facilitate	What can I do to help the client do this for themselves? How do I contextualise the client’s issue within the perspective of my philosophy or discipline?
Managed eclectic	Enable	Are we both relaxed enough to allow the issue and the solution to emerge in whatever way they will? Do I need to apply any techniques or processes at all? If I do, what does the client context tell me about how to select from the wide choice available to me?

Figure 45: A comparison of the four levels of coaching maturity in coaching conversations. (Clutterbuck, 2010, p. 76)

Both Hardingham (2006) and Clutterbuck (2010) agree that these coaches are skilful and thoughtful in their choice of interventions and “are careful not to collect techniques and processes in the way a jackdaw collects shiny objects” (Clutterbuck, 2010, p. 75).

Clutterbuck (2010) puts forward these statements as being common to eclectic coaches,

- “They place great importance on understanding a technique, model or process in terms of its origins within an original philosophy.
- They use experimentation and reflexive learning to identify where and how a new technique, model or process fits into their philosophy and framework of helping.
- They judge new techniques, models and processes on the criterion of ‘Will this enrich and improve the effectiveness of my potential responses to client needs?’”

(Clutterbuck, 2010, p. 75)

Hardingham (2006) and Clutterbuck (2010) go on to say that eclectic coaches regularly expose themselves to different coaching approaches and other related fields in order to gain a wider perspective and a broader depth of knowledge. They state that it is

through this depth of understanding and practice (and Saunders (2020a) would include rehearsal) that enables the eclectic coach to seamlessly weave their collection of knowledge and skills together in the service of their coachee's needs. It appears that Hardingham's (2006), Clutterbuck's (2010) and Saunders' (2020a) perspectives shed light on those seemingly incompatible results, by viewing them as different parts of an eclectic coach's journey – experiment first to raise awareness of what needs honing. Clutterbuck (2010) also lay out four steps for an eclectic coaching dialogue,

- Preparation
- Understanding
- Solutioning
- Reflective debriefing

The research findings show that the first three steps were strongly present within the coaching sessions. Time is taken in the Preparation step to connect to the coachee's issue and understand it enough to make a judgment as to which intervention to use. Nine of the coaches were able to go into the infographic coaching session with prior knowledge as to how the infographic connected to the coachee's reflexive hindering and coaching outcome. All spent time positioning the use of the infographic with respect to the coachee's situation and predominantly allowed the coaching session to progress to a pertinent point before actually using it. Coach 6 was especially fervent that the coach should explicitly state that they had thought about this to demonstrate their authenticity in using the infographic. It appears that the ten coaches agree with Wilson's (2019) second and fourth ethical considerations, which were discussed in the literature review (section 2.4.5) and are shown in Figure 46.

- Has a full understanding of the model they are using
- Has agreement with the client to share and use the model
- Has used the model to create awareness and generate insights into their own unconscious process
- Works ethically and with appropriate standards of professional practice

Figure 46: Wilson's ethical considerations for a coach using TA models and concepts (Wilson, 2019, p. 301)

They also agree with Wilson's (2019) first consideration through their desire to have more understanding of the infographic as evidenced in section 4.6.1 and discussed above (section 5.4). However, there was no evidence of the intentional use of the infographic with regards to the third ethical consideration.

Clutterbuck's (2010) second step is about exploring the issue together and mutually understanding its landscape. The results richly show how the coaches did this with the infographic and this is covered in section 5.7 below. Clutterbuck (2010) advocates that the Solutioneering step, deciding on possible actions, is easier if step 2 was enlightening. This may go some way to also explain how these experienced coaches were able to achieve valuable differences during that session, through the rich discussions they facilitated, despite the limited training undertaken on reflexive hindering and the infographic.

5.5 The infographic and its content

The efficacy of the infographic and the session it catalysed were strongly regarded as well as its educational value and credibility. It appears that the results support the choice of elements on the infographic as being pertinent to reflexive hindering - a result corroborated by the quality of the conversations that were facilitated, the beneficial differences achieved during that session and the usage of the items shown on the infographic proportional symbol maps (section 4.4.2, Figure 41 and Figure 42).

The credibility of the infographic was important to the coaches and coachees - a facet that was strongly advocated by the 'coaching and neuroscience' literature review (Section 2.8). The credibility came from a combination of facets. Firstly, this was due to the infographic being created through an academic endeavour and being thoroughly-referenced. Second, from myself and the way I conducted the initial conversation on reflexive hindering and the training session. This was partly due to my positioning of the infographic as being part of a coaching repertoire rather than suggesting it was something more intrusive than that. I designed it as one way to prepare the ground for more fertile coaching conversations and this seems to have been well-received. Also, my own coaching and neuroscience knowledge and experience, combined with an explanatory voice, were noted as improving the infographic's credibility. The fact that six of the coaches were not personally known to me prior to the initial conversation

lends weight to how the research was perceived. Otherwise I wonder if they would have embarked on the journey that they did which required committing to over two and three-quarter hours of time plus their willingness to engage the interest and involvement of their executive coachee. I believe this demonstrates the infographic's credibility, professionalism and its perceived benefits as well as the appetite for such an intervention.

The coaches generally endorsed the idea of using an infographic but there were aspects of it that caused issues and need resolving. It was most frequently observed that it is visually daunting, its flow is not overt enough and that it is fragmented in section one. Perhaps this is a reflection of Ekhtiari et al.'s (2017) comment that it can be difficult to pitch neuroscience information at the right level due to its complex nature. On the other hand, I feel that the findings have given me enough insights to be able to improve on the current situation despite there being differing views on some elements, such as the level of detail in the Polyvagal Theory section. The general consensus is that the training session and its narrative were valuable and I can therefore use these as guidance for the next iteration of the infographic. I believe I can therefore achieve the balance between improving the user-friendliness of the infographic whilst maintaining the important facts, which was the concern of Coach 8.

Section two appeared the most useable and generated a lot of insights, especially from the memory elements. These elements appear to be relevant to almost all the conversations – perhaps this was to be expected as they strongly underly the reflexive-hindering neurobiological response. However, the Polyvagal Theory element may be more or less useful depending on the threat response the reflexive hindering instigates, although it does appear that it is beneficial when relevant. Hence, some coaches stated that the Polyvagal Theory element contained too much detail whilst other coaches stated how the detail insightfully resonated with their coachees. It also appeared that some coaches were more comfortable than others in leaving some information untouched. Therefore, ensuring I help coaches understand how to navigate the elements seems more appropriate than overly adjusting them. Overall, I am comfortable with the differing views raised for this section and I am also more informed about the need to discuss, during the training session, how to handle this diversity and the concerns it raises for the coach. This conversation is pertinent to all sections – how

to make informed choices about which elements to cover and which to leave out, the implications of doing that, and navigating that seamlessly with the coachee.

Section three's findings concur with my own view, that the synaptic plasticity element is fragmented but the other four visually depicted elements work well. I made the decision to use the synaptic plasticity element as it was, knowing it was less elegant than the other four elements in this section, as I needed to balance starting the research verses perfecting the infographic elements. I also needed feedback on this particular element to help shift my restricted view on how to usefully present it. I think having a pragmatic stance has been helpful in this respect and I am glad that I took that position and started the research project once I felt it was *good enough*. The feedback has been useful and has given me some thoughts about the synaptic plasticity element's re-design, such as which details within it were used. I was also pleased that the Attention element was well received as this element was designed from my own thoughts and experience in working with my own and my coachees' reflexive hindering. It was reassuring to find that it was strongly used and cited as being useful. It draws upon my thinking from different areas such as mindfulness and Dehaene's (2014) and Seth's (2017) work on consciousness. The coachees also felt that the examples shown within it provided useful practices to alleviate their reflexive hindering and the coaches were able to build on those with their own exercises.

Section one has a similar theme to the synaptic plasticity element – detailed and disjointed. However, section one seemed to have all the relevant and pertinent items to achieve its purpose at the time of design - namely to illustrate that the brain is awesome and has limitations. I realised during the training sessions that the left-hand side created a more fluent story if it was covered in a different order than how it was visually laid out. I felt this was an acceptable glitch at that point but the consistent feedback on this section confirmed the fact that section one is disjointed. Consequently, the coaches primarily used the six yellow circle sub-headings and a limited number of elements.

The proportional symbol maps (section 4.4.2, Figure 41 and Figure 42) and feedback on the infographic gives me confidence that the main areas and most of the elements are valuable to have on it. Some streamlining of sections two and three would be beneficial as would a restructuring of section one. No one felt I had overlooked a key element,

although a few elements were cited as unhelpful. The extreme examples, such as the neural bodymap, were noted as off-putting by one coachee and attracted less coverage by most coaches. I need to reflect upon my reason for including those examples as they stray from the explanatory manner of the infographic by potentially sensationalising those aspects. It was fortuitous that these were highlighted. It would also be useful to analysis how other scientific psychoeducation infographics, such as the examples in Section 2.10.2 (Figure 30 and Figure 31), display information. These may give different methods and ideas for conveying the information now I have a more informed understanding of what is required.

Overall, the results indicated that all the coaches and nine of the coachees found the infographic informative. It was also cited by Coach 1 during the training session as being a really good synopsis of how the brain works; in that it gives clarity on certain neurobiological aspects of the brain and helps coachees understand some of the pertinent functional elements and limitations of it. Each element of the infographic has a role and has been chosen to collectively create a flow, or as Coach 6 stated, a story with a beginning, a middle and an end. The flow addresses the three main points of – ‘understanding your brain has limitations’, ‘knowing what you are really up-against and forgiving yourself more’, and finally ‘realising that change can happen although it takes commitment’.

5.5.1 Prevalent mind/ brain models within coaching

The literature review indicated that the prevalent mind/brain model used in coaching is the conceptual cognitive model shown in Figure 47.

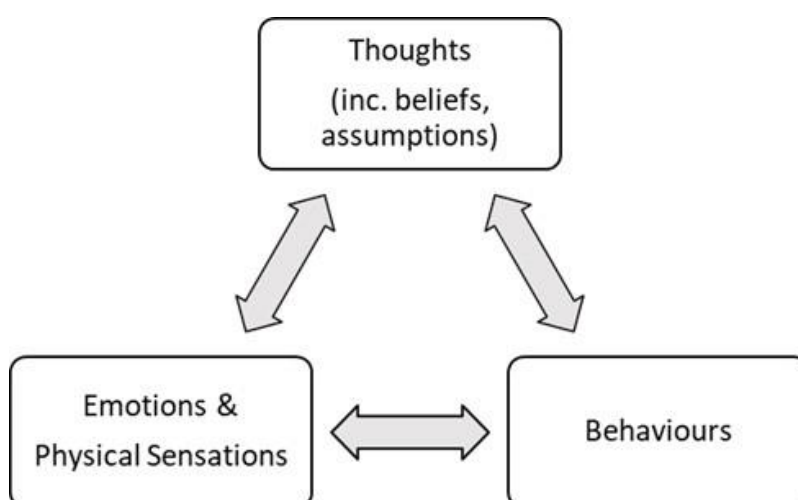


Figure 47: Prevalent conceptual cognitive model used within coaching

This is a simple and quickly describable model for coachees to understand how these elements affect each other, albeit high-level and conceptual in nature. It is intended that the infographic would add underpinning neurobiological detail to this model and usefully deepen the coachee's understanding, although it would take time to do that. Therefore, a coach would need to judge whether the benefits of understanding the infographic's level of detail outweighed the time required. Bachkirova's (2011) mind/brain model is more holistic than the infographic and the cognitive model as it serves a different purpose. It is orientated towards informing a coach as to the appropriate approach to take given their coachee's current developmental stage. The infographic seems not to be especially pertinent to that discussion.

The literature review also revealed that the main neuroscience brain models (triune brain and limbic system) used within coaching are presently controversial. They have been borrowed from the field of neuroscience and are stand-alone models orientated towards understanding quite particular aspects of the brain. The infographic gives a broader neurobiological perspective of the brain than those and also than Peters' (2012) Chimp model. Also, the infographic attempts to maintain an explanatory manner rather than caricaturing or judging certain regions or functions of the brain as these models can easily do. However, Peters acknowledges his model's style and deems it beneficial for those wishing to work on their own personal change.

Overall, this research demonstrates that the infographic's contents provide a relatively accessible and coherent overview of some key fundamentals of the brain for coaches. These coaches found the content valuable as they felt it added to the credibility of their coaching and they were able to describe the brain-related aspects in a more scientific manner. This supports the views of Bachkirova (2011) and Peters (2012) who state that both coaches and coachees would benefit from understanding something about the nature of the brain as this is central to coaching and personal change. The research also found that coaches benefitted whether they were relatively new to neuroscience or already more knowledgeable in it.

5.6 Advocacy for the infographic and its coaching session

There was also strong advocacy for the infographic's efficacy and for having such coaching conversations. This was unexpected given that some of the coaches and

coachees felt the infographic was quite daunting and that some elements were not visually comprehensible. A real desire for a more user-friendly version of the infographic was shown. Three coaches also gave several well-considered suggestions to help enhance the infographic beyond just wanting less information on it. For example, the use of flash cards for the larger elements, having an area for a coachee to make their own notes on it during the conversation and the need for section introductions.

The infographic was however only part of the preparatory set-up for the coaches and many of them noted how valuable the training session and its narrative handout were. Overall, there was the thirty-minute briefing call discussing reflexive hindering, its schematic and outline document, as well as the seventy-five-minute infographic training session plus the follow-up material (narrative, references, further reading handout, links to useful articles and videos). This is the combination that the coaches took to the coaching session alongside the infographic. Therefore, it may be posited that the valuable shifts achieved within that session were also due to the coach's raised awareness of reflexive hindering, their additional neurobiological understanding and their use of the explanatory style, as the infographic aims to bridge the gap between scientific vocabulary and caricaturing.

All the coaches and coachees indicated at some point that the infographic was useful and all ten coaches also stated how valuable they found the conversation that emanated from using the infographic. I had not expected this depth of positive reaction towards my endeavour but this demonstrates a keenness by coaches for the overall package created. It might also be an example of the allure of neuroscience.

Alternatively, this might show a desire by the coaches to understand more about their coachees from an alternative perspective other than just a psychological one.

Furthermore, it suggests that there is an appetite for meaningful and accessible information about the brain for coaches to apply practically.

5.7 The quality of the conversation - beyond education

The coaches used phrases about the infographic session such as 'it was educational' and 'created an educative part of the coaching', but they also said that it made it real for the coachee and/ or that it provided clarity. These comments caused me to reflect on the quality of the conversations: they were quite striking in most cases and seemed more

than just education. The coaches used the infographic in an embedded way that became an exploration rather than an explanation. On reflection, I believe the quality of the conversations is better described as an immersive and instructive neurobiological exploration rather than educational. The coach and coachee entered into the world of the coachee's brain and explored it in the context of the coaching goal and the reflexive hindering. This appeared to create enough curiosity to gain an insight that enabled the coachee to become more objective. It felt as if it was more than just neuroeducation. It was not done *to* them as the term 'education' might suggest; it was done *with* them, *for* them and *within* them – *within their brain*. One coach described it as akin to exploring a historical house where you can wander around and engage more fully where you wish to and just glance at other parts as you walk by. This felt like an important factor contributing to the overall success of the sessions and is suggestive of Clutterbuck's (2010) 'Understanding' step within the eclectic coaching approach.

Shabi and Whybrow (2019) state that the coach is well placed to help a coachee uncover their structural interpretations and how it has shaped them. They also state that in order to do that you need to be "passionately curious" (Shabi and Whybrow, 2019, p. 222) about the coachee and how their experience has shaped their interpretation of the world. This feels as if it is true for the infographic-based exploration of reflexive hindering as well. It appeared that the engagement became richer at the point the conversation resonated with the coachee or connected to their reflexive-hindering experience. I see this as a shift from pure education to a more interactive conversation requiring an authentic rationale from the coach that really connects and resonates with the coachee – above and beyond just information sharing. This supports Miller's (2016) proposal that educating clients shifts them from passive bystanders to actively contributing to the situation.

This might explain why Coach 1's coachee found the reflexive-hindering conversation engaging as this was new information for him that resonated with his perplexing experience. Conversely, Coach 7 introduced the infographic early on during the first coaching session and the coachee became distracted by wishing to understand the general neuroscience details on the infographic. The conversation became richer and more coaching-focused once the coach dived into the nature of his reflexive hindering. The only conversation that I felt was less immersive was that of Coach 9. She recognised

that it was probably too much information giving and less interactive than it could have been. However, it gave the coachee hope that change could happen which he had not previously felt. Coach 9 also stated that she intended to have a more interactive conversation in the next session to link the infographic content to her coachee's experience.

The results appear to demonstrate that the infographic conversation works well when it is situated in the coaching outcomes and when the coach can authentically connect it to the coachee. This requires coaches to put effort into demonstrating that they have thought about it and believe it. In turn, this makes it deeper than just 'a lesson on the brain' and it becomes more real for the coachee because it is tailored to their situation. Consequently, they can see how it applies to them and, importantly, how they can apply it. This might explain the success of Coach 2 and Coach 3's sessions given how selective they were in their use of the infographic elements. This would not preclude the coach covering more aspects of the infographic in later sessions if appropriate as they have created a strong link with the neurobiology underlying their coachee's reflexive-hindering response.

Another aspect that appeared to add value was the coach's use of associated illustrative examples or analogies. Some used the examples that I had used during the training session and others used their own versions or drew from the immediate environment. A number of coaches made their examples personal and thus exemplified the nature of the conversation by showing their own vulnerability and learning. This is a coaching conversation that Stelter (2018) endorses as he proposes that it improves the co-creation between the coach and coachee of a new perspective.

Pausing and inviting observations worked well for improving engagement and this was achieved in various ways. Some coaches described some elements and then asked for their coachee's observations. Others allowed their coachee to read an infographic section for themselves and then asked for their observations. Either approach appeared to improve engagement and encourage exploration of and connection to their situation.

The findings give a wide selection of possible ways to engage with the infographic and these variations would be useful to be brought into future training sessions. These findings would also corroborate Iron's (Irons and Kerr, 2020) view that psychoeducation has three steps to it. These are:

- i. Share the fact
- ii. Bring it alive with an example
- iii. Make it real by getting the client to give a personal example

The results endorse the use of neuroeducation within coaching where it is used to aid the coachee's thinking, although most coaching approaches do not appear to hold this view. Nevertheless, Transactional Analysis and Psychodynamic coaching approaches regularly use educational elements and these interviews give some examples of how it can be skilfully undertaken by fully merging it with the coachee's needs. Also, it can be helpful sometimes for coaches and coachees to "think about thinking" (Bowman et al., 2013, p. 103) and Bowman et al. (2013) advocate that neuroscience is well suited for that.

Overall, it seems that the coaches skilfully used the infographic in four ways to create the immersive and instructive exploration:

- By being authentic and believing it was useful for the coachee and, in stating that, actively demonstrating that they had thought about it with respect to their coachee.
- To do the above the coach listened to the coachee's story and then wove that into positioning the infographic. They then waited for an appropriate point to actually use the infographic so that the connection was stronger.
- Throughout the conversation they powerfully connected the infographic information and illustrative examples to the coachee's reflexive-hindering experience.
- They also deep-dived into the coachee's world as things resonated, leaving the infographic behind until it was appropriate to reconnect to it. They totally switched their focus and let go of the infographic exploration in a fluid and congruent manner.

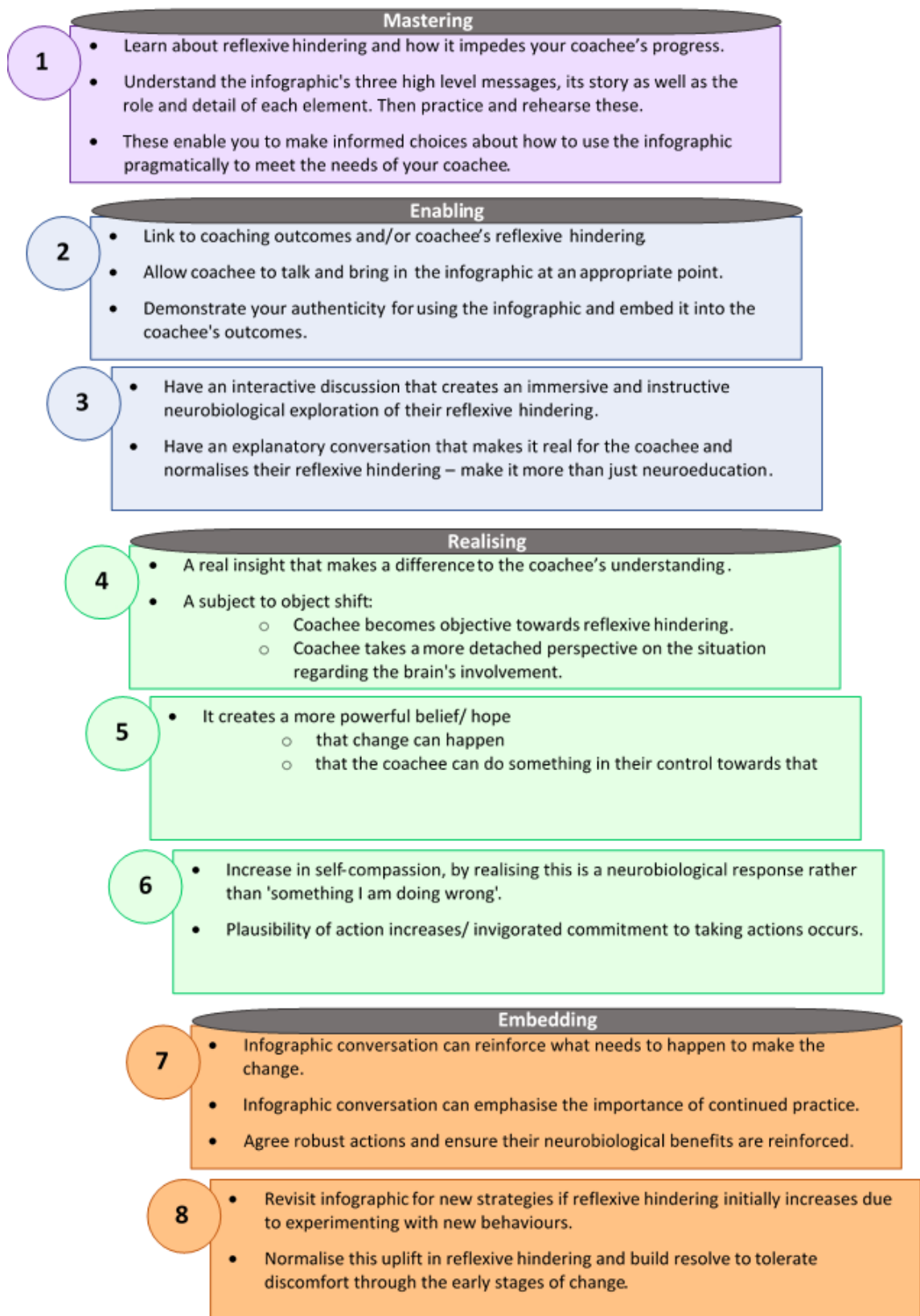
5.8 A process for enhancing the efficacy of coaching when reflexive hindering impedes progress

The narrative from the training session was quoted as being useful and more informative than the infographic per-se, which suggest that it needs to be at the forefront of the training and messaging. It appears that at present I have preferenced the infographic and it could be more effective by being embedded within the concept of reflexive hindering rather than appearing to be a standalone tool.

