Exploring interoception through a psychoanalytic lens: an analysis of the relationship between the neuropsychological concept of interoception and the psychoanalytic concept of countertransference.

L. D. C. Balfour

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University of Essex

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Abstract

This study examines the phenomenonof interoception – an individual's perception or sense of their own body state (Pollatos, 2007) - and countertransference – the emotional experiences and reactions provoked in the therapist by a patient (Heimann, 1950). The study looks specifically at embodied countertransference – '*the spontaneous arousal of physical feelings in the therapist…'* (Field, 1989: p.512). It employs theoretical and empirical research methods, both qualitative and quantitative, in order to capture something of the tension existing between empirical observation and the subjective emotional realm of feeling and intuition.

The study explores links between interoceptive capacity and countertransference. Thirty-seven trainee child psychotherapists completed a qualitative countertransference questionnaire and Egan and Carr's (2005) Body-Centred Countertransference Questionnaire. They performed an established interoceptive accuracy assessment (Heartbeat Counting (Schandry, 1981)) and completed a confidence measure pertaining to it. Data from the Heartbeat Counting task was used to generate a metacognitive measure of interoceptive awareness (Garfinkle et al, 2015).

Empirical data pertaining to interoceptive capacity and body-centred countertransference were considered together, for the sample group as a whole and

between training year groups, in order to explore the overarching research question: *Is there a relationship between interoception and countertransference?*

Results: Interoceptive accuracy was not shown to increase with years of training in child psychotherapy. A statistically significant, non-linear, relationship between reported confidence on the interoceptive accuracy task and year of training was observed however; and interoceptive accuracy and reported confidence were also shown to be positively correlated. As a sample group, child psychotherapy trainees only approached 'interoceptive awareness'. Embodied countertransference phenomena were universally reported, increasing in frequency with year of training to Year 3.

In the qualitative research, countertransference emerges as a vital, albeit *'opaque and disturbing'* tool, enabling the trainees to 'go beyond words' in their work with children and young people. A striking homogeneity was observed in participant responses, raising questions about the place for doubt and alternative perspectives upon a phenomenon much debated in psychoanalytic theory and the research literature.

This a unique study contributing to the research literature in Child Psychotherapy. It highlights potential links between interoception and countertransference. Results may have implications for the training of Child Psychotherapists, in particular, to the

attention that is paid to physical experiences. Further study of trainees and qualified psychotherapists may yield more connections between these two phenomena.

Introduction

'Go to your bosom; knock there; and ask your heart what it doth know.'

Measure for Measure, Act 2, Scene II

Shakespeare (1604)

Interoception refers to an individual's perception or sense of their own body state, for example: heartrate, temperature, breathing, or gastrointestinal feedback (Pollatos, 2007). Studies suggest that the generation and perception of bodily responses are a pivotal source of variability in emotional experience and intuition (Dunn et. al, 2010). Individuals who are better able to identify their body's internal signals, those identified as having 'greater interoceptive accuracy', tend to be more emotional and more sensitive to their 'feelings' (Dunn et. al, 2010). Those with high interoceptive accuracy have also been shown to score better on emotional intelligence tests (Schneider et. al, 2005). In the latter, higher interoceptive accuracy was shown to correlate with an increased ability to understand emotions and to use emotions to enhance task performance. Intriguingly, interoceptive accuracy is also associated with increased symptoms of anxiety (Pollatos et. al, 2007b).

Emotion and its role in social communication are pivotal to understanding the evolution of the brain (MacLean, 1970; Turner, 2000; Gerhardt, 2004) and human social life (Balberine, 2001). Antonio Damasio (1999) proposes that emotions are not only a crucial part of homeostatic regulation, but key to the development of consciousness and ultimately selfhood.

Developing an understanding of emotional and relational experience is paramount in the training of child and adolescent psychoanalytic psychotherapists. Attention to feeling states, whether their own or their patient's, is a vital aspect of the child psychotherapist's work. Child psychotherapy trainees must develop a capacity to be open to, observant of and reflective upon feeling states within the therapeutic setting and have a framework for understanding them within relationships.

Child psychotherapy trainees were chosen as the focus of this study because of the emphasis upon emotional experience; and the need for sensitivity to feeling states within training, providing a potential link to existing research on interoception (Dunn et al. 2010). Furthermore, it was speculated that this emphasis would promote an increased emotional sensitivity and awareness with years of training; and, as such some change in interoception might be observed.