This chapter has brought together all of my understanding and learning as well as broadening my perspective. It has coherently brought everything under the one umbrella of a strategy for improving the effectiveness of coaching when reflexive hindering impedes progress. Therefore, I have synthesised the findings into a process flow for that. This highlights the key phases for the coach to undertake and the expected differences for the coachee. I believe the research provides evidence for the efficacy of this process and gives some credence to the possibility that it should be well received by the coaching community.

The process flow builds on the research findings' subthemes of 'What helped' and 'What hindered' ('Process' Theme) as well as the preceding discussions. It consists of four phases (Mastering, Enabling, Realising, Embedding) containing eight stages and is shown in Figure 48.

Figure 48: The MERE Coaching Conversation for coaching when reflexive hindering impedes coaching progress



5.9 Neuroscience and coaching

One of the additional outputs from the findings is researched evidence from ten executive coaches as to their views on using a specific coaching-focused neuroscience artefact within their coaching practice and the value they state that it adds. Riddell (2019) asserts that neuroscience adds value by creating a neural, rather than behavioural, explanation and that some coachees may prefer this type of explanation. Overall, these findings would support that assertion. The results also demonstrate that when used in the service of the coaching agenda coachees find it enlightening. However, Coach 7's interview illustrates how easily the allure of neuroscience can detract from the coaching environment. Their coachee became overly interested in the neuroscience detail rather than how it informed their coaching outcomes. This was the only time the infographic was used during the very first coaching session. It appeared that it was introduced from the outset before there had been much discussion about the coachee's goal, although this was not entirely clear from the interview. The coach also stated during their interview that she felt the infographic was brought into the coaching session too soon. However, it was a valuable comparison to have for the research as it emphasises the need to think about how to manage the timing of the infographic's appearance.

The findings also support Riddell's (2019) opinion that thoroughly researched up-to-date neuroscience information adds credibility to coaching. Additionally, a number of the coaches noted that this neurobiological conversation had more weight due to it being documented and scientifically underpinned. However, maintaining an explanatory voice was more out of my control and the interviews indicate that the coaches brought the limbic system and the amygdala hi-jack metaphor into the conversation. This aligns with the literature review finding that neuromyths are hard to quash. Perhaps this is because these models resonate with our cultural narratives surrounding right and wrong, good and evil and preferencing right over left (McManus, 2018). Conversely, the use of personal or other analogies, such as the 'grass pathways' analogy, were usefully illustrative and engaged the coachee by bringing the infographic's contents to life. These findings highlight that these aspects need more attention in the training session as Riddell (2019) and Grant (2015) assert that coaches have a role in eradicating the use of neuromyths.

The infographic has predominantly used practitioner-level terms and this research suggests that this was well-received by both coaches and coachees. I strove to achieve this as I concur with Grant's (2015) view that there can be an overuse of jargon and that the research papers are very technical.

5.10 Limitations

This research explored the results of using the infographic within a single session and provides useful data for that initial conversation. It does not however look at the longer-term affects that emanated from this success and whether that was sustained or how to sustain it. Furthermore, this study is of a small sample size and the results may or may not replicate within the broader coaching community.

Also, by happenchance all the participants were female. Three male coaches completed the training session although they did not have the opportunity to use the infographic with a coachee and were therefore not interviewed. I am currently not aware of anything that would make this a differentiating factor for this study but it cannot be ruled out.

5.11 Summary

These coaches were keen to support the development of a new approach for helping their reflexive-hindering coachees. This was demonstrated by their commitment to the research, their advocacy for the efficacy of the infographic and their desire to see it improved and/ or their willingness to use it again. The beta testing of the infographic undertaken and the feedback provided has been thorough and has created valuable insights. These insights have led to the design of a coaching process for enhancing the coaching of reflexive-hindering coachees during a coaching session. The results have also generated a number of different considerations and topics for future training workshops that aim to reinforce its ethical as well as its practical use. Furthermore, they have provided information on how to improve the current infographic. Thus, the research has shown the infographic conversation to be a useful route to take in order to revitalise progress that is impeded by reflexive hindering. It is not intended to prescribe solutions but to open up the coachee's thinking and it has been shown to do this across a wide variety of coaching styles.

Alongside this, the results provide researched evidence of the value executive coaches found from using a tailored and practitioner-orientated neuroscience artefact. It also challenges some currently held beliefs within the coaching literature pertaining to working with coachee inner obstacles and the reductionist⁸ concerns over using a more neuroscience-based coaching approach.

⁸ A scientific theory, object, or meaning can be reduced to its individual parts. If you understand these smaller components, you will understand the larger concept. A more derogatory way to use the word is to accuse someone of trying to make something too simple through reductionism. (Source: <https://www.vocabulary.com/dictionary/reductionism>)

6 Conclusions

6.1 Introduction

In this chapter I will draw conclusions from my research with respect to its aims and objectives, the use of psychoeducation and the topic of neuroscience and coaching. I will also provide some recommendations for coaches, coaching bodies, coaching training providers and the wider coaching community. Finally, I will put forward recommendations for related future research and outline how I intend to disseminate my research findings.

6.2 Aims and objectives

The overall aim of this doctorate was to:

explore reflexive hindering in coaching and the effect that an associated neuroscience-based coaching conversation, using a purpose-developed infographic, has on coaching efficacy when reflexive hindering impedes progress

Therefore, the research objectives were to establish:

1. A deeper understanding of the concept of reflexive hindering within coaching.
2. An understanding of the coach's experience of using the neuroscience-based infographic with a coachee where the reflexive hindering is impeding progress.
3. The value derived, if any, from using the neuroscience-based infographic with respect to progressing the coaching outcomes when reflexive hindering occurs.

Objective 1 enabled me to design the infographic and describe to participants the subset of coachee required for the research. Objectives 2 and 3 enabled me to determine whether using the infographic was viable and also whether it was of benefit when coaching reflexive-hindering coachees. Furthermore, Objectives 2 and 3 also provided insights into how the infographic could be used effectively and the upgrades it requires in order to do that successfully.

6.3 Reflexive hindering

I had envisaged that Objective 1 would predominantly be fulfilled by completing the literature review. The review was informative regarding how various coaching approaches navigate coachee inner obstacles, although the literature does not appear to have an alternative name for reflexive hindering within it. There was also no substantial body of text pertinent to coachee inner obstacles. These obstacles were predominantly mentioned to a greater or lesser extent whilst describing the coaching approach but not as a specific focus of attention. There was also scant reference of the neurobiological underpinnings for these inner obstacles.

On the other hand, reflexive hindering resonated with the initial twenty-six experienced coaches with whom I conducted briefing calls (of which ten used the infographic and were subsequently interviewed) and they were interested to explore a way of helping reflexive-hindering coachees. This suggests that there is an appetite from practitioners for useful information related to this phenomenon. Overall, this research highlights a scarcity of coaching literature concerning coachee inner obstacles but also that such bodies of work can be informative and insightful for the coach, and coachee, rather than undesirable and discouraging.

Pertinent personal change and compassionate focused therapy literature emerged from the coaching literature review and I was able to take elements from this to help develop my understanding of reflexive hindering within coaching. My neuroscience reading and activities also played a significant role in developing my understanding of the neurobiological underpinnings of reflexive hindering. Together these enabled me to develop a fuller neurobiological-based definition and outline of the phenomenon, and to develop a schematic for subjectively determining the impact it is having on the coaching programme. Examples of the latter include, reduction in willingness to explore; easily deterred from taking agreed actions; current reality increasingly described as immutable; or actions progressively perceived as implausible.

This material will enable me to introduce the term 'reflexive hindering' to the coaching community in order to raise the awareness of the subset of coachees in whom it presents. The definition, outline and schematic will provide another perspective of coachees who exhibit this dynamic and aid coaches in determining a suitable coaching

stance when working with them. It therefore starts to build a body of coaching literature more explicitly dedicated to coachee inner obstacles beyond the topic of coaching readiness or coachability.

A further aim embedded in Objective 1 is that the reflexive-hindering literature begins to normalise conversations about coachee inner obstacles and to suggest pragmatic ways to work with them without it becoming therapy or problem-focused. A number of participants stated that the conversation led to a realisation by the coachee that reflexive hindering was a neurobiological aspect of how the brain functions and not a shortcoming within themselves. This was a useful shift in perspective for the coachee and enhanced the coaching efficacy. The coaching literature review demonstrated that the predominant view currently held within the coaching community on the topic of coachee inner obstacles tends to be that it is a conversation to err away from. Thus, typically, there are negative connotations and language associated with having these conversations and inadvertently a coach may convey this to their coachee. This may add to the weight already felt by the coachee for having these responses as the research suggests that they are viewed by the coachee as a personal shortcoming. However, the research findings suggest that normalising this through a neurobiological and explanatory conversation can change that perspective. This might subsequently enable some coaching approaches to have more expansive conversations on these aspects than is currently suggested in the literature.

It might also mean that some coachees who are viewed as resistant to coaching interventions are regarded differently and therefore reduce the number of coachees prematurely terminating their coaching programme. Flaherty (2005) advocates that coaches need to expand their repertoire so that when faced with a resistant coachee they have a sufficient pool of resources to draw upon. The reflexive-hindering literature may give them different insights and thus add to that repertoire.

6.4 A purposeful neuroscience-based coaching conversation

I believe that my decision to take a pragmatic stance towards the research project was useful as the participants used the infographic in a diversity of ways I had not imagined. I might otherwise have spent additional time unnecessarily honing aspects of the

infographic and its training session. Also, I could have unintentionally curbed their freedom to experiment by becoming too firm in my views about what was required. Thus overall, I felt the infographic was comprehensively beta tested and critiqued. The use of Multiple Methods allowed me to conduct phenomenologically-informed open-question interviews in conjunction with the two rating questions. The former gave rich and diverse data from the coaching sessions. The latter allowed me to get the participants to summarise their experience and the value gained. I felt this was in keeping with my constructionist epistemology and removed a source of possible researcher-bias from the results. The rating questions also provoked valuable information that had not been previously stated, as well as useful suggestions on improving the coach's and coachee's experiences during the session.

Overall, the results allowed me to substantiate my belief that raising a coachee's awareness of reflexive hindering and its neurobiological underpinnings does enhance the coaching of these coachees: that understanding to some extent what they are *up against*, namely the adaptive ability of their brain, makes a useful difference to their perception of those responses and consequently the progress they are able to make during coaching.

Additionally, synthesising the results enabled me to develop a richer coaching intervention (section 5.8, Figure 48) for coaching reflexive-hindering coachees, which was my overall research aim. It is therefore the combination of the infographic and the way that the conversation is undertaken that enhances the coaching of reflexive-hindering coachees. Ekhtiari et al. (2017) advocate including real-world practitioners in neuroeducation development and the outcome of this doctorate goes some way to endorsing their view and demonstrating the value it can add.

The neuroscience-based infographic and its narrative were significant elements in improving the coaching of reflexive-hindering coachees as anticipated. The research also provides evidence of the benefits it created for both the coachee (objective 3) and coach in that session. Overall, the research gives evidence for six benefits for coachees (section 4.7.2) from partaking in the neuroscience-based infographic conversation.

- I. An explanatory understanding of brain function that makes it real
- II. Real insights that make a difference

- III. Puts a focus on being kind to yourself and others
- IV. Creating a subject to object shift
- V. Invigorates a commitment for action
- VI. Belief or hope that change could happen

I feel it is reasonable to conclude that benefits I. and II. are precursors to achieving benefits III. to VI. given that they were cited by ten and nine coaches respectively. The others were cited by five or six coaches which suggests these are a selection of possible benefits that are more determined by the coachee and their situation. One coachee was ultimately deemed to be below the reflexive-hindering threshold for the research and the coach rated the session as 'somewhat beneficial'. This gives an indication that substantiates the choice of the threshold rating ('3-Quite noticeable', section 2.10.1, Figure 29) above which it is suggested that it is advantageous to spend the time required in undertaking the proposed MERE Coaching Conversation (Section 5.8, Figure 48).

The research has provided evidence of the value the coaches found in using the tailored neuroscience-based infographic and highlights some prerequisites for such an artefact, such as being well-referenced and credible. The coaches stated these six benefits for coaches from using the infographic:

1. Useful structure and aide-memoir
2. Created an immersive and instructive neurobiological exploration
3. Can be an easy-to-use neuroscience-based tool
4. Gave coach or coaching credibility
5. Enabled different conversations
6. A deeper understanding of neuroscience

There is a desire among the coaching community for neuroscience research related to coaching (Dias et al., 2015), particularly regarding how it affects the coachee's brain function. At the moment however the research is primarily drawn from related research into topics such as meditation (Ferrarelli, 2013; Tang, 2017), mindfulness (Davidson and Lutz, 2008; Braboszcz, 2017) and CBT (Paquette et al., 2003; Goldin et al., 2013). The exception to this is in Boyatzis' (2013) research into the parasympathetic nervous

system and the effect of coaching with compassion. However, there is less researched evidence as to the value coaches state that they derive from using neuroscience within their coaching practice. I found one research paper on the topic and that is a non-accessible thesis researching the effects of neuroscience education for life coaches (Reeves, 2019).

Thus, an unforeseen outcome from this research is that it provides evidence of the value that neuroscience can bring to an executive coach's coaching practice. I believe that benefits 1. to 5. add to this nascent body of knowledge and at present appear to be the only researched evidence related to executive coaches. Benefit 6. might seem obvious with the less-neuroscience conversant participants but was also stated by neuroscience-conversant participants. However, the infographic was designed to have depth on the topic of reflexive hindering rather than the breadth of topics covered by many neuroscience books. Therefore, it was likely that there were new aspects even to coaches well-conversed in a range of neuroscience topics as the field is substantial and diverse.

6.5 Neuroscience and coaching

When I have undertaken 'Neuroscience for coaches' workshops or read 'Neuroscience for coaches' books, I was often left with the question of 'so what?'. I understood the brain facts but was left wondering about what that actually meant for my coaching practice. This is a point echoed by Riddell (2019, p. 17) when she states "[that] just knowing which parts of the brain drive our behaviour does not advance our understanding of coaching to any great extent." Yet, this can be the thrust of many 'neuroscience for coaches' workshops and books. My view is that Cozolino (2011) and Gilbert (2013) on the other hand embed the neuroscience in service of their therapy practices and I have found their books useful regarding the practical application of neuroscience information.

I therefore designed the infographic to convey a rich picture, with each section's elements collated to deliver a message and a strong enough message to resonate. As such it is designed with the reflexive-hindering coachee in mind and therefore has a direct coaching purpose driving the design. The infographic is a distillation of neuroscience pertinent to reflexive hindering and was designed by a coaching

practitioner for other coaching practitioners. Consequently, the neuroscience elements have been chosen to illustrate a coaching phenomenon rather than to educate the coach or coachee about the brain per se. I believe I would be naïve to think that it could do the latter given the breadth and depth of neuroscience.

Each element has a role in creating the journey through the three sections such that it progressively takes the coachee through each message to arrive at the point of action in Section three. This feels as if it is more aligned to a coaching style than using some of the more stand-alone brain models often used by coaches, such as the triune brain model. This was echoed by a number of the coaches during the training sessions. They felt that the infographic pulls the information coherently together rather than being disparate brain facts.

I think this is a testament to the neuroscience education and self-learning that I have undertaken, including the Association for Coaching's (2014) 'The Science of the Art of Coaching: Neuropsychology for Coaches' programme, reading a neurobiology undergraduate textbook and attending British Neuroscience Association lectures. Furthermore, it demonstrates that a depth of understanding is required, but also that a pragmatic approach to making pertinent neurobiology accessible to coaches whilst retaining its viability is valued.

The research also challenges the predominant coaching view against the use of psychoeducation (the inputting of information) in coaching and suggests that when skilfully conducted it adds value for this subset of coachees. This would add weight to Kline (1999) and TA's (Napper and Newton, 2018) assertion that at times some insights or education from the coach can aid the coachee's thinking. This appears to be especially true from this research when,

- The coach asks the coachee's permission to do it and provides an authentic rationale for doing so.
- It resonates with coachee's goals, situation and is tailored to them.
- It is exploratory and part of the coaching conversation rather than a pure 'input' lesson on the brain.

Furthermore, the results are encouraging to coaches who fear that bringing a neuroscience-based tool/ discussion into coaching makes it transactional and

reductionist (Churchland, 2013), as the results indicate that that does not necessarily happen.

6.6 Recommendations for coaches

If coachees,

- Keep reverting back to their usual behaviour
- Are stuck on something that they say they want to change
- Realise that they are getting in the way of their own progress
- Understand what they need to do but only do small aspects and reiterate that it is difficult to change
- Have negative thoughts/assumptions or unhelpful emotional responses that they seem unable to avert

then they could be hampered by reflexive hindering rather than being resistant to coaching or having low coachability. It would be worth understanding more about the concept of reflexive hindering, how melded the coachee is with their experience and therefore how immutable it feels. It is possible however to change the above situations by following the MERE Coaching Conversation (section 5.8, Figure 48). This raises the coachee's awareness of these following aspects and according to this research is beneficial to do.

- Coaching seeks to explore the situation including what helps or hinders the coachee's progress. I would advocate, from this research, it is worth adding in related brain aspects and some of the brain's limitations as well. Then the coachee has an appreciation of how they may nonconsciously hinder themselves and can thus make more informed choices.
- It would also be helpful for coachees to appreciate that a seemingly innate response is probably a learned neurobiological response at a time when they were not fully aware of it happening. This information should create a firmer basis for believing that change is possible - that *who they are* is not as immutable as it appears. In addition, it is also helpful for them to appreciate

the short and long-term neurobiological effects that these responses can typically create.

- Finally, it could be beneficial if coachees realistically thought about what it takes to achieve some of the changes on a practical level (to modify neural pathways through deliberate adaptation). Also, to consider how to mitigate some of the short-term increased reflexive-hindering responses that this could create.

Other recommendations for coaches.

- Ensure neuroscience material is well-referenced and credible as this is important to coachees. It was also cited as enhancing the coach's credibility and that of their coaching. Furthermore, attempt to keep relatively up-to-date with the neuroscience and its current status for the aspects being using. When in doubt, or if there are conflicting views, think about how this can be suitably positioned with the coachee such that it does not undermine the coaching nor overstate the neuroscience.
- Neuromyths abound and there are several accessible articles and books that reference them. It could also form an interesting supervision discussion as sometimes these neuromyths are well-embedded and the fact they are deemed myths might seem questionable. Understanding these gives coaches an opportunity to play a part in eradicating them.
- Make neuroscience interventions meaningful to the coaching outcomes so they address the 'so what?' question. Plan how the conversation resonates with the coachee's situation and maybe use more than one neuroscience model or fact. Once planned, assess what this neuroscience insight might enable the coachee to do differently and adjust the intervention until there is a satisfactory answer. Afterwards, reflect on the intervention - what worked and should be repeated and what needs to be different next time.
- An explanatory voice was welcomed by the participants and they felt it worked well with their coachees. Therefore, think about how to reduce the amount of anthropomorphism and 'good verses bad' characterisation that often

accompanies models and facts of the brain. The infographic also uses very little neuroscientific language, such as naming brain areas like the ‘basal ganglia’ or ‘periaqueductal gray’, and this does not appear to detract from its use.

- Some coachees prefer more factual rather than conceptual explanations and neuroscience lends itself to these coachees, who are often STEM-trained and/or practical people.
- Consider whether the neuroscience input is erring too far towards a one-way education session as it does not need to become a purely cognitive learning exercise. The research demonstrated that it is beneficial if it is an exploratory coaching conversation by being simultaneously instructive and immersive.
- Professionally produced and informative neuroscience information appears to allow the coachee to disclose meaningful insights. Perhaps this is because it enables a conversation directed towards the neuroscience information rather than conversing directly with the coach and thus engenders a more objective stance. Although some coaches also drew other diagrams as the discussions emerged, many cited the fact that the infographic was professionally produced as adding to its authority and credibility.
- A neuroscience understanding may give a coach a way of introducing the fact that a coachee’s formative years are affecting their current behaviour, in a way which comfortably does not err towards being therapy. I also believe the use of an explanatory voice helps with maintaining this safe ground.
- Know enough to be flexible when using neuroscience information and to know when it is moving away from solid ground – know its limits and be comfortable with that.
- I would also add my voice to that of Riddell’s (2019) and encourage coaches to maintain their neuroscience capability through various activities. Also, to question whether they have a broad enough view of neuroscience to understand the context of what is read and whether it should be explored more thoroughly. There is a reasonable amount of accessible neuroscience material now available beyond the title of ‘neuroscience for coaches’. I would encourage coaches to explore some of these resources and to read about the field of neuroscience as

much as about learning about the brain. I found it a very grounding experiencing, although I would argue that all coaches do not need to act as expansively as I did. Nonetheless I would advocate that within the realm of professional responsibility a coach needs to be diligent enough.

- Recommended reading. (In bold – collectively provides a good overview)

Title	Author
30-second brain: the 50 most mind-blowing ideas in neuroscience, each explained in half a minute	Seth et al. (2013)
The brain (a book or six one-hour programmes)	Eagleman, D. (2015)
Neuroscience for dummies	Amthor, F. (2016)
Your brain, explained: what neuroscience reveals about our brain and its quirks	Dingman, M. (2019)
Neuro: the new brain sciences and the management of the mind	Rose, N.S. (2013)
The myth of mirror neurons	Hickok, G. (2014)
How the mind works	Pinker, S. (2015)
The tell-tale brain: unlocking the mystery of human nature	Ramachandran, V.S. (2012)
Touching a nerve: our brains, our selves	Churchland, P.S. (2014)
How emotions are made: the secret life of the brain	Barrett, L.F. (2018)
Sleights of mind	Macknik, S.L., Blakeslee, S. and Martinez-Conde, S. (2010)
Connectome: how the brain's wiring makes us who we are	Seung, S. (2012)
The brain that changes itself: stories of personal triumph from the frontiers of brain science	Doidge, M., Norman (2008)
We are our brains: from the womb to alzheimer's	Swaab, D.F. and Hedley-Prôle, J. (2014)
The neuroscience of psychotherapy: healing the social brain	Cozolino, L.J. (2017)
Consciousness and the brain: deciphering how the brain codes our thoughts	Dehaene, S. (2014)
Synaptic self: how our brains become who we are	LeDoux, J.E. (2002)
The deep history of ourselves: the four-billion-year story of how we got conscious brains	LeDoux, J.E. (2019)
Two-minute neuroscience videos for the neuroscientifically challenged	Dingman, M. (on-going)

Overall, the participants were initially nervous but they produced some beneficial results once they relaxed. One participant said that she enjoyed the coaching session as she was not trying to be a neuroscientist and she told her coachee that. Thus, I would say to coaches: ‘Embrace neuroscience and be a coach rather than a neuroscientist, relax, engage your enthusiasm for where it could take your coachee, and use neuroscience on your terms.’

6.7 Recommendations for other coaching stakeholders

6.7.1 Recommendations for coaching bodies

The codes of ethics for a number of coaching bodies (ICF, 2005; AC, 2012; EMCC, 2015; APECS, 2018) contain statements referring to the coach acting in a way that upholds the reputation of the field of coaching and refraining from intentionally using misleading information. The literature review on the other hand threw light on the questions of ethics and terminology with respect to the use of neuroscience by the coaching community. Therefore, I believe this research raises a question about the role of those bodies with respect to neuroscience and coaching. Thus, it might be beneficial for the field of coaching if the coaching bodies proactively raised the awareness of, or even educated coaches on, these three aspects.

- Enhance coaches’ appreciation of the full scope and nature of the field of neuroscience as well as its realities. For example, that results are often more interpreted than perceived and that the lack of published null results can skew perception.
- Advocate the need to eradicate the use of neuromyths, to be wary of the hype neuroscience can attract and to reduce the amount of neuroscience embellishment within the field of coaching.
- Create an on-going discussion about neuroscience’s ethical and considered use in coaching.

6.7.2 Recommendations for coaching training providers

Coaching training has blossomed alongside the growth of the coaching industry and therefore plays an influential role within the coaching community (Maritz, 2013; Moore,

2007). I therefore believe it also has a role within the ‘coaching and neuroscience’ conversation and would suggest that it would be beneficial if providers,

- Had quality conversations on the nature of the field of neuroscience and its realities (as for coaching bodies above) so as to set the context for subsequent neuroscience input during the training programme and its considered use within a coaching practice.
- Removed the use of neuromyths and hype from their programmes.
- Used an explanatory voice wherever possible and to consider how they appropriately position caricatured neuroscience-based coaching models. For example, stating the controversy surrounding the triune brain model and presenting its currently more acceptable integrated version with neurobiological labels.

6.7.3 Recommendations for the coaching community

Often coaches use models and information taken from neuroscience and sometimes the answer to the ‘so what’ question is tenuous. I would advocate that coaches with a reasonably deeper understanding of some aspects of neuroscience could design useful neuroscience-based artefacts for specific coaching requirements. In doing so they are likely to keep a coaching focus and thus the answer to the ‘so what’ question is much likely to be clearer. I also believe it might start to change the current (proverbial) ‘tail wagging the dog’ situation so that coaching governs its use of neuroscience rather than neuroscience inundating coaching.

Also, I recommend that it is time to acknowledge that coachees sharing some aspects of their formative years in an explanatory way can be insightful learning and normalising rather than being therapy. It feels as if it is time to remove the seemingly taboo nature of this topic as formative years can be important for informing coachees about their current behaviour.

6.8 Recommendations for future research

From this doctorate I would recommend the following future research.

- Further improvements to the MERE Coaching Conversation and infographic could be made by researching the coachee's experience of the session and the use of the infographic within it. It would also obtain evidence from the coachees themselves as to the value they felt they derived, if any, from the session.
- Further research into the concept of reflexive hindering could be used to hone the MERE Coaching Conversation, verify the reflexive-hindering schematic and highlight other pertinent coaching interventions. The aim would be to further enhance the effectiveness of coaching these coachees and the corresponding benefits for their organisations.
- This research demonstrated that the infographic created useful benefits in the one session in which it was used. The next step therefore would be a longitudinal study to investigate how this can be sustained across a coaching programme. This might also elucidate the way in which reflexive hindering manifests whilst initial changes are attempted and would add to the initial reflexive-hindering literature generated by this research.
- A tangential piece of research could be to investigate explicitly the value gained by executive coaches from using neuroscience within their coaching practice. Overall, I feel that it could be insightful and influence how neuroscience is used within coaching.

6.9 Disseminating the research

The reason that I wanted to complete this research was so that I could enhance my coaching of this subset of coachees. I believe I now have the capability to do that once I have updated the infographic and fully detailed the MERE Coaching Conversation. This research also highlights the desire of other coaches who similarly want to help their reflexive-hindering coachees move forwards. They may be interested to hear about my findings and the MERE Coaching Conversation.

Furthermore, I feel that I have something to say on the topics of reflexive hindering and the use of an explanatory voice when talking about facets of the brain within coaching. Therefore, I would like to disseminate my research in the following ways.

- Publish my literature review as an article in a peer-reviewed coaching journal.

- Write a practitioner article on reflexive hindering for the coaching community and publish it in a practice journal.
- Bring reflexive hindering to the attention of the coaching community through presentations at coaching conferences and/or coaching body professional development events.
- Create a two-day training workshop for the MERE Coaching Conversation, including an updated version of the infographic.

Ultimately, I would like to teach this as part of a post-graduate coaching qualification of some nature. I believe this would enable me to affect some of the suggestions that I have from this doctorate in a sustainable and impactful manner.

7 Personal reflections

7.1 Introduction

I have learned a lot from completing this doctorate and I am grateful for that. I am also grateful to those who have facilitated and supported that happening. In this chapter I reflect upon my key learning points and the differences they have made to my coaching practice.

7.2 Being accountable

There has been a strong theme throughout this journey on being held to account for the thoroughness and robustness of what I am about to say or write - not in a detrimentally fastidious fashion but in a manner that opens my eyes to the wider context and ensures that I am respectful about what I write. It also ensures that I know I am on firmer ground when it comes to substantiating my thoughts. This is partly about removing whimsical opinion and partly about gathering robust material for what remains. I have often found that in going through this process I end up at a different place than I had originally intended and invariably that has been beneficial.

Holding myself to account as I know others will do has made me pause, stand back and consider a different perspective - to consider more views and questions and to reflect upon those just a little longer than I might have done beforehand. I have noticed this shift subsequently happened in my professional stakeholder management and in my coaching. Hence, I am a little more considered and a little more probing for what is behind what is said or requested. I now feel more grounded and willing to stand on that ground a little longer than previously. It has certainly reduced some work stress by clearing away elements of ambiguity. I have also begun to give more considered feedback to my stakeholders which they have also found valuable.

7.3 Appreciating the value of each chapter's topic

The significance of each aspect of the doctorate became apparent as I undertook writing each chapter and I have valued the benefits each one brings to my research. I

have to admit that initially this was less welcomed as it appeared to constrain me. I therefore felt a tension between getting on with data collection and some of the requirements of completing a doctorate. However, I discovered that it enabled some powerful thinking and amendments to my work. I now appreciate that Pragmatism has a preference for maintaining focus on what is useful for progressing real world actions and for not getting distracted by things that it might cite as unnecessary (Talisie and Aikin, 2008; James, 2019). I think this articulates the tension that I initially felt, although in undertaking each chapter I have realised for myself the real value that each has added. The principal example of this is the literature review. This shifted – transformed itself - from purely substantiating the need for the research to fundamentally shaping the research, the use of the infographic and the concept of reflexive hindering. I learned a powerful lesson in what a literature review can really do, especially for nascent theory research.

Consequently, useful aspects have emerged through my own internal arguments with each chapter's topic. Invariably when I was most at odds with the point the topic made, it caused me to pull back and realistically assess what the application of it meant for my research. In doing so I have found that the superfluous aspects reduced and the useful elements became apparent. Eventually, I came to embrace this dynamic and to work with it and through it.

The exploration and reflection connected to the topics of ontology and epistemology have broadened my awareness and thinking about the nature of knowledge, truth, meaning and reality. They were very thought-provoking and provided invaluable insights for my own personal and professional development by adding another layer of depth to the ways in which I consider how I and other people view the world. This has deepened my compassion, openness and honest acceptance of my coachee, their views and their reality. It has similarly enabled me to help some of my coachees understand the point of view of others, especially where that view conflicts with a coachee's more deeply held belief.

Furthermore, I had not really thought about how the methods chosen for data collection and the nature of the questions affect the knowledge created. I believe there are some considerations here for future 360 feedback interviews and facilitated business sessions. For example, what are the implications of conducting

phenomenologically-informed 360 feedback interviews verses more structured ones, and how appropriate is that for the coachee's development outcomes.

7.4 Self-development

It also has to be said that I have learned a lot about writing at this level and in this way. My prior writing experience had been that of writing reports as an engineer, which is more quantitative in style or, towards the other extreme, when I wrote my book. This is more conversational and it is almost written as if I am training the material in person. I am appreciative of the support my supervisors have given me with this and of a few instances of tough feedback when attempting to get my proposals approved. I conscientiously strove to define my writing style at this level and was pleased when this hard work paid off. The feedback on this topic when I submitted my first draft chapter was very positive. I have noticed that it has now percolated into much of my other writing as I catch myself amending my old style to the new one. I think this adds credibility and robustness to those texts and I am confident there is more to learn.

Reading about the field of neuroscience and of psychology was enlightening. I had imagined that both were more comprehensive and certain than has become apparent from my reading. In the coaching community it is easy to believe that psychology has the topic of human nature comprehensively covered. Therefore, I was intrigued to read about the way in which wealthy benefactors and other cultural influences have determined its course of development to a large extent. This is not to belittle the work and research that has and is being completed by both fields. It is for me to remove the 'absoluteness' from my belief, to appreciate the humanness of the endeavour and to investigate a little deeper behind what is presented.

It has also been valuable to have been required to read more broadly about different coaching approaches as I now have a broader perspective of the field. I found it refreshing to see the diversity of approaches and what they consider acceptable as many of those aspects sat well with me. I think the conversations I have been previously exposed to have been more purist and strongly advocate a 'sit, listen and only ask questions' style of coaching. What I have discovered is that there is more than that view advocated and I feel more assured about my own coaching style from having read widely.

I enjoyed the involvement of the experienced coaches and the diversity they brought to the research. I was also humbled by both their commitment to the research they undertook and their personal feedback to me about the value of this work. Whilst I am not sure that I am fully ready for a true Action Research based methodology, I felt that both parties, myself and the coaches, brought real added-value to the whole process. Both parties had their roles: I felt I gave them a credible draft infographic to start with. I felt that in return they gave it a very thorough test-run and a solid critique. Overall, I was glad that I had put in the upfront neuroscience effort and this is one reason that I felt that the terminated Delphi Study was of value. I have also valued using colleagues, academic and coaching, to aid my thinking and provide 'critical friend' views on certain aspects. Across the course of the doctorate I have improved my judgement of when and how to do that so it is a useful experience for both of us.

One of the characteristics I would like to take away from this academic study is the matter of fact exchange of questioning and information. This conveys the feeling of 'I am not judging you personally, I want to understand what you are saying or espousing and to check out where its boundaries are – I am genuinely interested in what you have found out/ want to find out'. It feels adult and realist which is in contrast to much of the business world, where often forcefulness can be the deciding factor and judgments are personally intended.

A mentor said to me that a doctorate is akin to running a marathon and for me this was an accurate analogy. Having started off rather quickly, I have learned to pace myself and to embrace all the facets required as marathons are so much more than just a longer run – physically and mentally. Like a marathon, there have been highs and lows, tough moments and good small wins. But overall, I am glad that I have stayed the course as I am stronger for it, both personally and professionally.

8 References

- Adams, L. (n.d.) 'Learning a New Skill is Easier Said Than Done', *Gordon Training International*. Available at: <https://www.gordontraining.com/free-workplace-articles/learning-a-new-skill-is-easier-said-than-done/> (Accessed: 25 June 2020).
- Alexander, G. (2010) 'Behavioural coaching - the GROW model' in Association of Coaching and Passmore, J. (ed.) *Excellence in coaching: the industry guide*. 2nd edn. London: Kogan Page.
- Allan, J. and Whybrow, A. (2019) 'Gestalt coaching' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Amthor, F. (2014) *Neurobiology for dummies*. Hoboken, New Jersey: John Wiley and Sons, Inc.
- Amthor, F. (2016) *Neuroscience For Dummies*. 2nd edn. Hoboken, New Jersey: John Wiley and Sons, Inc.
- Aquilina, E. and Strozzi-Heckler, R. (2019) 'Somatic coaching' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Armstrong, S.J. (2011) 'From the Editors: Continuing Our Quest for Meaningful Impact on Management Practice', *Academy of Management Learning & Education*, 10(2), pp. 181-188.
- Association for Professional Executive Coaching and Supervision (APECS) (2018) *Ethical Guidelines*. Available at: <https://www.apecs.org/ethical-guidelines> (Accessed: 30 July 2020).
- Association of Coaching (2012) *AC Coaching Competency Framework Revised June 2012*. Available at: https://cdn.ymaws.com/www.associationforcoaching.com/resource/resmgr/Accreditation/Accred_General/Coaching_Competency_Framework.pdf (Accessed: 4 April 2019).

- Athanasopoulou, A. and Dopson, S. (2018) 'A systematic review of executive coaching outcomes: Is it the journey or the destination that matters the most?', *The Leadership Quarterly*, 29(1), pp. 70-88.
- Bachkirova, T. (2009) 'Cognitive-developmental approach to coaching: an interview with Robert Kegan', *Coaching: An International Journal of Theory, Research and Practice*, 2(1), pp. 10-22.
- Bachkirova, T. (2011) *Developmental coaching working with the self*. Maidenhead, Berkshire, England: Open University Press.
- Bachkirova, T. (2018) 'Three conceptions of the self for applied purposes', *Radar: Institutional repository of Oxford Brookes University*. [Image] Available at: <https://radar.brookes.ac.uk/radar/file/1032a5c5-4180-4e55-a907-eb30d994588c/1/Three%20conceptions%20of%20self-%20Poster%20.pdf> (Accessed: 7 March 2020)
- Bachkirova, T. and Baker, S. (2019) 'Revisiting the issue of boundaries between coaching and counselling' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Bacon, T.R. and Wise, P. (2011) 'Appendix: Korn/Ferry Coachability Model', in Bacon, T.R. *Measuring the effectiveness of executive coaching*. London: Korn Ferry Institute.
- Bacon, T.R. and Voss, L. (2012) *Adaptive coaching: the art and practice of a client-centered approach to performance improvement*. 2nd edn. Boston: Nicholas Brealey International.
- Barnard, P. and Teasdale, J. (1993) *Affect, Cognition and Change: Re-Modelling Depressive Thought*. 1st edn. London: Psychology Press.
- Barrett, L.F. (2018) *How emotions are made: the secret life of the brain*. Paperback edn. London: Pan Books.
- Beck, A.T. (1970) *Depression: causes and treatment*. Philadelphia, PA: University of Pennsylvania Press.
- Beck, A.T. and Clark, D.A. (1997) 'An information processing model of anxiety: Automatic and strategic processes', *Behaviour research and therapy*, 35(1), pp. 49-58.

'Beta test' (2020) Available at: https://www.lexico.com/definition/beta_test (Accessed: 12 January 2020).

Bishop, P.A. and Herron, R.L. (2015) 'Use and Misuse of the Likert Item Responses and Other Ordinal Measures', *International journal of exercise science*, 8(3), pp. 297-302.

Bluckert, P. (2018) 'The Gestalt Approach to Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.

Boniwell, I. and Kauffman, C. (2018) 'The Positive Psychology Approach to Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.

Bowman, M., Ayers, K.M., King, J.C. and Page, L.J. (2013) "The Neuroscience of Coaching" in *The Wiley-Blackwell Handbook of the Psychology of Coaching and Mentoring*. Oxford, UK: John Wiley & Sons, Inc.

Boyatzis, R.E. and Jack, A.I. (2018) 'The neuroscience of coaching', *Consulting Psychology Journal: Practice and Research*, 70(1), p. 11.

Boyatzis, R.E., Smith, M.L. and Beveridge, J. (2012) 'Coaching with compassion: Inspiring health, well-being, and development in organizations', *The Journal of applied behavioral science*, 49(2), pp. 153-178.

Boyatzis, R.E, Smith, M.L. and Van Oosten, E. (2019) *Helping People Change: Coaching with Compassion for Lifelong Learning and Growth*. Boston, Massachusetts, USA: Harvard Business Press.

Braboszcz, C. (2017) 'Increased Gamma Brainwave Amplitude Compared to Control in Three Different Meditation Traditions', *PLoS ONE*, 12(1), pp. 1-28.

Branch, R. and Willson, R. (2007) *Cognitive Behavioural Therapy Workbook for dummies*. 1st edn. Chichester, England: John Wiley & Sons, Inc.

Brann, A. (2014) *Neuroscience for Coaches*. 1st edn. Great Britain: Kogan Page.

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative research in psychology*, 3(2), pp. 77-101.

Brewin, C.R. (2001) 'A cognitive neuroscience account of posttraumatic stress disorder and its treatment', *Behaviour research and therapy; Behav Res Ther*, 39(4), pp. 373-393.

- Brewin, C.R. & Holmes, E.A. (2003) 'Psychological theories of posttraumatic stress disorder', *Clinical psychology review; Clin Psychol Rev*, 23(3), pp. 339-376.
- Brewin, C.R. et al. (2010) 'Intrusive images in psychological disorders: characteristics, neural mechanisms, and treatment implications.', *Psychological review*, 117(1), pp. 210.
- British Neuroscience Association (2018) *Neuromyths, and the science behind them: BNA Christmas Symposium*. The Strand Campus, Kings College London University, London, 17 December. Available at: <https://www.bna.org.uk/mediacentre/events/xmassymposium2018/> (Accessed: 20 February 2020)
- Brown, P. and Brown, V. (2012) *Neuropsychology For Coaches: Understanding The Basics*. 1st edn. Great Britain: Open University Press.
- Brown, P. and Brown, V. (2014) 'Neuropsychology for Coaches' [Workshops]. *Association of Coaching's Science of the Art of Coaching Programme*. NVCO Business Centre, London. September 2014- June 2015.
- Burch, N. (1970) *Conscious Competence Learning Model: Four stages of learning theory- unconscious incompetence to unconscious competence matrix-and other theories and models for learning and change*. Gordon Training International internal document. Unpublished
- Carolina Biological Supply Company (n.d.) 'Human Body: Respiratory System', *Carolina* [Infographic]. Available at: <https://www.carolina.com/teacher-resources/Interactive/human-body-respiratory-system/tr41048.tr> (Accessed: 27 June 2020).
- Carson, S. and Tiers, M. (2014) *Keeping the Brain in Mind: Practical Neuroscience for Coaches, Therapists, and Hypnosis Practitioners*. New York: Changing Mind Publishing.
- Cesario, J., Johnson, D.J. and Eisthen, H. (2019) 'Your Brain Is Not an Onion with a Tiny Reptile Inside', *Current Directions in Psychological Science*, 29(3), pp. 255-260.
- Cherryholmes, C.H. (1992) 'Notes on Pragmatism and Scientific Realism', *Educational Researcher*, 21(6), pp. 13-17.
- Chia, R. 2002, "The Production of Management Knowledge: Philosophical Underpinnings of Research Design" in Partington, D. (ed.) *Essential Skills for Management Research*. London: SAGE Publications Ltd.