Countertransference is a complex and controversial concept, used in psychoanalytic thinking to refer to the emotional experiences and reactions provoked in the

therapist by a patient. It is considered by some to represent a part of the patient's communication to the therapist, and is widely accepted as indicative of the dynamic emotional interplay in the relationship between patient and therapist.

Undertaking research into countertransference amongst child psychotherapy trainees provides a unique opportunity to explore how this phenomenon is understood and experienced by those training in the profession, hitherto unexplored in the research literature. The diverse nature and needs of the infants, children and young people with whom trainees are required to engage (ranging in age from 0 – 25 years) demands a willingness to communicate and work in a particularly embodied way; arguably, making child psychotherapy trainees a population likely to be in touch with body-centred countertransference.

This study's overarching research question asks:

Is there a relationship between interoception and countertransference?

This question is explored with particular reference to countertransference experiences identified as 'embodied' or 'body-centred'.

The research is a mixed methods study, incorporating a theoretical and experimental design. The theoretical aspect of the study consists of a comprehensive (albeit not exhaustive) literature review and conceptual synthesis,

exploring the neuropsychological concept of *interoception* and the psychoanalytic concept of *countertransference* with particular attention to *embodied countertransference*. The experimental aspect of the research involves an assessment of the interoceptive accuracy of child psychotherapy trainees, based at the Tavistock and Portman NHS Foundation Trust, using the Heartbeat Counting Task (Schandry, 1981); alongside which, two questionnaires investigate their experiences of 'countertransference'.

Aims

This research project investigates the neuropsychological concept of interoception through a psychoanalytic lens, asking:

Is there a relationship between interoception and countertransference?

Specifically, interoception will be considered in relation to the psychoanalytic concept of countertransference, with particular attention to the phenomena of embodied countertransference. The objectives of the study are:

- To explore theoretically the neuropsychological concept of interoception and the psychoanalytic concept of countertransference; and where appropriate to draw links between them.

- To measure empirically the interoceptive accuracy of child psychotherapy trainees on the Professional Doctorate in Child and Adolescent Psychoanalytic Psychotherapy at the Tavistock.

- To explore how child psychotherapy training potentially impacts upon interoceptive capacity through a between year group comparison.

- To explore child psychotherapy trainees' understanding and experience of countertransference, including embodied countertransference, in their clinical practice.

- To examine the possibility of a relationship between interoception and the experience of countertransference phenomena.

Key words: interoception, countertransference, embodied / body-centred / bodily / somatic countertransference, psychoanalysis, psychotherapy, child and adolescent psychotherapy, training.

The Theoretical Review

Methods

The Theoretical Review comprises a conceptual overview of the key areas of inquiry, those of *interoception* and *countertransference,* with a focus upon the research literature pertaining to *embodied countertransference* and *interoception.* A conceptual synthesis is integrated into this section.

The following search strategy was used to identify research papers considered within the review.

Search Strategy

- The database PSYCHinfo was chosen for the literature searches undertaken as it was considered most likely to produce relevant results.
- An initial search ascertained that no previous research had been undertaken incorporating *interoception* and *countertransference* (Table 1).
- These two concepts were then considered separately.
- Key words and their synonyms were entered individually into the electronic database. The Boolean operator term OR was then used to combine key words conceptually. Searches were run for each concept. The Boolean operator AND was used to combine concepts (Table 1).

- Database search expanders were turned off.
- Limiters were applied to results generated: empirical studies, English language only, academic journals, full title available.
- All titles were scanned for relevance, with attention paid to citations accrued by papers as an indicator of their significance to the body of research evidence.
- The abstracts of selected papers were then read and from these, papers were chosen for more detailed review.
- Finally, an iterative process was employed to identify papers which had not been captured in the database search. This involved reviewing the reference lists of papers read.

Table 1. *PSYCHinfo literature search: interoception and countertransference*

Search Terms	**Number of papers returned.**
Countertransference AND interoception	0
Countertransference	682
Countertransference AND embodied OR body-centred OR body centred OR bodily OR somatic	24
Interoception OR interoceptive	157

Table 1 presents results of a literature review conducted on the PSYCHinfo database for the key terms 'countertransference' and 'interoception', their synonyms, and the Boolean Operators employed. Limiters applied: empirical study, English Language, academic journals, full text available.