- Chimp Management Ltd (n.d.) 'What is the Chimp model?', *Chimp Management Ltd* [Image]. Available at: <https://chimpmanagement.com/> (Accessed: 12 March 2020).
- Churchland, P.S. (2014) *Touching a nerve: our brains, our selves*. New York: W.W. Norton & Company.
- Clutterbuck, D. (2010) 'Coaching reflection: the liberated coach', *Coaching: An International Journal of Theory, Research & Practice*, 3(1), pp. 73-82.
- Coach Simona (2020) 'Self-Sabotaging Thoughts? Overcome Resistance', *Coach Simona* [blog]. 31 January. Available at: <https://coachsimona.com/blog/self-sabotaging-thoughts/> (Accessed: 29 April 2020).
- Coghlan, D. and Brannick, T. (2005) *Doing action research in your own organization*. 2nd edn. London: Sage.
- CompassPoint Nonprofit Service (2010) *Coaching Readiness Questionnaire*. Available at: <https://www.compasspoint.org/sites/default/files/documents/ReadinessQuestionnaire.pdf> (Accessed: 3 April 2019).
- Costa, P.T. and MacCrae, R.R. (1992) *Revised NEO personality inventory (NEO PI-R) and NEO five-factor inventory (NEO-FFI): Professional manual*. Odessa, FL: Psychological Assessment Resources, Incorporated.
- Cox, E. & Bachkirova, T. (2007) 'Coaching with emotion: How coaches deal with difficult emotional situations', *International Coaching Psychology Review*, 2 pp. 178-189.
- Cox, E., Bachkirova, T. and Clutterbuck, D. (2014) 'Theoretical traditions and coaching genres: Mapping the territory', *Advances in developing human resources*, 16(2), pp. 139-160.
- Cox, E., Bachkirova, T. and Clutterbuck, D. (2018) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.
- Cozolino, L.J. (2017) *The neuroscience of psychotherapy: healing the social brain*. 3rd edn. New York: W.W. Norton & Company.
- Crain, W. (2014) *Theories of development concepts and applications*. 6th edn. Harlow, England: Pearson Education Limited.

- Crampton, M. (2000). 'Empowerment of the will through life coaching'. *Psychosynthesis*. Available at: <http://two.not2.org/psychosynthesis/articles/coach.htm> (Accessed: 3 March 2020)
- Creswell, J.W. (2009) *Research design: qualitative, quantitative, and mixed methods approaches*. 3rd edn. Thousand Oaks: SAGE Publications.
- Crews, F. (2017) *Freud: The making of an illusion*. Great Britain: Profile Books Ltd.
- Crotty, M. (1998) *The foundations of social research: meaning and perspective in the research process*. London: SAGE.
- Curran, A.S. (2008) *The little book of big stuff about the brain: the true story of your amazing brain*. Bancyfelin, Wales: Crown House Publishing.
- Damasio, A.R. (2000) *The feeling of what happens: body and emotion in the making of consciousness*. London: Vintage.
- Damasio, A. (2010) *Self comes to mind: Constructing the conscious brain*. London: Vintage.
- Davidson, R.J. and Lutz, A. (2008) 'Buddha's brain: Neuroplasticity and meditation [in the spotlight]', *IEEE Signal Processing Magazine*, 25(1), pp. 176-174.
- de Haan, E. and Sills, C. (eds) (2012) *Coaching relationships: The relational coaching field book*. Farringdon: Libri Publishing.
- de Haan, E., Culpin, V. and Curd, J. (2011) 'Executive coaching in practice: what determines helpfulness for clients of coaching?', *Personnel Review*, 40(1), pp. 24-44.
- Dehaene, S. (2014) *Consciousness and the brain: Deciphering how the brain codes our thoughts*. New York, USA: Penguin.
- Depue, R.A. & Morrone-Strupinsky, J.V. (2005) 'A neurobehavioral model of affiliative bonding: Implications for conceptualizing a human trait of affiliation', *Behavioral & Brain Sciences*, 28(3), pp. 313-395.
- Dias, G.P. et al. (2015) 'Perspectives and challenges for the study of brain responses to coaching: enhancing the dialogue between the fields of neuroscience and coaching psychology', *Coach Psychol*, 11 pp. 11-19.

- Dingman, M. (2019) *Your brain, explained: what neuroscience reveals about our brain and its quirks*. London: Nicholas Brealey Publishing.
- [Director of Neuroscience] (2019) Phone conversation with Deni Lyall, 11 July.
- Dixit, P. and Dixit, P. (2018) 'Applications of Neuroscience in Coaching', *NHRD Network Journal*, 11(4), pp. 56-62.
- Donker, T. *et al.* (2009) 'Psychoeducation for depression, anxiety and psychological distress: a meta-analysis', *BMC medicine*, 7(1), pp. 79.
- Drake, D. (2018) 'Narrative Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.
- Duff, S. and Kinderman, P. (2006) 'An interacting cognitive subsystems approach to personality disorder', *Clinical psychology and psychotherapy*, 13(4), pp. 233-245.
- Dunbar, A. (2016) *Clean coaching: the insider guide to making change happen*. London: Routledge.
- Eckert, M. *et al.* (2016) 'Overcome procrastination: Enhancing emotion regulation skills reduce procrastination', *Learning and Individual Differences*, 52 pp. 10-18.
- Edmondson, A.C. and McManus, S.E. (2007) 'Methodological Fit in Management Field Research', *The Academy of Management Review*, 32(4), pp. 1155-1179.
- Ekhtiari, H. *et al.* (2017), 'Neuroscience-informed psychoeducation for addiction medicine: A neurocognitive perspective' in *Progress in brain research*, 235, pp. 239-264.
- Ellam-Dyson, V. and Palmer, S. (2010) 'Rational coaching with perfectionistic leaders to overcome avoidance of leadership responsibilities', *The coaching psychologist*, 6(2), pp. 5-11.
- EMCC (2015) *Coach Accreditation/ Credentialing Requirements*. Available at: <https://emcc1.app.box.com/s/ryvg44bshj9vcig0ee69gxp7cejngs3b> (Accessed: 30 July 2019)
- Fenn, K. and Byrne, M. (2013) 'The key principles of cognitive behavioural therapy', *InnovAiT*, 6(9), pp. 579-585.

- Ferrarelli, F. (2013) 'Experienced Mindfulness Meditators Exhibit Higher Parietal-Occipital EEG Gamma Activity during NREM Sleep', *PLoS ONE*, 8(8), pp. 1-10.
- Finez, L. & Sherman, D.k. (2012) 'Train in Vain: The Role of the Self in Claimed Self-Handicapping Strategies', *Journal of Sport & Exercise Psychology*, 34(5), pp. 600-621.
- Flaherty, J. (2005) *Coaching: evoking excellence in others*. 2nd edn. Burlington, USA: Butterworth-Heinemann.
- Flora, K. (2017) *Can We Really Change? In Other Words, Can Coaching Really Work?* [Image]. Available at: <https://www.ajoconnor.com/blog/can-we-really-change#:~:text=Drawing%20on%20forty%20years%20of,takes%20real%20self%20Dreflection%20and> (Accessed: 7 March 2020).
- Franceschini, F. and Rupil, A. (1999) 'Rating scales and prioritization in QFD', *The International Journal of Quality & Reliability Management*, 16(1), pp. 85-96.
- Franklin, J. (2005) 'Change Readiness in Coaching: Potentiating Client Change' in M. Cavanagh, A., Grant and T. Kemp (eds) *Evidence-based coaching: Volume 1, Theory, research and practice from the behavioural sciences*. 1st edn. Australia: Australian Academic Pres.
- Frontiers Media, S.A. (n.d.) 'About', *frontiers in neuroscience* [webpage text]. Available at: <https://www.frontiersin.org/journals/neuroscience#about> (Accessed: 7 March 2020).
- Gastelum, J. (2013) 'Research Paper: Resistant Clients - How To Identify And Work With Them', International Coach Academy, 15 November. Available at: <https://coachcampus.com/coach-portfolios/research-papers/jennifer-gastelum-resistant-clients-how-to-identify-and-work-with-them/> (Accessed: 21 February 2020)
- Gilbert, P. (n.d.) 'Introducing compassion-focused therapy', *The Compassionate Mind Foundation* [Workshop slides]. Available at: <https://www.compassionatemind.co.uk/uploads/files/introduction-to-compassion-focussed-therapy.pdf> (Accessed: 27 February 2020).
- Gilbert, P. (1998) 'Evolutionary psychopathology: Why isn't the mind designed better than it is?', *British Journal of Medical Psychology*, 71(4), pp. 353-373.

- Gilbert, P. (2009) 'Introducing compassion-focused therapy', *Advances in psychiatric treatment*, 15(3), pp. 199.
- Gilbert, P. (2010) 'Training Our Minds in, with and for Compassion: An Introduction to Concepts and Compassion-Focused Exercises', *GET.gg*. Available at: <https://www.getselfhelp.co.uk/docs/GILBERT-COMPASSION-HANDOUT.pdf> (Accessed: 8 March 2020).
- Gilbert, P. (2013) *The compassionate mind: a new approach to life's challenges*. London: Constable.
- Gilbert, P. (2014) 'The origins and nature of compassion focused therapy', *British Journal of Clinical Psychology*, 53(1), pp. 6-41.
- Gillie, M. and Shackleton, M. (2009) 'Gestalt coaching or gestalt therapy: Ethical and professional considerations on entering the emotional world of the coaching client', *Gestalt Journal*, 32(1), pp. 173.
- Goldin, P.R. et al. (2013) 'Impact of cognitive behavioral therapy for social anxiety disorder on the neural dynamics of cognitive reappraisal of negative self-beliefs: randomized clinical trial', *JAMA psychiatry*, 70(10), pp. 1048-1056.
- Grant, A.M. (2010) 'Solution-focused coaching' in Association of Coaching and Passmore, J. (ed.) *Excellence in coaching: the industry*. 2nd edn. London: Kogan Page.
- Grant, A.M. (2015) 'Coaching the brain: Neuro-science or Neuro-nonsense?', *The Coaching Psychologist*, 11(1), pp. 31-37.
- Grant, A.M. (2019) 'Solution-focused coaching: The basics for advanced practitioners', *Coaching Psychologist*, 15(2), pp. 44-54.
- Grant, A.M. and Cavanagh, M.J. (2018) 'The Solution-Focused Approach to Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.
- Grant, A.M. and Gerrard, B. (2019) '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*, 3 April. DOI: 10.1080/17521882.2019.1599030.

- Gray, D.E. (2014) *Doing research in the real world*. 3rd edn. London: SAGE Publications.
- Green, S. and Palmer, S. (2019) *Positive psychology coaching in practice*. Abingdon, UK: Routledge.
- Greene, J. and Grant, A.M. (2003) *Solution-focused coaching: Managing people in a complex world*. Great Britain: Pearson Education.
- Grimley, B. (2018) 'The NLP Approach to Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.
- Grimley, B. (2019) 'Neuro Linguistic programming (NLP) and coaching' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Grimley, D. et al. (1994) 'The transtheoretical model of change', *Changing the self: Philosophies, techniques, and experiences*, pp. 201-227.
- Groenewald, T. (2004) 'A Phenomenological Research Design Illustrated', *International Journal of Qualitative Methods*, 3(1), pp. 42-55.
- Grover, S. and Furnham, A. (2016) 'Coaching as a Developmental Intervention in Organisations: A Systematic Review of Its Effectiveness and the Mechanisms Underlying It', *PLoS One*, 11(7), pp. e0159137.
- Haldane, D. (2015) 'The Chimp Paradox', *Occupational Medicine*, 65(6), pp. 509-509.
- Hancock, E. (2020) 'How And Why We Engage in Self-sabotaging Behavior', *Beyond You Coaching* [blog]. Available at: <https://www.beyondyou.coach/self-sabotaging-behavior/> (Accessed: 29 April 2020).
- Harakas, P. (2013) 'Resistance, motivational interviewing, and executive coaching', *Consulting Psychology Journal: Practice and Research*, 65(2), pp. 108-127.
- Hardingham, A. (2006) 'The British eclectic model in practice', *International Journal of Mentoring and Coaching*, 4(1), pp. 22-26.
- Hart, E.W. and Kirkland, K. (2001) *Using your executive coach*. Greensboro, N.C.: Center for Creative Leadership.

Harvey, C. (2018) 'Family psychoeducation for people living with schizophrenia and their families', *BJPsych Advances*, 24(1), pp. 9-19.

Hawkins, P. and Smith, N. (2006) *Coaching, mentoring and organizational consultancy: supervision and development*. Maidenhead: Open University Press.

Hawkins, P. and Smith, N. (2018) 'Transformational Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.

'Hesitant' (2019) Available at: <https://www.lexico.com/definition/hesitant> (Accessed: 1 April 2019).

Hickok, G. (2014) *The Myth of Mirror Neurons*. New York, USA: W.W. Norton & Company Ltd.

'Hinder' (2019) Available at: <https://www.lexico.com/definition/hinder> (Accessed: 1 April 2019).

Hogan, R., Hogan, J. and Warrenfeltz, R. (2007) *The Hogan guide: Interpretation and use of Hogan inventories*. Tulsa, OK: Hogan Assessment Systems.

Hunt, D. (2015) 'Popping a Project: Using a 1-3-9 Ranking System in Selecting a Project', *David Hunt P.E.*, 19 October. Available at: <https://davidhuntpe.files.wordpress.com/2015/10/use-of-a-1-3-9-scoring-system-for-evaluating-project-alternatives.pdf> (Accessed: 27 May 2020).

International Coach Federation (ICF) (2005) *The Gold Standard in Coaching | ICF - Core Competencies*. Available at: <https://coachfederation.org/core-competencies> (Accessed: 4 April 2019).

Irons, C. and Kerr, S. (2020) *An Introduction to Compassion Focused Therapy (CFT)* [Webinars]. Compassionate Mind Foundation, Online. 16, 17 and 20 July 2020.

Irons, C. Palmer, S. and Hall, L. (2019) 'Compassion Focused Coaching', in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.

Jackson, P. and Cox, E. (2018) 'Developmental Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.

- James, T.C. and Ostrom, L. (2011) 'Using Likert-Type Scales in the Social Sciences', *Journal of adult education*, 40(1), pp. 19.
- James, W. *Pragmatism*. 2019 edn. digireads.
- Johnson, R.B. and Onwuegbuzie, A.J. (2004) 'Mixed Methods Research: A Research Paradigm Whose Time Has Come', *Educational Researcher*, 33(7), pp. 14-26.
- Joines, V. and Stewart, I. (2002) *Personality adaptations*. 1st edn. Nottingham: Lifespace Publ.
- Jones, D. (2014) '[Infographic] Living with Glaucoma Action Plan and Toolkit', *Griswold Home Care*. [blog]. 16 January. Available at: <https://www.griswoldhomecare.com/blog/living-with-glaucoma-infographic/> (Accessed: 28 August 2020).
- Joseph, S. and Bryant-Jefferies, R. (2019) 'Person-centred coaching psychology' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Kahneman, D. (2012) *Thinking, fast and slow*. London: Penguin.
- Karner-Huțuleac, A. (2014) 'Perfectionism and self-handicapping in adult education', *Procedia-Social and Behavioral Sciences*, 142 pp. 434-438.
- Kawulich, B.B. and Chilisa, B. (2012), 'Selecting a research approach: paradigm, methodology and methods' in Wagner, C., Kawulich, B. and Garner, M. (eds) *Doing social research: a global context*. New York: McGraw-Hill Higher Education.
- Kearns, H. et al. (2008) 'When a High Distinction Isn't Good Enough: A Review of Perfectionism and Self-Handicapping.', *Australian Educational Researcher*, 35(3), pp. 21-36.
- Keeney, S., McKenna, H. and Hasson, F. (2011) *The Delphi Technique in Nursing and Health Research*. 1st edn. US: Wiley-Blackwell.
- Kegan, R. (1994) *In over our heads: the mental demands of modern life*. Cambridge, Mass.; London: Harvard University Press.
- Kegan, R. and Lahey, L. (2002) *How the way we talk can change the way we work: seven languages for transformation*. San Francisco, Calif.: Jossey-Bass; Chichester: John Wiley.

- Kegan, R. and Lahey, L. (2009) *Immunity to change: how to overcome it and unlock the potential in yourself and your organization*. Boston, Mass.: Harvard Business Press.
- Kets de Vries, M.F.R. and Cheak, A. (2014) 'Psychodynamic approach', *INSEAD Faculty and Research*. Available at: <https://www.insead.edu/faculty-research/publications> (Accessed: 22 February 2020).
- Kilburg, R.R. (2004) 'When shadows fall: Using psychodynamic approaches in executive coaching', *Consulting Psychology Journal Practice and Research*, 56(4), pp. 246-268
- Kim, S., Fernandez, S. and Terrier, L. (2017) 'Procrastination, personality traits, and academic performance: When active and passive procrastination tell a different story', *Personality and Individual Differences*, 108, pp. 154-157.
- Kline, N. (1999) *Time to think: listening to ignite the human mind*. London: Ward Lock.
- Knight, S. (2010) *NLP at work: the difference that makes a difference in business*. 3rd edn. London: Nicholas Brealey.
- Kretschmar, I. (2010) 'Exploring Clients' Readiness for Coaching', *International Journal of Evidence Based Coaching and Mentoring*, pp. 1-20.
- Law, H. (2019) 'Narrative coaching for all (adults, children, groups and communities)' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Learning and Performance Solutions (2012) *Coaching Readiness Assessment*. Available at: <https://www.learningandperformancesolutions.com/self-assessments> (Accessed: 2 February 2020).
- LeDoux, J. (2002) *Synaptic self: how our brains become who we are*. United States: Viking Penguin.
- LeDoux, J. (2016) *Anxious: Using the Brain to Understand and Treat Fear and Anxiety*. New York, USA: Penguin.
- LeDoux, J. (2019) *The Deep History of Ourselves: The Four-Billion-Year Story of How We Got Conscious Brains*. USA: Penguin Books.

- Lee, G. (2018) 'The Psychodynamic Approach to Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.
- Linley, P. and Harrington, S. (2006) 'Strengths Coaching: A potential-guided approach to coaching psychology', *International Coaching Psychology Review*, 1(1), pp. 37-46.
- Loberg, M. and Parker, A. (2018) 'Preventing Amygdala Hijack During Witness Testimony', *For the Defense*, June. Available at: <http://www.eckenrode-law.com/wp-content/uploads/2018/06/FTD-1806-Kanasky-Chamberlin-Eckenrode-Campo-Loberg-Parker.pdf> (Accessed: 22 March 2020).
- Luo, L. (2016) *Principles of neurobiology*. New York, USA: Garland Science.
- Mackie, D. (2015) 'The effects of coachee readiness and core self-evaluations on leadership coaching outcomes: a controlled trial', *Coaching: An International Journal of Theory, Research & Practice*, 8(2), pp. 120-137.
- 'Maladaptive' (2019) Available at: <https://www.lexico.com/definition/maladaptive> (Accessed: 1 April 2019).
- Manu, M.J. (2014) 'Structural Analysis – Transactional Analysis', *SlideShare* [Slide 13]. Available at: <https://www.slideshare.net/manumjoy/the-ego-state-model> (Accessed: 3 March 2020).
- Maritz, J. (2013) 'Taming the wild west of business coaching training: An emerging conceptual framework', *Acta Commercii*, 13(1), Art. #174, 11 pages. <http://dx.doi.org/10.4102/ac.v13i1.174>. (Accessed: 29 July 2020).
- Maurer, R. (2011) 'The Gestalt approach to resistance in coaching', *Organizational Coaching and Change*, pp. 91.
- May, J. and Barnard, P.J. (2004) 'Cognitive task analysis in interacting cognitive subsystems' in Diaper, D. and Stanton, N. (eds) *The handbook of task analysis for human-computer interaction*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- McClelland, D.C. (1975) *Power: the inner experience*. USA: Irvington Publishers, Inc.
- McDermott, I. (2010) 'NLP coaching' in Association of Coaching and Passmore, J. (ed.) *Excellence in coaching: the industry guide*. 2nd edn. London: Kogan Page.

- McDonnell, L., Scott, S. and Dawson, M. (2017) 'A multidimensional view? Evaluating the different and combined contributions of diaries and interviews in an exploration of asexual identities and intimacies', *Qualitative research: QR*, 17(5), pp. 520-536.
- McManus, C. (2018) 'Left and right, hands and brains, myths and truths' [Presentation]. *Neuromyths, and the science behind them: BNA Christmas Symposium*. The Strand Campus, Kings College London University, London, 17 December.
- McNiff, J. (2016) *You and your action research project*. 4th edn. London: Routledge.
- Mehlberg, M.J. (2015) 'From Ignorance to Mastery: How Adults Learn', *The Higher Education Revolution* [Image]. 9 December. Available at: <https://higheredrevolution.com/from-ignorance-to-mastery-how-adults-learn-c1d44316e27b> (Accessed: 27 June 2020)
- Mi, D. (2017) 'How to Deal with Self-Sabotage', *The Mind and Body Coach* [blog]. 20 August. Available at: <https://higheredrevolution.com/from-ignorance-to-mastery-how-adults-learn-c1d44316e27b> (Accessed: 29 April 2020).
- Miller, G.A. (2003) 'The cognitive revolution: a historical perspective', *Trends in cognitive sciences*, 7(3), pp. 141-144.
- Miller, R. (2016) 'Neuroeducation: Integrating brain-based psychoeducation into clinical practice', *Journal of Mental Health Counseling*, 38(2), pp. 103-115.
- Moore, A. (2007) 'The qualification game', *Training & Coaching Today*, pp. 27.
- Morgan, D.L. (2014) 'Pragmatism as a Paradigm for Social Research', *Qualitative Inquiry*, 20(8), pp. 1045-1053.
- Nadler, R. (2011) 'Where Did My IQ Go No. 2? Handling the Hijack', *Psychology Today* [blog]. 30 May. Available at: <http://www.psychologytoday.com/blog/leading-emotional-intelligence/201105/where-did-my-iq-go-no-2-handling-the-hijack> (Accessed: 27 February 2020).
- Napper, R. and Newton, T. (2018) 'Transactional Analysis and Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.
- Neenan, M. (2008) 'Tackling Procrastination: An REBT Perspective for Coaches', *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 26(1), pp. 53-62.