A separate literature search, following the strategy above, was conducted to ascertain whether there is empirical evidence for the impact of training in Child and Adolescent Psychoanalytic Psychotherapy upon emotional awareness in those who undertake the training. Key words, their synonyms and results generated are reported in Table 2.

Table 2 *PsychoInfo literature search: child and adolescent psychotherapy training and emotional awareness*

Search Terms	**Number of papers returned.**
child OR adolescent OR child and adolescent AND sensitivity OR development OR intelligence OR understanding OR awareness AND emotional OR emotion AND training OR education AND psychoanalytic OR psychoanalysis AND psychotherapy OR psychotherapist	83
sensitivity OR development OR intelligence OR understanding OR awareness	1072,215
emotional OR emotion	1572,246
training OR education	414, 616
psychoanalytic OR psychoanalysis	108,396
Psychotherapy OR psychotherapist	233, 402

Findings

Table 1 demonstrates the broad interest in countertransference as an area of research and interoception, to a lesser extent. Studies pertaining to embodied countertransference are more limited.

Table 2 shows that although a plethora of studies are available for each of the key search terms, when these were combined to address the question as to whether there is empirical evidence for the impact of training in Child and Adolescent Psychoanalytic Psychotherapy upon emotional awareness, while 83 papers were produced by the search, study titles revealed that none were relevant. This finding will be returned to in consideration of the study's limitations.

Countertransference

The psychoanalytic concept of countertransference holds varied meaning. The concise definition of Laplanch and Pontalis (1973) - *'The whole of the analyst's unconscious reactions to the individual analysand [patient] – especially to the analysand's [patient's] own transference'* (1973: p. 92) - belies the potential complexity of the term and the experiential phenomena it represents. Countertransference has been, since the designate was first introduced by Freud

(1910), the locus of both controversy and creativity in the development of psychoanalytic theory and practice.

The potential for difficulty comes quickly to the fore. The definition above refers to countertransference as the *'whole'* of analyst's *'unconscious reactions'* (Laplanche & Pontalis, 1973: p. 92), begging the question: how do unconscious reactions come to be known and meaningfully contemplated? If countertransference is to be spoken of, these unconscious reactions, or evidence of them, must necessarily have become conscious. Would countertransference be more meaningfully determined as: the analyst's 'once' unconscious reactions to the patient, now consciously considered?

Despite the difficulty that a cursory scrutiny of the term reveals, countertransference is a concept which has been widely adopted by therapists and thinkers of many different traditions (Pearlman and Saakvitne, 1995). An overview of the meaning and significance of countertransference is provided below before *embodied countertransference* is specifically considered.

Defining Countertransference

In 1910, Freud described a countertransference as arising from *'…the patient's influence on his [the analyst's] unconscious feelings…'* (1910: p. 144) going on to stress that *'…no psychoanalyst goes further than his own complexes and internal resistances permit…'* (1910: p. 145).

Countertransference is understood by Freud as the unconscious feelings of the analyst provoked by contact with a particular patient, arising in part from the analyst's own limitations and psychopathology. Freud acknowledges that in the meeting of analyst and patient, the analyst's own unconscious is at play, in countertransference. As such, countertransference is a private matter for the analyst and not evidence for what may be taking place within the therapeutic relationship. It is to be mastered through the analyst's personal analysis, preventing an impediment to analytic work.

In Freud's introduction of countertransference, latent questions fundamental to the process of analytic practice emerge: what is the nature of the influence/direction of influence, of one individual upon the other (analyst –> patient, patient –> analyst)? What is the mechanism of influence, how is influence mediated? How can this be known and understood?

A marked shift in the psychoanalytic approach to countertransference was articulated in Paula Heimann's (1950) paper, 'On Countertransference'. Here, apparently in contrast to Freud, Heimann stated that countertransference could and should be used as a tool in psychoanalytic work. Countertransference is defined by Heimann as including: *'…all the feelings which the analyst experiences towards the patient…'* (1950: p. 81). The emotional reaction of the analyst to the patient, which

can at least to some extent be consciously known, is considered to provide valuable information about the patient's unconscious.

For Heimann, an analyst's experience of countertransference is intimately related to the patient. It is *'…not only part and parcel of the analytic relationship, but is the patient's creation, it is the patient's personality…'* (1950: p. 84). Countertransference is crucial for understanding.

Hinslewood and Robinson (2006) assert that in Heimann's articulation, *'…counter-transference was…reversed from being an interference to becoming a potential source of vital confirmation…'* (2006: p.151).

Heimann's view was controversial despite attempts to present her departure from Freud along terms of continuity rather than rupture (Hinslewood & Robinson, 2006). She pointed out that the matrix of Freud's ideas about the 'resistances' to analytic endeavour presented by patients, in fact came from Freud's own clinical experiences (Heimann, 1950). As such, an understanding of resistance might be considered to be knowledge acquired through the countertransference.

Over the second half of the 20th Century, countertransference came to be more broadly understood as encompassing the reactions of therapist to patient: conscious and unconscious; emotional and cognitive; intrapsychic and behavioural. Countertransference has been conceived as constructed of both the

communications (conscious and unconscious) of the individual patient to the analyst/therapist; and the unique offering of the specific analyst/therapist's own internal world (including their psychopathology) within the relationship (Racker, 1957 & 1968; Cashdan, 1988; Aron, 1995). Joseph (1985) articulates an understanding of the therapeutic encounter, as one of '*total situation'* (1985: p.447), involving a live and ever-changing relationship. Countertransference is conceived as an *'essential tool'* (1985: p. 447) by which the therapist can come to realise communications beyond words.

Gabbard (1995 & 2001) suggests that countertransference is the creation of patient and therapist - such an approach requires discernment, however, in considering the extent to which a therapist's countertransference belongs with the patient or is a factor of their own personhood. This 'totalistic countertransference' perspective (Hayes, 2004), is challenged in a third, contemporary view: 'integrative countertransference' (Gelso & Hayes, 2002). This approach locates the aetiology of countertransference once again more firmly with the therapist and is defined as *'…therapist reactions to clients that are based on the therapist's unresolved conflicts…*' (Hayes, 2004: p. 23).

This definition is considered by those who would promote it as less narrow than the 'classic' (Freudian) perspective, as countertransference can be both conscious or unconscious, and is provoked in response to transference or other phenomena.

Promoters of 'integrative countertransference' argue that it *'…encourages therapists to take responsibility for their reactions, identify the intrapsychic origins of their reactions, and attempt to understand and manage them...'* (Hayes, 2004: p. 23).

Projection, Projective Identification and Countertransference

In seeking to understand countertransference, it is necessary to consider 'projection' - another vital aspect of psychoanalytic thinking. Perhaps not unlike countertransference, projection is a multifaceted theoretical concept and set of clinical phenomena which, along with projective identification, continue to be the subject of debate and evolving understanding (Spillius & O'Shaughnessy, 2012). Here a short summary of these ideas is provided, recognising that a fuller discussion of these complex concepts is beyond the remit of the current Theoretical Review.

Whilst acknowledging that the term projection is used in psychoanalytic theory to refer to a number of *'…related but distinct mental processes…'* (pg. 125), David Bell (2001) identifies as central to projection the *'relocation of mental contents onto the representation of the outer world. Something that was internal is now viewed as existing in external space…'* (ibid). This psychoanalytic understanding is contiguous with the historical definition and aetiology provided by the Shorter Oxford English Dictionary (1933) as '*throwing or casting forth or forward*' (use from 1599) and *'the forming of mental objects'* (use from 1599) (ibid, pg. 1595). Furthermore,

philosophical metaphors such as Plato's Cave[1] may point to an understanding of psychic processes involving projection in classical philosophy (Plato, 375 BC).

Melanie Klein is with credited with identifying and articulating the importance of projection as intrinsic to mental life. Whilst Freud wrote of projection in terms of psychic processes of defence (1911), Klein's contribution is in the assertion that projection and projective processes can be understood as a fundamental aspect of normal development (1946; 1952). Klein describes an alive and potent unconscious mind, a place of constant activity, where reality and phantasy perpetually mingle (shaping one another). In the Kleinian mind, processes of introjection (taking in) and projection (throwing out) are continuous from the beginning of life (Klein, 1958) and the mind is necessarily both recipient of external stimuli (introjects) and the author of experiences (projections). Processes of introjection and projection influence each other in a circulatory way which is inextricably informed by 'experience' and unconscious phantasy.