- Neenan, M. (2010) 'Cognitive behavioural coaching' in Association of Coaching and Passmore, J. (ed.) *Excellence in coaching: the industry guide*. 2nd edn. London: Kogan Page.
- Nepal, V.P. (2010) 'On Mixing Qualitative Methods', *Qualitative health research*, 20(2), pp. 281.
- O'Connor, J. and Lages, A. (2019) *Coaching the Brain: Practical Applications of Neuroscience to Coaching*. Abingdon, Oxon: Routledge.
- Page, L. J. (2011) 'Neuroscience', in Wildflower, L. & Brennan, D. (eds) *The handbook of knowledge-based coaching: from theory to practice*. Chichester, UK: John Wiley distributor.
- Palmer, S. (2009) 'Rational Coaching: A cognitive behavioural approach', *Coaching Psychologist*, 5(1), pp. 12-20.
- Palmer, S. and Szymanska, K. (2019) 'Cognitive behavioural coaching: an integrative approach' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Palmer, S. and Whybrow, A. (eds) (2019) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Paquette, V. et al. (2003) "'Change the mind and you change the brain": effects of cognitive-behavioral therapy on the neural correlates of spider phobia', *NeuroImage*, 18(2), pp. 401-409.
- Pasquinelli, E. (2012) 'Neuromyths: Why Do They Exist and Persist?', *Mind, Brain, and Education*, 6(2), pp. 89.
- Passmore, J. (2007) 'An integrative model for executive coaching.', *Consulting Psychology Journal: Practice and Research*, 59(1), pp. 68.
- Passmore, J. (ed.) (2010) *Excellence in coaching: the industry guide*. 2nd edn. London: Kogan Page.
- Passmore, J. and Whybrow, A. (2019) 'Motivational interviewing: an approach for coaching psychologists' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.

- Patton, M.Q. (2002) *Qualitative research and evaluation methods*. 3rd edn. Thousand Oaks, Calif.: Sage Publications.
- Peters, S. (2012) *The chimp paradox: the mind management program to help you achieve success, confidence, and happiness*. New York: Jeremy P. Tarcher/Penguin.
- Pinker, S. (2015) *How the mind works*. London: Penguin.
- Porges, S.W. (2007) 'The polyvagal perspective', *Biological psychology*, 74(2), pp. 116-144.
- Porges, S.W. (2011) *The Polyvagal Theory: Neurophysiological Foundations of Emotions, Attachment, Communication, and Self-Regulation*. 1st edn. USA: W. W. Norton & Company.
- Porges, S.W. (2017) *The pocket guide to the polyvagal theory: The transformative power of feeling safe*. USA: WW Norton & Company.
- Prapavessis, H. (2003) 'Self-handicapping tendencies, coping, and anxiety responses among athletes', *Psychology of Sport & Exercise*, 4(4), pp. 357-376.
- [Professor of Neuroscience] (2018a) Zoom pilot interview with Deni Lyall, 12 July.
- [Professor of Neuroscience] (2018b) Zoom pilot interview with Deni Lyall, 13 July.
- Pychyl, T. and Flett, G. (2012) 'Procrastination and Self-Regulatory Failure: An Introduction to the Special Issue', *Journal of Rational - Emotive & Cognitive - Behavior Therapy*, 30(4), pp. 203-212.
- Quillette Pty Ltd (2018) 'Taming the lizard brain', *Quillette* [Image]. Available at: <https://quillette.com/2018/08/27/taming-the-lizard-brain/triune-brain/> (Accessed: 11 March 2020).
- Ramachandran, V.S. (2012) *The tell-tale brain: Unlocking the mystery of human nature*. Great Britain: Random House.
- Ready, R. and Burton, K. (2004) *Neuro-linguistic programming for dummies*. Hoboken, New Jersey: John Wiley and Sons, Inc.
- Reeves, E.N. (2019) *The Influence of Neuroscience Instruction on Coach Self-Efficacy and Self-Reported Coaching Behaviors*. Unpublished PhD thesis. Eric N. George Mason University.

'Reflexive' (2019) Available at: <https://www.lexico.com/definition/reflexive> (Accessed: 1 April 2019).

'Resistant' (2019) Available at: <https://www.lexico.com/definition/resistant> (Accessed: 1 April 2019).

Riddell, P. (2019) 'Coaching and neuroscience', in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.

Roberts, V.Z. and Brunning, H. (2019) 'Psychodynamic and systems-psychodynamics coaching' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.

Robson, C. (2011) *Real world research / Colin Robson*. 3rd edn. Chichester: John Wiley & Sons Ltd.

Rose, N.S. and Abi-Rached, J.M. (2013) *Neuro: the new brain sciences and the management of the mind*. Princeton, N.J.: Princeton University Press.

Rousselet, G.A. *et al.* (2019) 'Promoting and supporting credibility in neuroscience', *Brain and Neuroscience Advances*, 3.

Saunders (2020a) *Handout to accompany AC Webinar on Reflective Practice*. Unpublished.

Saunders, I. (2020b) Zoom conversation with Deni Lyall, 25 June.

Saunders, M., Lewis, P. and Thornhill, A. (2016) *Research methods for business students*. 7th edn. Harlow: Pearson Education.

Saunders, M.N.K., Lewis, P. and Thornhill, A. (2019) *Research methods for business students*. 8th edn. New York: Pearson.

Schermuly, C.C. (2018) 'Client dropout from business coaching.', *Consulting Psychology Journal: Practice and Research*, 70(3), pp. 250.

Schmelkin, R. (2018) 'D'var Torah on Kavod', *6 Points Sci-Tech Academy* [Image].

Available at: <https://6pointsscitech.org/2018/07/15/dvar-torah-kavod/> (Accessed: 12 March 2020).

- Schore, A.N. (2016) *Affect regulation and the origin of the self: The neurobiology of emotional development*. Oxon, UK: Routledge.
- Schwartz, J., Thomson, J. and Kleiner, A. (2016) 'The neuroscience of strategic leadership', *strategy+business*, 5 December. Available at: <https://www.josiethomson.com/wp-content/uploads/The-Neuroscience-of-Strategic-Leadership-SB-article.pdf> (Accessed: 12 March 2020).
- Seidman, I. (2006) *Interviewing as qualitative research: a guide for researchers in education and the social sciences*. 3rd edn. New York: Teachers College Press.
- Seth, A. (2017) *Your brain hallucinates your conscious reality* [video]. Available at: <https://www.youtube.com/watch?v=lyu7v7nWzfo> (Accessed: 20 April 2019).
- Shabi, A. (2015) 'Ontological Coaching by Aboodi Shabi', *Crowe Associates Ltd* [Article]. Available at: <http://www.crowe-associates.co.uk/wp-content/uploads/2013/10/Ontological-Coaching-article.pdf> (Accessed: 15 July 2017).
- Shabi, A. (2019) *Ontological Coaching* [Webinars]. Association of Coaching, Online. 27 June, 11 July, 25 July and 8 August.
- Shabi, A. and Whybrow, A. (2019) 'Ontological coaching' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Siegel, D.J. (2011) *Mindsight: The new science of personal transformation*. Great Britain: Oneworld Publishing.
- Sieler, A. (2018) 'Ontological Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.
- Simon, S.N. (2009) 'Applying Gestalt theory to coaching', *Gestalt Review*, 13(3), pp. 230-240.
- Soo-Hyun Im et al. (2018) 'Taking an educational psychology course improves neuroscience literacy but does not reduce belief in neuromyths', *PLoS ONE*, 13(2), pp. e0192163.

- Spinelli, E. (2018) 'Existential Coaching' in Cox, E., Bachkirova, T. and Clutterbuck, D. (eds) *The complete handbook of coaching*. 3rd edn. Thousand Oaks, California: Sage Publications Inc.
- Spinelli, E. and Horner, C. (2019) 'An existential approach to coaching psychology' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Stelter, R. (2018) *The art of dialogue in coaching: towards transformative exchange*. 1st edn. London: Routledge.
- Stokes, P. (2015) *The skilled coachee: An alternative discourse on coach*. Unpublished PhD thesis. Sheffield Hallam University.
- Swaab, D.F. (2014) *We are our brains: from the womb to alzheimer's*. London: Allen Lane.
- Talisse, R.B. Scott F. Aikin. (2008) *Pragmatism a guide for the perplexed*. London; New York: Continuum.
- Tang, Y. Anonymous (2017) *The Neuroscience of Mindfulness Meditation How the Body and Mind Work Together to Change Our Behaviour*. 1st edn., 2017 edn. Cham: Springer International Publishing: Imprint: Palgrave Macmillan.
- Toogood, K. (2012) 'Strengthening Coaching: an Exploration of the Mindset of Executive Coaches using Strengths-Based Coaching.', *International Journal of Evidence Based Coaching & Mentoring*, 6, pp. 72-87.
- Turner, M.J. (2016) 'Rational Emotive Behavior Therapy (REBT), Irrational and Rational Beliefs, and the Mental Health of Athletes', *Frontiers in Psychology*, 7:1423. DOI: 10.3389/fpsyg.2016.01423
- Turoff, M. (1975) 'The Policy Delphi' in Linstone, H.A. and Turoff, M. (eds) *The Delphi method: Techniques and applications*. Reading, MA: Addison-Wesley.
- Welford, M. (2016) *Compassion focused therapy for dummies*. 1st edn. Chichester, England: John Wiley & Sons Ltd.
- Wellbelove, J. (2016) *Transformative coaching: beyond goal-focused coaching into the domain of personal transformation*. Horsham: Roffey Park Institute.

- Whitmore, J., Sir (2002) *Coaching for performance: GROWing people, performance and purpose*. 3rd edn. London: Nicholas Brealey.
- Willson, R. and Branch, R. (2006) *Cognitive behavioural therapy for dummies*. 1st edn. Chichester, West Sussex, England: John Wiley & Sons, Inc.
- Wilson, C. (2014) *Performance Coaching*. 2nd edn. Great Britain: Kogan Page Ltd.
- Wilson, S. (2019) 'Transactional Analysis approaches to coaching' in Palmer, S. and Whybrow, A. (eds) *Handbook of coaching psychology: a guide for practitioners*. 2nd edn. Abingdon: Routledge.
- Wong, S. (2008) 'The Relations of Cognitive Triad, Dysfunctional Attitudes, Automatic Thoughts, and Irrational Beliefs with Test Anxiety', *Current Psychology; A Journal for Diverse Perspectives on Diverse Psychological Issues*, 27(3), pp. 177-191.
- Yates, L. (2018) 'Sample Pre Coaching Questionnaire', *A Guide to Coaching and Being Coached* [webpage]. Available at: <https://www.personal-coaching-information.com/sample-pre-coaching-questionnaire.html> (Accessed: 2 February 2020).

9 Appendices

Appendix 1: Choice of terminology

The choice of terminology for the phenomenon observed needed to convey these three elements.

- It is not conscious nor is it voluntary
- It is within the coachee, especially from the way their brain has adapted to survive
- It is hampering progress towards their conscious goals

1. Use of the term 'hinder'

'Resistant' ('Resistant', 2019) implies that the coachee is consciously opposed to doing something or preventing something from happening. This is more akin to coachee obstacles related to the coaching process as described in the main thesis section 2.2.4. The definition also suggests feelings of hostility and aversity.

'Hesitant' ('Hesitant', 2019) implies a reluctance or tentativeness towards a course of action, which is often consciously understood. This behaviour is exhibited by some reflexive-hindering coachees although it conveys one style of impediment rather than the overall dynamic. It might be what the coach observes and is the experience of the coachee but it is not what is happening in the coachee's brain.

'Hinder' ('Hinder', 2019) on the other hand is defined as making "it difficult for (someone) to do something or for (something) to happen". This aptly describes the phenomenon observed. It does not preclude that it gets done just that it becomes more difficult to do nor does it preclude the coachee's conscious desire to progress their objectives. Also, hindering does not deem 'intent' or that there is any specific emotion signified by it, just that something hinders something from happening.

Therefore, the term 'hindering' seemed suitable for one part of the term.

2. Use of the term 'reflexive'

Self-hindering: Although self-hindering seemed an appropriate term to describe the dynamic, there were a number of reasons that made it less suitable. Firstly, there are a number of terms already in use within coaching that it could be confused with, for

example self-limiting beliefs. Also, one participant thought it meant self-harming by the coachee. Therefore, 'self-hindering' was not used.

Goal or Adaptation hindering: Goal-hindering was also considered but it shifts the focus to the goal not the coachee's reactions. Also, it does not preclude things other than the coachee from having hindered the goal.

Adaptive-hindering: This implies the hindering is adapting, that the nature of how the hindering takes place changes, that it is adaptive. Although this may be true, it does not describe the nature or origin of the hindering.

Neuroceptive-hindering: Porges (2004, 2017) defines the term neuroception as a nonconscious awareness of the brain that is always scanning the environment for safety and threats. He uses neuroception to denote a difference between this and perception which is conscious awareness, or interoception which is the brain's awareness of what is happening in the body. Porges (2017) states that neuroception creates involuntary responses depending on clues it picks up in the environment. Thus, neuroception creates safety and threat responses. He also states that neuroception can be inaccurate and detect safety or risk incorrectly. Neuroception definitely plays a role in the dynamic observed in coaching although it is a broader term encompassing safety as well. Also, Porges (2017) links it consistently to cues in the environment such as the therapists voice tone. He does not state that it is responding to the person's own thoughts about future possible actions or ways of being. Therefore, neuroceptive-hindering was not used.

Maladaptive/ Nonadaptive: Porges (2004, 2017) uses neuroception in the context of adaptive and maladaptive strategies or physiological states. Thus 'maladaptive-hindering' was a possibility. However, the use of 'maladaptive' might create problems with the connotations it has, although its definition is fitting: "Not adjusting adequately or appropriately to the environment or situation" ('Maladaptive', 2019).

Reflexive and Reflexively: 'Unanticipated' was suggested by a colleague, which resonated and led to other options. These were, involuntarily, unintentionally, inadvertently and reflexive. Reflexive seemed to be the most succinct and explanatory option.

Reflexive: ('Reflexive', 2019)

“(of an action) performed as a reflex, without conscious thought.”

Representative Synonyms: **instinctive**, automatic, mechanical, involuntary, impulsive, spontaneous, unconscious, unpremeditated

Taking this analysis into account, 'reflexive hindering' was chosen as the term to describe the observed responses.

Appendix 2: The Delphi Study and rationale for change of project

1. The initial research project

Proposed title

A neuroscience-based model and framework for effective coaching of reflexive-hindering coachees.

Aims and objectives

The aim is to develop a neuroscience-informed coaching model and framework enabling more effective coaching of reflexive-hindering coachees that will help tailor coaching practices and enhance our understanding of the challenges these coachees face during coaching.

The outcomes are to: -

- Enhance the understanding and development of which coaching techniques and methods generate more efficient and effective change in reflexive-hindering coachees.
- Enable a neuroscience-based exploration with coachees of how they may be helping and/or hindering themselves during the coaching process of change. This exploration will also help raise awareness with the coachee that many seemingly fixed aspects of who they are, are actually more adaptable than they perceive them to be.
- Help the coachee to be prepared for certain unhelpful responses and to challenge the appropriateness of them in that situation, even though they may feel real and necessary at the time.
- Inform and enhance various aspects of coaching practice when coaching reflexive-hindering coachees. This may include the choice of coaching interventions, the environment for coaching, the coaching relationship and the coach's impact.

To do this, the objectives of the research are:

- A neuroscience-informed model, for coaching, of the mechanism enabling the brain to determine which actions to take given all the various inputs.
- A coaching framework based on this model for coaching reflexive-hindering coachees.
- Evaluation of the coaching model and framework (time permitting).

Epistemology, theoretical perspective and methodology

A coach will predominantly work with a client through the medium of their own interpretation of the world although there are clearly objective aspects of any issue (such as word context for example) that will influence the outcome. Neuroscience however takes a primarily objective stance in its empirical research, only using a more subjective stance in some data interpretation/extrapolation (Rose and Abi-Rached, 2013). The research described here seeks to use knowledge generated within both disciplines and hence needs to carefully consider the ontology and epistemology employed.

The epistemology of Constructionism is a good fit as it gives equal weighting to each perspective identifying that scientists use both to construct knowledge or meaning (Crotty, 1998). Critical Realism, a strand of Interpretivism (Gray, 2014), also contends that science can attempt to describe the world factually but the researcher brings to bear their own biases and constructs to any interpretation of data hence this paradigm provides a suitable basis for the subsequent choice of methods (Wagner, Kawulich and Garner, 2012; Gray, 2014).

The research designed here is qualitative in nature seeking to collect and codify the considered interpretations of expert neuroscientist as they explore their current knowledge of the brain's mechanisms for determination of action. This construct will then be used to inform the design of coaching practices specifically for reflexive-hindering coachees i.e. find change particularly difficulty. The model produced will be inherently value-laden and will only be a current interpretation (Wagner, Kawulich and Garner, 2012; Gray, 2014).

The intended methodology is a Modified Policy Delphi (Turoff, 1975), using interviews with expert neuroscientists for Round 1 to provide the major concepts of interest. The Delphi is a well-used qualitative methodology used to construct a shared reality from

the realities brought by each participant. It is often used for complex or ambiguous issues where there may be incomplete or conflicting information. It is also a cost effective and realistic way to solicit information from globally dispersed and busy expert neuroscientists (Linstone and Turoff, 1975; Keeney, McKenna and Hasson, 2010).

Methods

Round 1 – Semi-structured interviews

Output: Emerging major concepts for possible mechanisms enabling the brain to determine, from all the various inputs, which actions to take at any point in time.

Participant selection: Purposive sample of neuroscientists who are conference speakers, cited authors or Research Laboratories Heads. Invitees will be emailed a briefing invitation, with agreement to the interview being taken as consent.

Pilot interviews: Set 1: Conducted using two known neuroscientists, with extended feedback time to hone the interview process. Set 2: Conducted with two participants to hone the interview questions.

Interviews: Eight to ten recorded twenty-minute semi-structured participant interviews from which the emerging major concepts will be garnered by thematic analysis.

Rounds 2 and 3 - Rating questionnaires

Output: Cogent and plausible information from which to develop a neuroscience-based model for coaching.

Participant selection: See Round 1.

Round 2: A questionnaire details the emergent concepts allowing participants to rate them for Cogency, Plausibility and Relevance using a 5-point Likert-type rating scale. Space is provided for additional key concepts. The group's median ratings are calculated and comments analysed using a simple thematic analysis. Invitees will be emailed a briefing invitation letter and the first questionnaire. Completion of the questionnaire will be taken as consent.

Round 3: The median and participant's own ratings are presented back. The participant is asked to reconsider their ratings and rate new concepts. Outputs analysed as per Round 2.

Thematic analysis of Delphi outputs

Output: A neuroscience-informed model of the mechanism enabling the brain to determine actions and a simplified version for coaches.

Analysis: Conduct a thematic analysis to create emergent themes and sub-themes.

Interpret: Develop model, with literature review to corroborate its construct.

Simplify: Simplify model for ease of use by coaches.

My supervisors and an experienced coach will act as 'critical friends'.

Framework creation

Output: Coaching Framework for coaching reflexive-hindering clients.

Translation of the model into a coaching framework for coaching reflexive-hindering clients, using an experienced coach as a 'critical friend'.

Model and framework evaluation (*Time allowing*)

Output: Evaluation of how the model and framework enhances the coaching of reflexive-hindering clients.

Myself: The evaluation will comprise of three case studies and a reflective coaching log.

Coaches: Four, sixty-minute semi-structured recorded interviews, with experienced coaches, ascertaining how the model and framework affected their coaching practice. They will be emailed a briefing invitation and consent form.

2. Rationale for change July 2019

Delphi Round 1 participants

Over four hundred University Researcher's research interests have been reviewed, with two hundred and ten logged as possible participants. Table 1 shows the progress to date from actual email invitations sent.

When	Total invited	No response received	'OoF' & no further response	Replied to decline	Responded
Jun-18	36	33	1	0	2 – pilot interviews conducted: both Professors in Neuroscience
Mar-19	29	23	0	6	0
Jun-19	39	29	2	6	1 maybe - queried authorship and no further correspondence; 1 - to explain why neuroscience is not ready for this question (11/07/2019 interview): Director of & Professor in Neuroscience
Totals	104	85	3	12	4
('OoF' – Out of Office automatic reply)					

Table 1: Invites sent to date and outcomes.

Reflections on progress

Some reflections on the work undertaken so far:

- Neuroscientist invitees: I am not part of their network of relationships so it is effectively 'cold-calling' - interestingly all, but one, responses have been from UK-based invitees; it is harder for me to appreciate how they view my research and the tensions this may create as they are in an academic environment whereas I am in a business environment; the willingness to speculate in a field that is more quantitative than qualitative.
- There are many possible participants who have overarching research interests and aims that resonate with my research question. However, upon further reading the research actually being conducted is a very specific aspect or step of that overarching aim.
- Having reviewed the pilot interviews with my supervisor, I discovered how I needed to approach the interviews differently. During the pilot interviews I found it hard to keep the participants focused on answering the question with their views. Instead I

found that they were giving suggestions as to where I might read further about various aspects related to the question asked.