[1] In his allegory of The Cave, Plato articulates a metaphor which contrasts the way in which we perceive, and believe what we perceive to be real, and what is ultimately so, beyond the confines of sensory perception. Within the cave (sensory perception) people perceive shadows upon a wall – they do not see the objects which make the shadows as they are in and of themselves, outside of the caves confines.

Klein recognised as of particular significance the process of 'projective identification', describing this as an unconscious activity in which the individual splits off unwanted, unbearable, or alien (in the sense of incomprehensible as belonging) parts of the self and projects these 'into' the other. These parts may then be experienced as possessions of the other and related to as such, when in fact they truly belong to the self (Klein, 1952).

These ideas have received crucial development in the thinking of post-Kleinian psychoanalysts, perhaps for the focus of this study most significantly in the work of Bion (1962). Bion identifies the unconscious yet communicative aspect of projective identification. In his theory of mental development through mother – infant interaction, Bion draws out the importance not only of the activity of projection out of the infant into the object (mother) but also of the mother's capacity (unconscious) to receive this projection, allow herself to be affected by it and return it to the infant transformed into something bearable which no longer has to be eliminated from the self (ibid).

Bion's work arguably is a gateway for thinking about the potential mechanisms of unconscious communication involved in countertransference. Indeed, it might be contended that the analyst's role in facilitating her patient is outworked through the model identified by Bion in the infant's development of thinking (through what

might be conceived of as the borrowing of the maternal capacity to think, or process experience, before the infant is in possession of these capacities).

From this perspective, countertransference phenomena might be understood as arising within the analyst as the result of her being the recipient of unconscious projections from the patient. How this is understood depends significantly upon the theoretical position taken in relation to countertransference – principally, the extent to which countertransference is conceived of as belonging to the realm of conscious or unconscious life; and the extent to which it might be possible to come to feel and recognise a movement between the two.

Significantly, Bion also identified the potentially destructive power of projective identification. In his 1959 paper, 'Attacks on Linking', Bion drew attention to the capacity of the patient, through projective identification to destroy closeness to the analyst. Bion describes patients able to produce 'symptoms' within the analyst, which some might identify as 'countertransference', such as stutters and sleepiness – with unconscious intent to uncouple.

Bell (2001) cautions against the conflation of projective identification as theoretical construct (explaining unconscious mental mechanisms) and clinical experience, in the form of a conscious 'effect' upon the external object. This consideration is potentially of relevance here in considering how projective identification and

countertransference might be related and spoken of meaningfully in examples of clinical work.

Summary

Whilst an attempt has been made above to draw some distinction between projection and projective processes generally and projective identification specifically, it may be helpful to conceive of them as existing on a continuum: with distinctions drawn between the extent to which projection is made 'onto' or 'into' the external object; and the extent to which these are experienced consciously or unconsciously.

Theoretically, countertransference is indubitably a projective process. Whether it can be understood as a 'communicative' process which can be or be brought into consciousness may influence the extent to which it is further conceived as impediment or aid to psychoanalytic work.

Spillius and O'Shaunessey (2012) state that *'…the concept of projective identification gives a name to, and a clarification of, the dynamics of direct communication and the phenomena of transference and countertransference that are universal among humankind...*' (pg. 366) and as such that this is not limited to the consulting room and the clinical situation – but rather are universal in human communication. Furthermore, they suggest that projective identification is what Freud was 'questing'

for (ibid) when he wrote that *'...it is a very remarkable thing that the Unc. of one human being can react upon that of another, without passing through the Cs. This deserves closer investigation'* (Freud 1915b, pg. 194).

Empirical Research

While the clinical literature, comprised of case studies on countertransference, is plentiful, other forms of empirical research into the phenomenon have remained more limited until recently (Zittel & Weston, 2003; Betan et al. 2004; Hayes et al. 2004). Countertransference is currently recognised as an expansive area of research interest which requires quantitative and qualitative research methods in its exploration (Kachele et al. 2015).

Kächele and colleagues (2015) have attempted to organise and evaluate the range of empirical approaches employed in countertransference research. They acknowledge that attempts to measure countertransference have long been avoided, suggesting this may be partially due to countertransference occurrence across a potentially daunting area of influence, *'…from microprocesses to global clinical phenomena…'* (p. 96).

There are those, such as Betan et al. (2005), who hold that countertransference phenomena can be measured in *'…clinically sophisticated and psychometrically*

sound ways that tap the complexity of clinicians' reactions toward their patients…' (2005: p. 890).