- The Process Delphi (Turnoff, 1975) seeks to obtain a considered opinion on a topic. In this research that may lead to ideas which are as yet unpublished by the participant. Although a thematic analysis of all inputs would be completed, it raises a potential and legitimate concern about the authorship and copyright of that element of the result. This was raised as a question by one possible participant and may have led to others not responding.
- The review of participants has enabled reflection upon the different levels at which the research question could and may be answered. The pilot interviews have also furnished information about the gap between rodent research and relating this to the human brain. A Director of Neuroscience (2019) also stated that “decision-making has made good progress and there are convergent approaches from opposite directions: Rodent research is much more predominant although it uses very specific, simple binary tasks. Human research comes from the other, higher-level, non-invasive direction. Overall, human decision-making in reality is much more complex, so neuroscience is unable to answer that question in humans at the moment”.
- In both pilot interviews the interviewees initially regarded it as a conversation about ‘decision-making’ which is quite a specific sub-topic of neuroscience and once I established the real nature of the inquiry, it became harder for them to articulate responses. Although insights and understanding are progressing at the complex level of synapses, neurochemicals, networks and circuits, it is deemed to be “all too abstract at the moment” (Director of Neuroscience, 2019).

The Delphi methodology relies on at least seven, and preferably more, expert participants. It also needs to be conducted over a reasonable time scale especially where there are frequent changes of opinions over time due to new information and knowledge: Highly stable views could allow for a longer duration between Round 1 interviews. In a field, such as neuroscience, where knowledge is being updated and views frequently change, then a tighter duration for Round 1 interviews might be desirable otherwise it is likely to affect the credibility of the results. Also, with longer

timescales, motivation to participate in the full Delphi process is likely to reduce.

(Keeney et al., 2010)

However, the Director of Neuroscience (2019), felt that it does help to “think about your thinking” as it enables you to realise how and why that happens. This in turn, may give you thoughts into doing different things. Therefore, he felt that learning some of the fundamentals of the brain is helpful and, to that end, they now spend time raising this awareness in their neuroscience undergraduates. They use a variety of materials for doing that rather than one definitive diagram or text.

I had also read more widely on the topics of coaching (Figure 1) and neuroscience (Figure 2). This knowledge added to the argument for proposing a different research project.

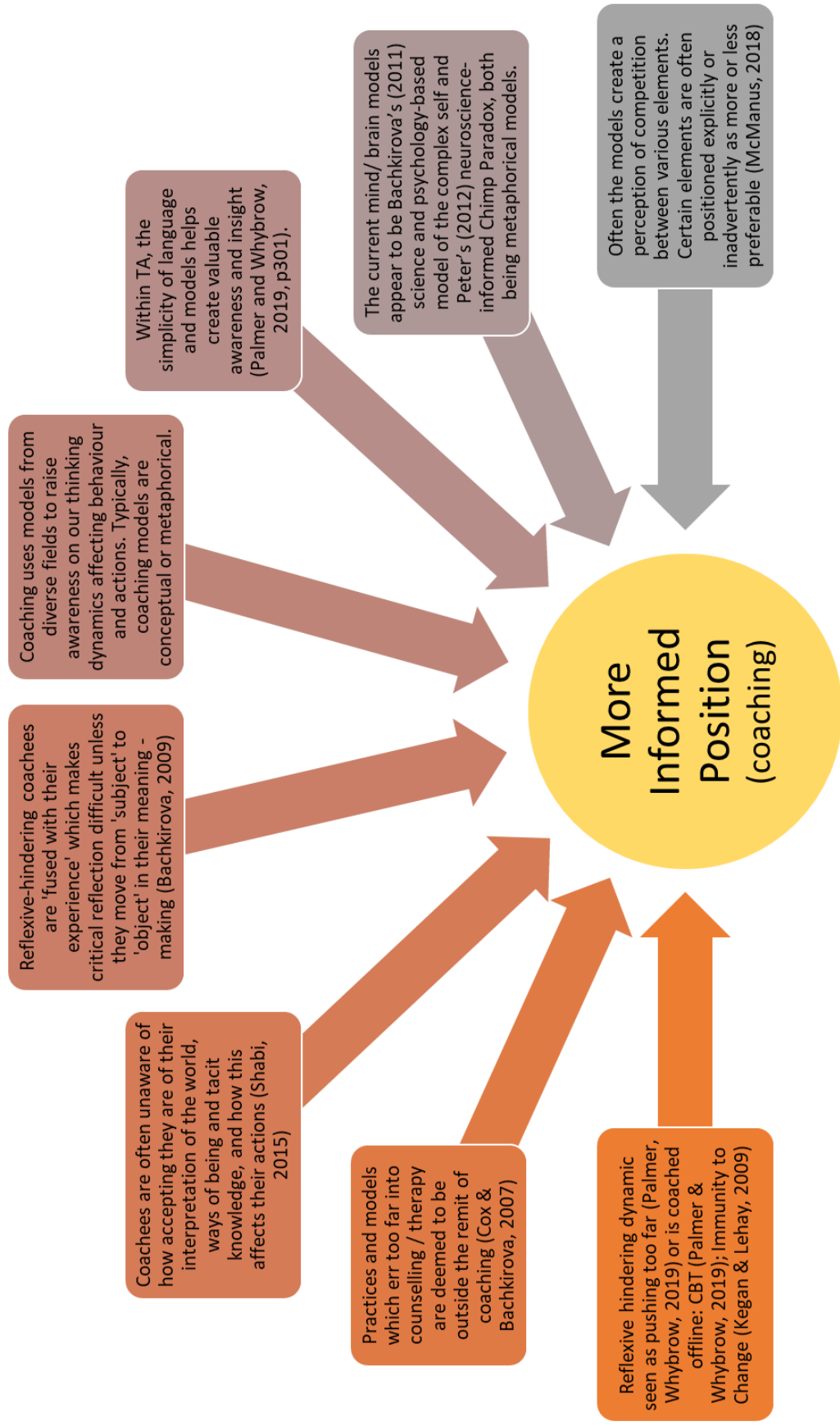


Figure 1: Key aspects from the coaching literature review thus far, leading to a more informed position

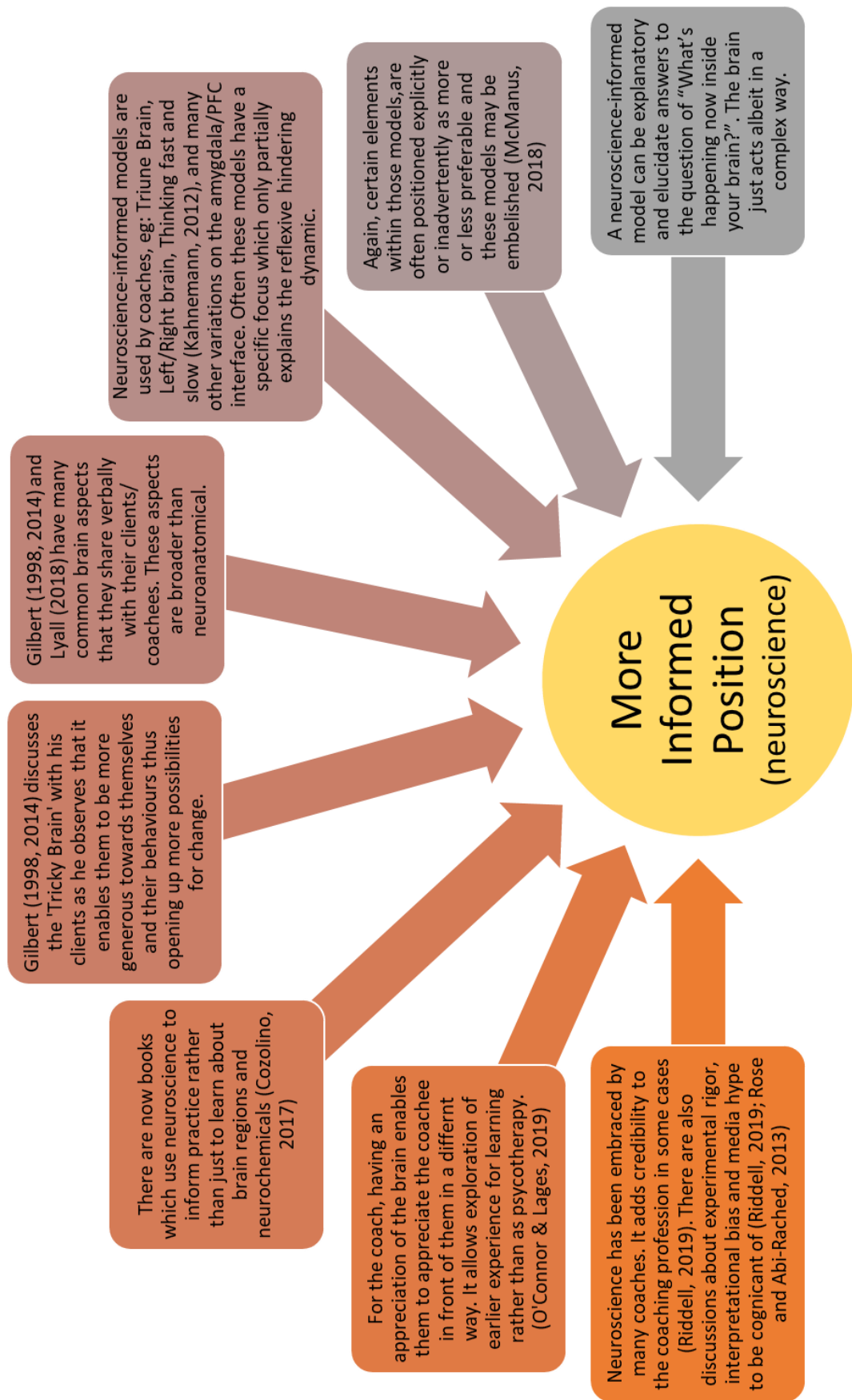


Figure 2: Key aspects from the neuroscience literature review thus far, leading to a more informed

Appendix 3: Other ‘readiness for coaching’ questionnaires

These are the links to the six questionnaires used in the very simple thematic analysis in section 2.3, Table 1:

<https://www.compasspoint.org/sites/default/files/documents/ReadinessQuestionnaire.pdf>

<https://www.lifeacumen.com/coaching-effectiveness/>

<https://mycoachsays.com/coaching-readiness-questionnaire/>

<https://www.deborahrussellcoaching.com/assessment-questionnaire/>

<https://www.personal-coaching-information.com/sample-pre-coaching-questionnaire.html>.

<http://learningandperformancesolutions.com/pdf/coaching.pdf>

Accessed: 02/02/2020

Appendix 4: Johnson and Onwuegbuzie's (2004) overview of pragmatism

(p. 18 & p. 19 respectively)

Table 1

General Characteristics of Pragmatism

-
- The project of pragmatism has been to find a middle ground between philosophical dogmatisms and skepticism and to find a workable solution (sometimes including outright rejection) to many longstanding philosophical dualisms about which agreement has not been historically forthcoming.
 - Rejects traditional dualisms (e.g., rationalism vs. empiricism, realism vs. antirealism, free will vs. determinism, Platonic appearance vs. reality, facts vs. values, subjectivism vs. objectivism) and generally prefers more moderate and commonsense versions of philosophical dualisms based on how well they work in solving problems.
 - Recognizes the existence and importance of the natural or physical world as well as the emergent social and psychological world that includes language, culture, human institutions, and subjective thoughts.
 - Places high regard for the reality of and influence of the inner world of human experience in action.
 - Knowledge is viewed as being both constructed *and* based on the reality of the world we experience and live in.
 - Replaces the historically popular epistemic distinction between subject and external object with the naturalistic and process-oriented organism-environment transaction.
 - Endorses fallibilism (current beliefs and research conclusions are rarely, if ever, viewed as perfect, certain, or absolute).
 - Justification comes in the form of what Dewey called "warranted assertability."
 - According to Peirce, "reasoning should not form a chain which is no stronger than its weakest link, but a cable whose fibers may be ever so slender, provided they are sufficiently numerous and intimately connected" (1868, in Menand, 1997, pp. 5–6).
 - Theories are viewed instrumentally (they become true and they are true to different degrees based on how well they currently work; workability is judged especially on the criteria of predictability and applicability).
 - Endorses eclecticism and pluralism (e.g., different, even conflicting, theories and perspectives can be useful; observation, experience, and experiments are all useful ways to gain an understanding of people and the world).
 - Human inquiry (i.e., what we do in our day-to-day lives as we interact with our environments) is viewed as being analogous to experimental and scientific inquiry. We all try out things to
-

see what works, what solves problems, and what helps us to survive. We obtain warranted evidence that provides us with answers that are ultimately tentative (i.e., inquiry provides the best answers we can currently muster), but, in the long run, use of this “scientific” or evolutionary or practical epistemology moves us toward larger Truths.

- Endorses a strong and practical empiricism as the path to determine what works.
 - Views current truth, meaning, and knowledge as tentative and as changing over time. What we obtain on a daily basis in research should be viewed as provisional truths.
 - Capital “T” Truth (i.e., absolute Truth) is what will be the “final opinion” perhaps at the end of history. Lowercase “t” truths (i.e., the instrumental and provisional truths that we obtain and live by in the meantime) are given through experience and experimenting.
 - Instrumental truths are a matter of degree (i.e., some estimates are more true than others). Instrumental truth is not “stagnant,” and, therefore, James (1995: 1907) states that we must “be ready tomorrow to call it falsehood.”
 - Prefers action to philosophizing (pragmatism is, in a sense, an anti-philosophy).
 - Takes an explicitly value-oriented approach to research that is derived from cultural values; specifically endorses shared values such as democracy, freedom, equality, and progress.
 - Endorses practical theory (theory that informs effective practice; praxis).
 - Organisms are constantly adapting to new situations and environments. Our thinking follows a dynamic homeostatic process of belief, doubt, inquiry, modified belief, new doubt, new inquiry, . . . , in an infinite loop, where the person or researcher (and research community) constantly tries to improve upon past understandings in a way that fits and works in the world in which he or she operates. The present is always a new starting point.
 - Generally rejects reductionism (e.g., reducing culture, thoughts, and beliefs to nothing more than neurobiological processes).
 - Offers the “pragmatic method” for solving traditional philosophical dualisms as well as for making methodological choices.
-

Table 2
Some Weaknesses of Pragmatism

-
- Basic research may receive less attention than applied research because applied research may appear to produce more immediate and practical results.
 - Pragmatism may promote incremental change rather than more fundamental, structural, or revolutionary change in society.
 - Researchers from a transformative-emancipatory framework have suggested that pragmatic researchers sometimes fail to provide a satisfactory answer to the question “For whom is a pragmatic solution useful?” (Mertens, 2003).
 - What is meant by usefulness or workability can be vague unless explicitly addressed by a researcher.
 - Pragmatic theories of truth have difficulty dealing with the cases of *useful but non-true* beliefs or propositions and *non-useful but true* beliefs or propositions.
 - Many come to pragmatism looking for a way to get around many traditional philosophical and ethical disputes (this includes the developers of pragmatism). Although pragmatism has worked moderately well, when put under the microscope, many current philosophers have rejected pragmatism because of its logical (as contrasted with practical) failing as a solution to many philosophical disputes.
 - Some neo-pragmatists such as Rorty (and postmodernists) completely reject correspondence truth in any form, which troubles many philosophers.
-

Appendix 5: Reflexive hindering infographic references

Amthor, F. (2016) *Neuroscience For Dummies*. 2nd edn. Hoboken, New Jersey: John Wiley and Sons, Inc.

Bachkirova, T. (2009) 'Cognitive-developmental approach to coaching: an interview with Robert Kegan', *Coaching: An International Journal of Theory, Research and Practice*, 2(1), pp. 10-22.

Barnard, L.K. and Curry, J.F. (2011) 'Self-compassion: Conceptualizations, correlates, and interventions', *Review of general psychology*, 15(4), pp. 289-303.

Barrett, L.F. (2018) *How emotions are made: the secret life of the brain*. Paperback edn. London: Pan Books.

Barto, A., Mirolli, M. and Baldassarre, G. (2013) 'Novelty or Surprise?', *Frontiers in psychology*, 4, p. 907. DOI: 10.3389/fpsyg.2013.00907

Bear, M.F., Connors, B.W. and Paradiso, M.A. (2016) *Neuroscience: exploring the brain*. 4th edn., International edn. Philadelphia: Wolters Kluwer.

Boyatzis, R. (2013) 'Coaching With Compassion: Inspiring Health, Well-Being, and Development in Organizations', *Journal of Applied Behavioral Science*, 49(2), pp. 153-179.

Boyatzis, R. (2015) *Coaching With Compassion vs Coaching For Compliance*. Available at: <https://leaderonomics.com/personal/coaching-with-compassion> (Accessed: 30 October 2019).

Boyatzis, R., Smith, M. and Van Oosten, E. (2019) *Helping People Change: Coaching with Compassion for Lifelong Learning and Growth*. Boston, Massachusetts, USA: Harvard Business Press.

Brown, P., Kingsley, J. and Paterson, S. (2015) *Fear-free Organization*. 1st edn. London, UK: Kogan Page.

Brown, P.C., Roediger, H.L. and McDaniel, M.A. (2014) *Make it stick*. USA: Harvard University Press.

- Buzsáki, G. (2004) 'Neuronal Oscillations in Cortical Networks', *Science*, 304(5679), pp. 1926-1930.
- Carlson, N.R. (2014) *Foundations of behavioral neuroscience*. 9th edn., International edn. Harlow: Pearson.
- Churchland, P.S. (2014) *Touching a nerve: our brains, our selves*. New York: W.W. Norton & Company.
- Cozolino, L.J. (2017) *The neuroscience of psychotherapy: healing the social brain*. 3rd edn. New York: W.W. Norton & Company.
- Curran, A.S. (2008) *The little book of big stuff about the brain: the true story of your amazing brain*. Bancyfelin, Wales: Crown House Publishing.
- Dayan, P. (2012) 'Twenty-Five Lessons from Computational Neuromodulation', *Neuron*, 76(1), pp. 240-257.
- Dehaene, S. (2014) *Consciousness and the brain: Deciphering how the brain codes our thoughts*. New York, USA: Penguin.
- Doidge, N.M. (2008) *The Brain That Changes Itself: stories of personal triumph from the frontiers of brain science*. 2nd edn. Brunswick, Victoria: Scribe.
- Eagleman, D. (2015) *The Brain*. Edinburgh: Canongate.
- Feinstein, J.S., Adolphs, R., Damasio, A. and Tranel, D. (2011) 'The Human Amygdala and the Induction and Experience of Fear', *Current biology*, 21(1), pp. 34-38.
- Fox, K. (2006) *The smell report*, Social Issues Research Centre. Available at: <https://www.wierook.nl/docs/smell.pdf> (Accessed: 30 October 2019).
- Gilbert, P. (1998) 'Evolutionary psychopathology: Why isn't the mind designed better than it is?', *British Journal of Medical Psychology*, 71(4), pp. 353-373.
- Gilbert, P. (2013) *The compassionate mind: a new approach to life's challenges*. London: Constable.
- Gilbert, P. (2014) 'The origins and nature of compassion focused therapy', *British Journal of Clinical Psychology*, 53(1), pp. 6-41.

Girl born without a brain is now 6 years old, family seeks support. (2015) Available at: <https://www.foxnews.com/health/girl-born-without-a-brain-is-now-6-years-old-family-seeks-support> (Accessed: 30 October 2019).

Glaser, J.E. (2016) *Conversational intelligence: How great leaders build trust and get extraordinary results.* USA: Bibliomotion, Inc.

Goleman, D. (2013) *Daniel Goleman on Focus: The Secret to High Performance and Fulfilment.* Available at: <https://www.youtube.com/watch?v=HTfYv3IEOqM> (Accessed: 30 October 2019).

Hawkins, P. and Smith, N. (2006) *Coaching, mentoring and organizational consultancy: supervision and development.* Maidenhead: Open University Press.

Holland, J.H. (2014) *Complexity: a very short introduction.* Oxford, UK: Oxford University Press.

Hwang, K., Hallquist, M.N. and Luna, B. (2013) 'The development of hub architecture in the human functional brain network', *Cerebral Cortex*, 23(10), pp. 2380-2393.

Kegan, R. and Lahey, L. (2002) *How the way we talk can change the way we work: seven languages for transformation.* San Francisco, Calif.: Jossey-Bass; Chichester: John Wiley.

Kegan, R. and Lahey, L. (2009) *Immunity to change: how to overcome it and unlock the potential in yourself and your organization.* Boston, Mass.: Harvard Business Press.

LeDoux, J. (2002) *Synaptic self: how our brains become who we are.* United States: Viking Penguin.

LeDoux, J. (2016) *Anxious: Using the Brain to Understand and Treat Fear and Anxiety.* New York, USA: Penguin.

Luo, L. (2016) *Principles of neurobiology.* New York, USA: Garland Science.

Macknik, S.L., Martinez-Conde, S. and Blakeslee, S. (2012) *Sleights of mind: what the neuroscience of magic reveals about our brains.* London: Profile.

Merker, B. (2007) 'Consciousness without a cerebral cortex: A challenge for neuroscience and medicine', *The Behavioral and brain sciences*, 30(1), pp. 63-81.

- New, S.A. (2017) *How your brain works: inside the most complicated object in the universe*. London: John Murray.
- O'Hare, J.K. *et al.* (2017) 'Striatal fast-spiking interneurons selectively modulate circuit output and are required for habitual behavior', *Elife*, 6.
- O'Mara, S. M. (2018) *A brain for business - a brain for life: how insights from behavioural and brain science can change business and business practice for the better*. Cham, Switzerland: Palgrave Macmillan.
- Pinker, S. (2015) *How the mind works*. London: Penguin.
- Porges, S.W. (2004) 'Neuroception: A subconscious system for detecting threats and safety.', *Zero to Three (J)*, 24(5), pp. 19-24.
- Porges, S.W. (2007) 'The polyvagal perspective', *Biological psychology*, 74(2), pp. 116-144.
- Porges, S.W. (2017) *The pocket guide to the polyvagal theory: The transformative power of feeling safe*. USA: WW Norton & Co.
- Puder, D. (n.d.) *Episode 023: Emotional Shutdown - Understanding Polyvagal Theory*. Available at: <https://www.psychiatrypodcast.com/psychiatry-psychotherapy-podcast/polyvagal-theory-understanding-emotional-shutdown> (Accessed: 27 October 2019).
- Ramachandran, V.S. (2012) *The tell-tale brain: Unlocking the mystery of human nature*. Great Britain: Random House.
- Schomaker, J. and Meeter, M. (2015) 'Short-and long-lasting consequences of novelty, deviance and surprise on brain and cognition', *Neuroscience & Biobehavioral Reviews*, 55 pp. 268-279.
- Schultz, W. (2016a) 'Dopamine reward prediction error coding', *Dialogues in clinical neuroscience*, 18(1), pp. 23.
- Seth, A., Frith, C.D. and Bekinschtein, T. (2013) *30-second brain: the 50 most mind-blowing ideas in neuroscience, each explained in half a minute*. London, England: Icon.

- Seung, S. (2013) *Connectome: how the brain's wiring makes us who we are*. London: Penguin.
- Shabi, A. (2015) 'Ontological Coaching by Aboodi Shabi', *Crowe Associates Ltd* [Article]. Available at: <http://www.crowe-associates.co.uk/wp-content/uploads/2013/10/Ontological-Coaching-article.pdf> (Accessed: 15 July 2017).
- Siegel, D.J. (2011) *Mindsight: The new science of personal transformation*. Great Britain: Oneworld Publishing.
- Smith, N. and Hawkins, P. (2017) 'Transformational Coaching', *Renewal Associates* [podcast]. Available at: <https://www.renewalassociates.co.uk/events-training/transformational-coaching/> (Accessed: 20 March 2018).
- Storr, W. (2015) 'Can You Think Yourself Into A Different Person?', *Huffington Post*, 18(11),
- Swaab, D.F. (2014) *We are our brains: from the womb to alzheimer's*. London: Allen Lane.
- Tan, C. (2018) *Search inside yourself*. USA: HarperCollins.
- Thomas, M. (n.d.) 'How the Brain Works', *Centre for Educational Neuroscience*. Available at: <http://howthebrainworks.science> (Accessed: 1 May 2019).
- Toates, F. (1996) 'The embodied self: A biological perspective', in Stevens, R. (ed.) *Understanding the self*. London, England: Sage.
- 'Why Do Dogs Have Such a Great Sense of Smell?' (2015), *Science abc*. Available at: <http://sciabc.us/i55xe> (Accessed: 28 October 2019).

Appendix 6: Practitioner-orientated articles

(Extracted from Further Reading Handout)

Really worth a read and covers the main details within the Infographic

<http://howthebrainworks.science/> University of London Centre for Educational Neuroscience; brief overview of how the brain works for a general audience, based on recent research, gives a gist of the basic principles.

The Brain: The story of you (Eagleman, 2016, Six 1hr programmes / illustrated book)

30-Second Brain: The 50 most mind-blowing ideas in neuroscience, each explained in half a minute (Seth, 2014, illustrated book)

The Tell-tale Brain (Ramachandran, 2012, paperback)

The Little book of big stuff about the brain (Curran, 2008, short book)

Training Our Minds in, with and for Compassion: An Introduction to Concepts and Compassion-focussed exercises (Gilbert, 2010, article) or 'The Compassionate Mind: Part 1' (Gilbert, 2014, paperback)

Other useful resources:

Inside a neuron (Internet search/ Wikipedia)

2-minute neuroscience (Videos)

'Your brain hallucinates your conscious reality' (Anil Seth, 2017, video)

Neuroscience for Dummies (Amthor, 2016, book)

To gain a balanced view of the interpretative nature of neuroscience research:

Neuro (Rose, 2013, paperback)

The myth of Mirror neurons (Hickok, 2014, book)

If you are interested in the 'Safety-first' topic

The origins and nature of compassion focused therapy (Gilbert, 2014, paper)

Evolutionary psychopathology: Why isn't the mind designed better than it is? (Gilbert, 1997, paper)

<https://leaderonomics.com/personal/coaching-with-compassion> (Boyatzis, 2015, article)

Coaching with Compassion: Inspiring Health, Well-Being, and Development in Organizations (Boyatzis, 2012, paper)

If you are interested in the 'Working on it' topic

How the way we talk can change the way we work (Kegan & Lahey, 2001)

If you are interested in the 'Polyvagal Theory' topic

<https://psychiatrypodcast.com/psychiatry-psychotherapy-podcast/polyvagal-theory-understanding-emotional-shutdown> (David Punder, 2018, article)

The Pocket Guide to the Polyvagal Theory: The Transformative Power of Feeling Safe (Porges, 2017, book)

If you are interested in the 'Practice' topic

Making it Stick (Brown & Roediger, 2014, book)

<https://www.renewalassociates.co.uk/transformational-coaching/> (Hawkins & Smith)

If you are interested in the 'Attention' topic

Consciousness and the brain (Dehaene, 2014, book)

Search inside yourself (Chade-Meng Tan, 2014, book)

Appendix 7: Initial participant invitation

Dear (coach),

I am currently undertaking doctoral research in coaching at the University of Wales Trinity St David. My research topic is “Towards a greater understanding of reflexive hindering within coaching, using a neuroscience-informed approach”.

Now I am looking for experienced (500+ hrs) business/executive coaches to volunteer as participants in the research and I would like to invite you to take part. It will take no more than 2 hours of your time and will provide you with training on, and access to, a well-referenced tool for coaching clients who are hampering their own progress.

The aim of the research is to enhance the coaching of the subset of coachees who are motivated to work on their goals and yet seem unable to do so. As the coaching progresses, they display greater hesitancy and reticence to take action. I believe that the origin of this behaviour lies in a nonconscious response that hampers their ability to progress their coaching outcomes. I have called this dynamic ‘reflexive hindering’.

The research will investigate whether informing the coachee about the neuroscientific issues at play prompts the development of insight and sufficient detachment to enable them to take action and fully engage with their goals.

Participant business/ executive coaches will be trained (1 hour –CPD certificated) in using a neuroscience infographic that has been developed from this research. They will then be encouraged to use it during their coaching engagements. The coaches will then be interviewed about their actual experience of using the tool with their coachees. The interview will last a maximum of 1 hour and will be scheduled to the coach’s convenience and conducted either virtually or in person.

If you would like to participate then please email your response and I will send you a full information pack and arrange a call/meeting to answer any questions you may have.

I look forward to hearing from you and please feel free to pass this email onto other coaches you feel may be interested.

Kind regards,

Appendix 8: Participant information pack

Background and Context

I am an experienced and accredited executive coach and a coach assessor. Previously I have been a coaching training provider and supervisor. In the last six years I have become increasingly curious about what needs to be different for some coachees to be able to progress their coaching outcomes as much as they wish. These coachees present as highly motivated and ready for change. Yet within sessions or across the whole programme, they seem to be unable to progress despite understanding the actions they could take.

For these coachees, whilst we are working on what they want to do, this pushes the boundary of who they think they are. Although others often embrace the same actions, when coaching seeks to effect change at the deepest level the individual may resist such deep-seated change. Hence, these coaching conversations can trigger reactions and thoughts aimed at maintaining the status-quo.

This inaction is not conscious but results in a state in which individuals seem, if not paralysed, unable to act in a manner that is directed towards achieving their coaching goals. I have called this dynamic 'reflexive hindering'.

As the coachee feels that this reaction is unquestionably appropriate, it hampers their ability to detach from it when it occurs. However, my sense is that a neuroscience-informed approach that raises insight into the reflexive-hindering dynamic may enable them to detach and critically reflect upon those reactions. In turn, this could open up more possibilities for change and thus help them progress further towards achieving the coaching outcomes they desire.

Aims and Objectives

The overall aim of this doctorate is to enhance the coaching of coachees whose goals are hampered by reflexive hindering.

The objectives of the research are to establish:

- A deeper understanding of reflexive hindering during coaching
- An understanding of the coach's experience of using the neuroscience-based infographic with a coachee where the reflexive hindering is impeding progress.

- The value derived, if any, from using the neuroscience-based infographic with respect to progressing the coaching outcomes when reflexive hindering occurs.

The intended outcomes from the doctorate are:

- Documentation defining and outlining reflexive hindering within coaching
- Recommendations of beneficial coaching practices for working with reflexive hindering during coaching sessions
- Practitioner material for using a neuroscience-informed approach aimed at enabling coachees to critically reflect upon any reflexive hindering that impedes progress
- Material for raising awareness of reflexive hindering within the coaching community
- Recommendations for further research directions

Research Methods

Handout - a definition and brief outline of reflexive hindering has been developed to identify and subjectively estimate the amount of reflexive hindering that may be occurring. This is to aid participant selection.

Infographic - a neuroscience-informed infographic has been produced for coaches to use during coaching. A short training session has been designed to help coaches feel comfortable with using the infographic.

Data collection – this involves ten participant interviews being conducted. To allow for unforeseen circumstances, the participation of ten to twenty coaches is required. There are three steps to the process:

- i. Participant training on the infographic, with questions answered so that they feel comfortable using it.
- ii. The participant uses the infographic during their coaching.
- iii. Afterwards the participant will be interviewed or complete a questionnaire. The purpose of the interview or questionnaire is to elicit the experience of the participant using the neuroscience-informed infographic.

- a. The interviews will be audio-recorded and will last no more than ninety minutes. My role as interviewer is to pose a question and not to contribute to the answer.
- b. Once ten interviews have been completed, remaining participants may be asked to complete a questionnaire instead of an interview.

Confidentiality

The recordings, transcripts and questionnaire responses will be held on a secure computer and only the researcher will have access to them. To maintain confidentiality, each participant will be given a cross-referencing code with the master list being kept in a password protected file.

Your data will be treated with full confidentiality and, if published, it will not be identifiable as yours. Data will be used in the doctoral thesis and may be used in other publications.

The research will be run in an ethical and professional manner under the governance of the University of Wales Trinity Saint David and the Association of Coaching's code of ethics.

Participant selection criteria:

To participate in the research, you need to be

- an experienced UK-based coach with at least 500 paid hours of individual business coaching (EMCC, 2015)
- coaching a coachee whose goals are at least 'noticeably' hampered by reflexive hindering, as defined by the Reflexive Hindering Outline attachment.

Consent to participate

If you would like to participate in the research, you will need to sign the consent form below (page 3).

Consent Form

“Towards a greater understanding of reflexive hindering within coaching, using a neuroscience-informed approach”

This consent form is designed to check that you understand the purpose of your role in the research, you are aware of your rights as a participant and to confirm that you are willing to take part.				
		Please tick as appropriate	Yes	No
1	I confirm that I have read the information sheet for the above study and understand the nature and purpose of the research.			
2	I confirm that I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.			
3	I understand my involvement in the research project.			
4	I am willing to participate in this research project.			
5	I understand my participation is voluntary and that I can withdraw at any point without question or prejudice at that point or in the future.			
6	I understand that all data will be treated with full confidentiality and that, if published, it will not be identifiable as mine.			
7	I understand that the researcher will hold all information and data collected in a secure and confidential manner. Only the researcher will have access to the data.			
8	I understand that I can ask for a debrief session after completing the interview or questionnaire.			
9	I understand that the interview will be audio recorded and that I can stop the recording at any point during the interview.			
10	I understand that for the questionnaire, I may omit questions that I do not wish to answer.			
11	I confirm that quotations from the interview or questionnaire can be used in the final research output and other publications. I understand that these will be used anonymously and that individual respondents will not be identified.			
12	I understand that I may contact the Research Director if I require further information about the research and that I may contact the research Ethics Co-ordinator of University of Wales Trinity St David if I wish to make a complaint relating to my involvement in the research.			

Name of Participant

Date

Signature

Appendix 9: Interview guide

Introduction

Thank you for completing this interview. I really appreciate it and the use of your time. The interview is confidential and anonymous. Are you ok for me to record the interview? It will also be stored securely. If at any time you wish to stop or stop the recording then please say so. It's ok to do that at any point. Once we are recording, I will ask you again if it is ok to record so that I have your permission as part of the recorded interview.

The purpose of the interview is to get you to reconstruct your experience (not to evaluate it or reflect upon it) – to get a rich description of your experience from all perspectives. So, all your answers are always correct and useful as they depict your experience. My questions are in no way a judgment or reflection upon you, your coachee or the coaching. I am purely interested in getting your lived experience of using the infographic, in all its glory from all angles. When all interviews are completed and analysed, we will have collectively beta tested the infographic and obtained lots of useful insights into using it. That is the important part.

I will take notes to allow you talk freely so that I can come back to it later.

During the interview I may go back over some aspects which is purely to help me obtain extra detail. Please interrupt me at any point, ask for clarity or chose your own direction to take. My questions are purposefully open to allow that to happen with minimal direction from me.

What questions do you have before we start?

Question 1: “Please tell me everything you can remember about your experience of using the infographic in the coaching session?”

Optional prompt questions could be:

- What did you do?
- What were you thinking/ feeling?
- What happened just before/ after ...?

- What was different?
- What was the experience reported to you by your coachee?
- What else did you notice?
- What challenged you?
- What was easier/ harder?

Question 2: “With respect to progressing the coaching goals, what value, if any, was derived from using the infographic?”

Optional prompt questions could be:

- How do you know that?
- What did you notice?
- What was reported by the coachee?
- What was different to previous sessions?

Question 3: “Is there anything else you’d like to tell me that I haven’t asked about?”

Optional probing questions as required.

Rating Questions:

1. Overall, what was the infographic like to use in the session?

Very difficult	Difficult	Somewhat difficult	Neither difficult nor easy/ ok	Somewhat easy	Easy	Very easy
----------------	-----------	--------------------	--------------------------------	---------------	------	-----------

Probe: “What would need to be different to move that answer more towards Very easy?”

2. Overall, how did it affect the progress of the coaching goals in the session?

Strongly detrimental	Detrimental	Somewhat detrimental	No affect	Somewhat beneficial	Beneficial	Strongly beneficial
-------------------------	-------------	-------------------------	--------------	------------------------	------------	------------------------

Probe: "What would need to be different to move that answer more towards Strongly beneficial?"

Appendix 10: Context data

Please complete the information below. If there is any question you would prefer to leave unanswered then please leave it blank. Many thanks, Deni		
This high level information will be valuable during the interpretation of the results.		
Data	Please input	Comments if required
Coachee's Job level - please enter eg. Head of, Senior manager, Team lead, Director, VP, Scientist ...		
Coachee Function - please enter eg. IT, HR, Marketing, Logistics, Production ...		
Coaching themes high level Please select up to 3 themes - click on cell for dropdown list, then click on arrow for options	Please select Coaching Theme Please select Coaching Theme Please select Coaching Theme	
Extent to which the Reflexive-hindering dynamic is present from Reflexive-hindering scale (see Tab at bottom to view it) - click on cell for dropdown list, then click on arrow for options	Please enter amount of reflexive hindering occurring	
Session medium (eg. In person) - click on cell for dropdown list, then click on arrow for options	Please enter coaching medium	
Date of session (dd/mm/yyyy)		
Session length (Please enter in minutes)		
Which session within the coaching programme was the Infographic used? Please enter as 3/6 (for example) which means that the infographic was used during the 3rd session out of a programme of 6 sessions.		
In brief, please list what neuroscience/ brain training you have undertaken. For example: Diploma or Masters Academic qualification / non-academic long programme / one or two day workshops/ masterclasses or sessions / self-learning through reading and online material.		
How often do you talk about neuroscience/ brain information within a coaching session? - click on cell for dropdown list, then click on arrow for options	Please enter typical frequency	
How often do you use neuroscience/ brain handouts/ diagrams / other material of any sort within a coaching session? - click on cell for dropdown list, then click on arrow for options	Please enter typical frequency	

Options for 'Please enter ..' boxes.

Please select Coaching Theme		Please enter amount of reflexive hindering occurring
Communication styles		0.5
Confidence building		1
Developing a strategic focus		1.5
Influencing		2
Leadership skills/ adapting styles		2.5
Managing through change		3
Matrix management		3.5
Personal brand/ reputation		4
Presence and personal impact		4.5
Promotion and transition		5
Resilience and wellbeing		5+
Self awareness/ emotional intelligence		
Work/life balance		
Please enter coaching medium		Please enter typical frequency
In person		Not at all / Rarely
Virtual with video		Occasionally
Phone		50/50
Virtual audio only		Frequently
Other		Always

Appendix 11: Thematic analysis theme statistics

Reasons for using the infographic	No. of coaches	No. of refs	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Why they chose that coachee	10	22	2	3	3	3	1	1	2	2	2	3
What they hoped the coachee would gain from the session	10	32	2	6	2	2	4	3	4	5	3	1
What other factors influenced them choosing this coachee	5	10	2	1		4	1		2			
Total	10	64	6	10	5	9	6	4	8	7	5	4

Familiarity with the infographic is needed	No. of coaches	No. of refs	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
To make it easier, more comfortable and feel more competent	10	15	1	2	1	1	3	1	2	1	1	2
To understand it all	8	15	2		1		1	5	1	2	1	2
Training helps	8	11	1		1	1	1	1		3	2	1
To tailor to coachee	4	4					1	1	1	1		
Total	10	45	4	2	3	2	6	8	4	7	4	5

Process	No. of coaches	No. of refs	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
What helped	10	79	6	3	9	9	7	5	7	14	10	9
What hindered	6	18		1			1	4	5		4	3
Total	10	97	6	4	9	9	8	9	12	14	14	12

Impressions of efficacy	No. of coaches	No. of refs	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Related to the infographic overall	10	57	3	11	7	6	4	6	6	4	4	6
Related to the session it enabled	10	24	1	4	3	3	2	1	1	2	2	5
Related to a belief in its usefulness	9	48		10	3	3	9	10	1	4	4	4
Related to certain elements on the infographic	9	37	2	2	1		7	4	2	9	3	7
Related to having the conversation	6	8			1	2		1	1		1	2
Total	10	174	6	27	15	14	22	22	11	19	14	24

Value derived from using the infographic for the coachee	No. of coaches	No. of refs	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
An explanatory understanding of brain function that makes it real	10	63	3	5	7	6	5	4	1	13	8	11
Real insights that make a difference	9	45	7	4	3	3	3	9		7	4	5
Creating a subject to object shift	7	23	4	1	8		2		3	3		2
Invigorates a commitment for action	7	23	6	1		3		1		5	3	4
Puts a focus on being kind to yourself and others	6	21	2	4	8			4	2	1		
Belief or hope that change could happen	5	12	4	3	1				1		3	
Total	10	187	26	18	27	12	10	18	7	29	18	22
(6 in total)			6	6	5	3	3	4	4	5	4	5

Value derived from using the infographic for the coach	No. of coaches	No. of refs	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Useful structure and aide-memoir	10	44	5	3	6	2	7	3	6	2	7	3
Created an immersive and instructive neurobiological exploration	9	34	2	2	3	6	4	6	2	3		6
Can be an easy to use neuroscience-based tool	7	16		3	4	1	2			1	2	3
Gave coach or coaching credibility	7	11	2	1	3	1	2		1			1
Enabled different conversations	6	21			3	4	3	6		2		3
A deeper understanding of neuroscience	5	15					7	2		1	2	3
Total	10	141	9	9	19	14	25	17	9	9	11	19
(6 in total)			3	4	5	5	6	4	3	5	3	6

Views on the infographic	No. of coaches	No. of refs	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Instructive and enlightening	10	60	6	2	8	5	4	7	5	7	4	12
Versatile	10	32	2	3	8	4	3	1	2	2	3	4
Visually daunting with lots of information to take in	9	39	8	2	4		6	3	4	8	2	2
Being evidenced based and credible is important	9	22	1	4	5	1	1		3	3	3	1
Infographic style works	7	29		7	6		2	3		2	4	5
Some aspects did not always work very well	5	18	1	3			8	1		5		
Differing views	5	17	3		1		5	3		5		
Total	10	217	21	21	32	10	29	18	14	32	16	24

Appendix 12: Completed UWTSD PG2 Ethics form



PG2 / E1 FORM

APPLICATION FOR ETHICAL APPROVAL

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of research activity: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

Full Name:	Denise Lyall				
Tick all boxes which apply:					
Member of staff:	<input type="checkbox"/>	Student:	<input checked="" type="checkbox"/>	Honorary research fellow:	<input type="checkbox"/>
Faculty/School/Centre:	Business & Management/ Wales Institute for Work-based Learning				
Campus:	Lampeter / Carmarthen				
E-mail address:	1707875@student.uwtsd.ac.uk / denialyall@gmail.com				
Contact Telephone Number:	07973273009				
<i>For students:</i>					
Student Number:	1707875	Undergraduate	<input type="checkbox"/>		
Programme of Study:	Doctorate in Professional Practice	Taught Postgraduate	<input type="checkbox"/>		
Director of Studies/Supervisor:	Dr Annette Fillery-Travis	Research	<input checked="" type="checkbox"/>		

SECTION B: Approval for Research Activity

Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)		YES	<input checked="" type="checkbox"/>	NO	<input checked="" type="checkbox"/>
					<i>Date</i>
If Yes, please indicate source of approval (and date where known):	Research Degrees Committee	<input checked="" type="checkbox"/>		05/10/18	
	Faculty Research Committee	<input type="checkbox"/>			
	Other (write in)	<input type="checkbox"/>			

July 2017

1

Ethical Approval Form v6

Approval in principle must be obtained from the relevant source prior to seeking ethical approval.

SECTION C: External Ethical Guidance Materials

Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines.	
Association for Coaching's Global Code of Ethics. V1.0 dated 10 th Feb 2016	<input checked="" type="checkbox"/>
UWTSD Research Integrity and Ethics Code of Practice	<input checked="" type="checkbox"/>
Keeney, S., McKenna, H. and Hasson, F. (2011) <i>The Delphi Technique in Nursing and Health Research</i> . 1 st edn. US: Wiley-Blackwell.	<input checked="" type="checkbox"/>

SECTION D: External Collaborative Research Activity

Does the research activity involve collaborators outside of the University?	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
If Yes, please provide the name of the external organisation and name and contact details for the main contact person:				
Institution				
Contact person name				
Contact person e-mail address				

Where research activity is carried out in collaboration with an external organisation

Does this organisation have its own ethics approval system?	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
If Yes, please attach a copy of any final approval (or interim approval) from the organisation				

SECTION E: Details of Research Activity

Indicative title:	Towards a greater understanding of coaching reflexive-hindering coachees, using a neuroscience-informed model.		
Proposed start date:	11/2019	Proposed end date:	06/2021
Purpose of research activity (including aims and objectives)			
Outline the purpose, aims and objectives of the research activity, including key research questions. Show briefly how existing research has informed the proposed activity and explain what the research activity will add and how it addresses an area of importance. (Maximum 300 words)			
Executive coaching explores and challenges a coachee's thinking allowing fresh perspectives or constructs to emerge, leading to new behaviours and thinking. Occasionally motivated coachees seem inwardly hesitant and unable to progress, although this inaction is not conscious. We identify them as 'reflexive-hindering coachees'.			
There are different types of coaching ranging from those concentrated upon new skill acquisition through to those seeking to effect change at the deepest levels of consciousness i.e. to enable a shift in how the self perceives, or is perceived, and the behaviour change that creates. The individual may resist such deep-seated change and these coaching conversations can trigger reactions aimed at maintaining the status-quo			
There is a wealth of coaching literature supporting the efficacy of coaching and its various approaches. The difficulties of reflexive-hindering coachees and the impact on the coaching			

process are discussed within it. Although there are some suggestions on how to work within that dynamic, the creation and sustainment of it within the coachee's mind is rarely discussed.

Recently neuroscience is enabling coachees to understand their unhelpful behaviours. Therefore, I am seeking to explore the effect a neuroscience-based model, that raises awareness of the reflexive hindering dynamic, has on the coaching of those coachees. My aim is to develop a greater understanding of coaching reflexive-hindering coachees, using a neuroscience-informed model that will help tailor coaching practices and enhance our understanding of the challenges these coachees face during coaching.

The objectives of the research activity are to investigate:

- What the coach's lived experience is of using the neuroscience-informed model in their coaching of reflexive-hindering coachees.
- With respect to progressing the coaching goals, what value, if any, is derived from using the model.
- What the model is like to use.
- How it affects the progress of the coaching goals.

Proposed methods
Provide a brief summary of all the methods that may be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. (Maximum 600 words)

Rationale
Coaching predominantly works with a coachee's interpretation of the world although there are objective aspects of any issue that influence the outcome. Neuroscience however takes a primarily objective stance in its empirical research, only using a more subjective stance in some data interpretation/ extrapolation. The research described here seeks to use knowledge generated within both disciplines. The epistemology of Constructionalism fits well, giving equal weighting to each perspective (Crotty, 1998).

Pragmatism contends that the research question drives the choice of methodology and methods. It is orientated towards what works in practical, real-world situations and views knowledge and truth as being constructed, based on reality and changing over time. Hence this paradigm provides a suitable basis for the subsequent choice of methods (Gray, 2014; Morgan 2014).

The research design seeks to collect and codify the lived experience of executive coaches as they coach reflexive-hindering coachees using a neuroscience-informed model. It also seeks to explore the effect this has upon the coaching outcomes. Collectively, these findings will then be used to inform the design of coaching practices for reflexive-hindering coachees.

The intended methodology is Multiple/ Mixed Methods research (McDonnell et al., 2017) which is strongly connected to Pragmatism. It creates the required flexibility for the research questions and emerging findings to determine the appropriate methods for delivering real-world action.

Methods

Preparation:
Create neuroscience-informed model raising insight into the reflexive hindering dynamic using neuroscience literature, a neuroscience-literate critical friend and an experienced coach (practitioner critical friend).

Develop related model information session.

Define the reflexive hindering dynamic using simple statements so coaches can consider the extent to which the reflexive hindering dynamic is present for a coachee. Determine the "include" threshold for participant selection.

Participant selection

Experienced coaches with coachees who meet the "include" threshold.

Participation commences following a signed consent form and is capped at 20.

Coaches use the model

Complete individual or group model information sessions either face to face or virtually.

The participants use the model during their coaching of said coachee.

Data collection

Contextual data: Coachee's job title; high-level coaching goal themes (predetermined list); extent to which the reflexive hindering dynamic is present; session medium (face to face, phone, virtual); typical session length; number of sessions completed: - before introducing the model, completed since and remaining.

Phase One

Conduct a recorded long interview (see below) with at least two participants. The themes emerging from these are used to inform the focus of any further long interviews and additional questions or methods required in order to fully explore the research questions.

Long interview (60+mins)

1. Phenomenologically informed questions:

- What was your experience of using the neuroscience-informed model in your coaching?
- With respect to progressing the coaching goals, what value, if any, was derived from using the model?

2. Bipolar Likert rating scale questions:

- Overall, what is the model like to use? (Very difficult – Very easy. Any comments?)
- Overall, how did it affect progress of the coaching goals? (Strongly detrimental - Strongly beneficial. Any comments?)

Phase Two

Further appropriate methods may be undertaken given the emerging findings and with agreement by the participants. Thus, participants may be required to complete a mixture of interventions across a number of months which may include: long, open or semi-structured interviews and questionnaires.

As a minimum, ten participants complete a long interview and, if participation allows, up to another ten participants complete a questionnaire version of the same questions.

Data Analysis

Thematically analyse recorded interviews, questionnaire's open questions and other appropriate data, using a critical friend to minimise bias and researcher interpretation.

Use descriptive statistics to show the Likert-type response ratings and other appropriate data.

Suitably synthesise the results.

References:

- CROTTY, M. (1998) *The foundations of social research: meaning and perspective in the research process*. London; Thousand Oaks; Calif: SAGE.
- EDMONDSON, A.C. and MCMANUS, S.E., 2007. Methodological Fit in Management Field Research. *The Academy of Management Review*, 32(4), pp. 1155-1179.
- GRAY, D.E. (2014) *Doing research in the real world*. (3rd ed) London: SAGE Publications.
- MCDONNELL, L., SCOTT, S. and DAWSON, M., 2017. A multidimensional view? Evaluating the different and combined contributions of diaries and interviews in an exploration of asexual identities and intimacies. *Qualitative research: QR*, 17(5), pp. 520-536.
- MORGAN, D.L. (2014) 'Pragmatism as a Paradigm for Social Research', *Qualitative Inquiry*, 20(8), pp. 1045-1053. doi: 10.1177/1077800413513733.

<p>Location of research activity Identify all locations where research activity will take place.</p>
<p>Interviews would be predominantly conducted face to face or virtually. For any face to face interviews either business/ academic premises, with rooms close to other people, or public places will be used.</p>
<p>Any virtual interviews would be conducted from the principal researcher's own business office which is suitably professional and equipped for undertaking them. This office is located near Aylesbury, Buckinghamshire, UK, at the registered address of the principal researcher's consulting company, Winning Performance Associates Ltd.</p>
<p>Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural sensitivities or vulnerabilities of participants.</p>
<p>Not applicable.</p>

SECTION F: Scope of Research Activity

Will the research activity include:	YES	NO
Use of a questionnaire or similar research instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Use of interviews?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Use of diaries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Participant observation with their knowledge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Participant observation without their knowledge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use of video or audio recording?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Access to personal or confidential information without the participants' specific consent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Performance of any acts which may cause embarrassment or affect self-esteem?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Investigation of participants involved in illegal activities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use of procedures that involve deception?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Administration of any substance, agent or placebo?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Working with live vertebrate animals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other primary data collection methods, please explain in this box	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If NO to every question, then the research activity is (ethically) low risk and may be exempt from some of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

Who are the intended participants:	YES	NO
Students or staff at the University?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Adults (over the age of 18 and competent to give consent)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vulnerable adults?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Children under 18?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Prisoners?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Young offenders?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
People engaged in illegal activities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Others (please identify):	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<p>Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?</p> <p>The research activity requires a minimum of 10, and a maximum of 20, participants who are experienced coaches (500+ hours of paid business coaching) and who are coaching a coachee where the presence of the reflexive hindering dynamic meets or exceeds the predetermined 'include' threshold using the reflexive hindering definition statements.</p> <p>It also requires one neuroscience-literate critical friend and one practitioner (experienced coach with 500+ hours of paid business coaching) critical friend.</p> <p>There are a number of avenues for recruiting coaches and the practitioner critical friend: Professionally the principal researcher is a member of two coaching communities with experienced coaches; a member of the Association of Coaching and will seek permission to recruit through the members area; co-runs a coaching forum; has DProf and professional colleagues who are members of other coaching organisations and networks who may provide names of coaches or gain access to their wider communities.</p> <p>Presently a UWTS DProf doctoral candidate colleague has been approached to act as a neuroscience-literate critical friend and they have indicated their willingness to do so. If required that colleague or my neuroscience supervisor can recommend other suitable people.</p>
--

Information for participants:	YES	NO	N/A
Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Will you tell participants that their participation is voluntary?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Will you obtain written consent for participation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If the research is observational, will you ask participants for their consent to being observed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will you tell participants that they may withdraw from the research at any time and for any reason?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
With questionnaires, will you give participants the option of omitting questions they do not want to answer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If NO to any of above questions, please give an explanation

Information for participants:	YES	NO	N/A
Will participants be paid?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is specialist electrical or other equipment to be used with participants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are there any financial or other interests to the investigator or University arising from this study?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If YES to any question, please provide full details			

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them.

If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.

Full risk assessment completed and appended?

Yes

No Not applicable

Risks to participants
 For example: emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information

The coaches initially approached may feel pressurised into helping so apart from the usual invitation documentation, it will be made clear that it is perfectly acceptable if they prefer not to participate.

During the model information session and data collection activities, the coaches need to feel able ask the questions they want to, to put forward their true views and for us to be able to explore their experience of using the model and the value it may have added. There is a possibility that they will only proffer information that: they think the principal researcher wishes to hear or avoids conflict;

<p>they feel will not make them look incompetent or wrong; that maintains the harmony of our relationship or other connections between us.</p> <p>Therefore, the presence of the principal researcher and the environment created need to be conducive to participants being open and comfortable. This is a fundamental capability that a coach needs to have with their coachees, although this dynamic is slightly different than for coaching. The principal researcher has over 2500 hours of coaching and has conducted over one hundred 360-feedback interviews; thus, they are confident that such a conducive environment can be created. The information sheet and initial conversations will help with this.</p> <p>The above risks are likely to be reduced with participants completing the questionnaire although not totally removed. Use of a third-party proprietary questionnaire application or a neutral person's email would help reduce it further, rather than an email from the principal researcher with an attached questionnaire.</p> <p>Although the data collection is about the coach's lived-experience of using the model, it needs to be clear that at no stage is their coaching or opinions being evaluated; that all their contributions are valued and appreciated. This will be reiterated at the start of the interviews and questionnaires. The research will be conducted with an attitude of appreciation.</p> <p>Those acting as 'critical friends', may feel pressurised into helping so apart from the usual invitation documentation, it will be made clear that it is perfectly acceptable if they prefer not to participate. Also, if their advice is not taken or modified then care needs to be taken as to how they may feel about this, thus setting expectations upfront will be important. Conversely, they need to feel comfortable with critiquing the proposals and giving sound, honest feedback so any reactions to that will be important.</p> <p>The participants are experienced coaches and are used to having this style of conversation themselves, which is likely to lessen the above risks.</p> <p>Overall, any concerns the principal researcher has during the research will be taken to the supervisors, both of whom are exceedingly experienced coaches and supervisors.</p>
<p>If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities</p>
<p>No risks are anticipated.</p>
<p>Risks to investigator For example: personal safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest</p> <p>As part of their business work, the principal researcher is accustomed to meeting people in a professional context, at their place of work or in public places and taking the proper safety precautions when doing so. If any concerns arose before or afterwards, they would be taken to the appropriate work supervisor. In this project they will be taken to the supervisory team, using the appropriate codes of conduct to resolve it.</p>

University/institutional risks For example: adverse publicity, financial loss, data protection All research will be conducted in a professional manner, to which the principal researcher is accustomed to, having worked within a business context for 33 years. It will be ensured that no risk is posed towards liability or the university's credibility.

Adverse outcomes List measures put in place to limit any adverse effects or outcomes of research activity where appropriate. Include any emergency protocols. If at any point either the participant or principal researcher feels uncomfortable, they can stop or withdraw from an interview or the research activity. No further adverse outcomes are anticipated. However, if the principal researcher has any concerns about possible adverse outcomes arising, they will be taken to the supervisory team, using the appropriate codes of conduct to resolve them.

Disclosure and Barring Service			
If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
Has a DBS certificate been obtained?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SECTION I: Feedback, Consent and Confidentiality

Feedback What feedback will be provided to participants, how will this be done and when? It will be explained to participants within the invitation and briefing email that the outcomes of the research will be made available to them upon request. An interviewee's transcript will be available to them on request. If emailed, it will be password protected and a separate email sent with the password.
Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded. Participants for main research activities (10-20 experienced coaches): Experienced coaches will initially be phoned or emailed to ascertain if they would be interested in participating. If they express an interest in participating an invitation, briefing sheet and the reflexive hindering dynamic descriptive statements will be sent. Any questions will be addressed. Only those where the reflexive hindering dynamic meets or exceeds the 'include' threshold and who wish to continue are taken forward. These remaining coaches are sent a Participant's Consent form. A completed and signed consent form is required before participation commences.

On the consent form it will be stated that participants may choose to withdraw, with no explanation required, once they have attended the model information session. This enables them to withdraw if they feel at all uncomfortable in using the model once they have more information on it.

Also, the participants are told that they may choose not too use the model whilst coaching a particular coachee even if they initially intended to, with no explanation required. This respects the coach's intuition for their coaching practice, coaching codes of conduct and the needs of their coachees. Coaches use an eclectic mix of theories, models and concepts drawn from many other areas, at any one moment aspects of these may be deemed useful or no longer valuable to use. (Cox et al., 2014) This model should be viewed no differently to how a coach uses these other inputs to inform their coaching practice and should be treated in the same way: This aspect will be made clear to the participants as well.

Practitioner critical friend

Experienced coaches will initially be phoned or emailed to ascertain if they would be interested in participating. If they express an interest in participating, an invitation and briefing email will be sent, with the consent form attached. Any questions will be addressed. The signed consent form is required before participation takes place.

Neuroscience-literate critical friend

Presently a UWTS DProf doctoral candidate colleague has been approached to act as a neuroscience-literate critical friend and they have indicated their willingness to do so. Should they decide to withdraw then other suitable neuroscience-literate critical friends will initially be phoned or emailed to ascertain if they would be interested in participating. If interested, they will be sent a briefing email and consent form. Any questions will be addressed. A completed and signed consent form is required before participation commences.

Reference:

COX, E., BACHKIROVA, T. and CLUTTERBUCK, D., 2014. Theoretical traditions and coaching genres: Mapping the territory. *Advances in developing human resources*, 16(2), pp. 139-160.

Confidentiality / Anonymity

Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.

Guidelines for addressing issues of confidentiality and anonymity will be adhered to.

All electronic data will be held on a password protected computer. Participants will be given a code that is held in a password protected master file containing all cross-referencing information.

Collected data will be cross-referenced using the code before any analysis. Recordings and transcripts will be date/time referenced only. Any transcript emailed will be password protected and a separate email sent with the password.

All information in the final report will be anonymous. Any data shared will be anonymised. Only the researcher and supervisors, if appropriate, will know who provided which input.

SECTION J: Data Protection and Storage

In completing this section refer to the University's Research Data Management Policy and the extensive resources on the University's Research Data Management web pages (<http://uwtsd.ac.uk/library/research-data-management/>).

	YES	NO
Does the research activity involve personal data (as defined by the Data Protection Act)? <i>"personal data" means data which relate to a living individual who can be identified—</i> <i>(a) from those data, or</i> <i>(b) from those data and other information which is in the possession of, or is likely to come into the possession of, the data controller, and includes any expression of opinion about the individual and any indication of the intentions of the data controller or any other person in respect of the individual.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If YES, provide a description of the data and explain why this data needs to be collected:		
The participant's name, business phone number and business email will be collected so that appropriate information and/or questionnaires can be sent and interviews, meetings or calls can be arranged. 'Skype for Business' will be not used for virtual meetings so that no further information, such as a Skype address, is required.		
Does it involve sensitive personal data (as defined by the Data Protection Act)? <i>"Sensitive personal data" means personal data consisting of information as to –</i> <i>(a) the racial or ethnic origin of the data subject,</i> <i>(b) his political opinions,</i> <i>(c) his religious beliefs or other beliefs of a similar nature,</i> <i>(d) whether he is a member of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992),</i> <i>(e) his physical or mental health or condition,</i> <i>(f) his sexual life,</i> <i>(g) the commission or alleged commission by him of any offence, or</i> <i>(h) any proceedings for any offence committed or alleged to have been committed by him, the disposal of such proceedings or the sentence of any court in such proceedings.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If YES, provide a description of the data and explain why this data needs to be collected:		

Will the research activity involve storing personal data on one of the following:	YES	NO
Manual files (i.e. in paper form)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
University computers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Private company computers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Home or other personal computers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
"Cloud" storage or websites?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Other – specify: mobile phone	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>For all stored data, explain the measures in place to ensure data confidentiality, including details of password protection, encryption and anonymisation:</p> <p>Emails are held on the email host servers as part of usual email use. Emails are encrypted and the accounts are password protected.</p> <p>All electronic data will be held on a password protected computer. Participants will be given a code that is held in a password protected master file containing all cross-referencing information.</p> <p>Collected data will be cross-referenced using the code before any analysis. Recordings and transcripts will be date/time referenced only so that participants will not know their cross-referencing code if they request copies of them.</p> <p>The computer is protected by Norton Security and automatically updates its protection regularly.</p> <p>The mobile phone is a recent Samsung S9 and is protected by Samsung's security systems. The phone can only be accessed by finger print recognition or a password known only to the principal researcher. The phone's system is regularly and automatically updated by Samsung and the phone's screen auto locks when unused. It is likely that if the participant is being met face to face that their contact details will be required on the phone in case of short notice change to the meeting. Their contact details will also be on the phone if a phone call took place at any point.</p>		
Will the research activity involve any of the following activities:	YES	NO
Electronic transfer of data in any form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sharing of data with others at the University?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sharing of data with other organisations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Export of data outside the European Union or importing of data from outside the UK?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use of personal addresses, postcodes, faxes, emails or telephone numbers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Publication of data that might allow identification of individuals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use of data management system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Data archiving?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>If YES to any question, please provide full details, explaining how this will be conducted in accordance with the Data Protection Act (and/or any international equivalent):</p> <p>All computers and email accounts used are password protected. The participant's name, business phone number and business email will be collected. All data collected will only be referenced by a code. Data shared will be anonymised with no code or name.</p> <p>The university supervisors may have access to the data, and names if necessary, as required, to give guidance throughout the research.</p> <p>If requested, participant's own transcripts may be sent to them. If emailed, it will be password protected and a separate email sent with the password.</p> <p>Business/University emails will be used which are password protected and encrypted. The Researcher's computer is protected by Norton Security and automatically updates its protection regularly.</p>		

List all who will have access to the data generated by the research activity:
<p>The principle researcher, and two supervisors: Dr Annette Fillery-Travis is Lead Supervisor and UWTSD's Head of the Wales Institute for Work-based Learning</p> <p>Professor Paul Brown. Dr Brown is Professor of Organizational Neuroscience at Monarch Business School. He is a well-published author (books and journal articles) and thought leader, speaking widely on the applications of emerging neuroscience. Dr Brown is a qualified clinical and organisational psychologist and executive coach, with an international practice. He supports the National Science Council of the Prime Minister's Office in Laos for the development of applied neuroscience throughout that country and holds a number of other Advisory positions.</p> <p>'Critical friends' will have access visually to relevant aspects of the data whilst aiding with various analysis processes. This data will be anonymous.</p>
List who will have control of, and act as custodian(s) for, data generated by the research activity:
The principal researcher.
Give details of data storage arrangements, including where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.
Data generated by this research will be stored on computers which are password-protected. Data will be anonymous, and used only for the research purposes outlined. All data will be erased/ destroyed once all analysis is complete in accordance with UWTSD Research guidelines. Data is regularly backed up onto a password protected external hard drive.

SECTION K: Declaration

<p>The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants.</p> <p>In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice</p>	
Signature of applicant:	D A Lyall
Date:	31/07/2019

For students:

Director of Studies/Supervisor:	Dr Annette Fillery-Travis
Signature:	A. Fillery-Travis
Date:	02/08/2019

For staff:

Head of School	
Signature:	
Date:	

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

<input checked="" type="checkbox"/>	I have read the guidance notes supplied before completing the form.
<input checked="" type="checkbox"/>	I have completed ALL RELEVANT sections of the form in full.
<input checked="" type="checkbox"/>	I confirm that the research activity has received approval in principle
<input type="checkbox"/>	I have attached a copy of final/interim approval from external organisation (where appropriate)
<input type="checkbox"/>	I have attached a full risk assessment (and have NOT completed Section H of this form) (where appropriate)
<input checked="" type="checkbox"/>	I understand that it is my responsibility to ensure that the above-named research activity will meet the University's Research Ethics and Integrity Code of Practice.
<input checked="" type="checkbox"/>	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Head of School.

RESEARCH STUDENTS AND STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name. You will be informed of the outcome of your claim by email; therefore it is important that you check your University and personal email accounts regularly.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.