These researchers employed the Countertransference Questionnaire developed by Zittel and Weston (2003) to assess a sample of 181 psychiatrists' and clinical psychologists' countertransference reactions to randomly selected patients within their care. These reactions were considered alongside the patient's known diagnosis. Countertransference reactions were considered to be:

> *'…systematically related to patients' personality pathology across therapeutic approaches, suggesting the clinicians, regardless of therapeutic orientation, can make diagnostic and therapeutic use of their own responses to the patient…'* (Betan et al. 2005: p. 890)

Despite the growing empirical evidence for the diagnostic and therapeutic usefulness of countertransference, disagreement continues over what countertransference is. This will be further evidenced in considering literature pertaining to embodied countertransference. Fundamentally, this is a debate over the aetiology of an individual's intersubjective experience; and may ultimately defy fixed and final resolution.

In summary, whether an individual therapist's experience of countertransference is considered to be: a) something emanating from that therapist's inner world

(including their own psychopathology) provoked by contact with the patient; b) derived from conscious and unconscious communications of the patient; or c) a factor of the interplay of the conscious and unconscious of both parties in the therapeutic dyad, is a question of tremendous technical and conceptual significance, even if it cannot be conclusively resolved. At heart it is a debate of attribution, and affiliation to a particular aetiological perspective determines the extent to which countertransference can be considered a legitimate tool within the psychoanalytic process and, how that tool should be employed.

Defining Embodied Countertransference

Field (1989) defined embodied countertransference as the: *'…specific but little-discussed manifestation of the countertransference: namely the spontaneous arousal of physical feelings in the therapist…'* (1989: p. 512). He asserted that countertransference (here referred to in general terms) has four forms through which it makes itself known:

1. By the evocation of specific feelings towards the patient.
2. Through the emergence of fantasies related to the patient.
3. In the therapist's dreams.
4. In the therapist's acting-out.

Embodied countertransference Field places in the fourth category. He distils three questions to address to the phenomenon (reflecting those pertaining to countertransference more generally.):

1. Are bodily sensations experienced by the therapist meaningful and evidence of unconscious communication from the patient?
2. If so, do they have therapeutic significance?
3. And, what mechanism enables such messages to be transmitted? (Field, 1989)

Field describes examples of embodied countertransference from his clinical practice, focusing on: 'sleepiness', 'sexual and erotic arousal', and 'fear and trembling'. Clinical vignettes are provided as illustration, noting how each bodily symptom experienced through one lens might be perceived as evidence of flaw in the analyst and failure of technique, but if considered as an unconscious communication from the patient, can be of great value to the therapeutic work. Bodily sensations experienced by the analyst are understood to provide an opportunity for insight into *'…primitive levels of communication…'* and *'…states of fear, rage, longing and hunger where no words were available and psychic trauma could not be distinguished from physical injury…'* (1989: p. 512).

Field's view is that the analyst has capacity, through their body, to come to know something of the patient that cannot otherwise be shared in words. He suggests that these experiences may be more or less actively interpreted.

Field also suggests the act of experiencing entailed in embodied countertransference (more or less conscious in the analyst), and the passing back and forth of unconscious bodily communications that can occur between analyst and patient, may in itself have therapeutic value e.g. potentially reworking preverbal experiences. This resonates with the thinking of McDougall (1979) who asserted that patients who have suffered severe preverbal trauma may make communications through action and somatic symptoms, where words cannot be used.

Thus, Field moves far beyond the idea that bodily countertransference can be considered to be marginal, or even dismissed as poor technique, but rather asserts that it is *'…a central feature…nearer the heart of the matter…'* (1989: p. 521). However, addressing his third question, *what mechanism enables such messages to be transmitted?* (Field 1989), Field acknowledges it is ultimately impossible to discern definitively what belongs to whom in any particular countertransference feeling.

More recently, Stone (2006) uses the metaphor of a resonating tuning-fork to articulate his understanding of embodied countertransference, suggesting: *'…that*

the resonance occurs when the analyst's tuning fork vibrates with the patient's psychic material through the unconscious…' (2006: p. 110)

Stone too asks a series of questions about the experience of embodied countertransference:

1. Why does countertransference resonate in the bodies of some analysts and not others, in response to some patients and not others?
2. What conditions produce somatic responses?
3. Is there a theoretical framework to understand embodied countertransference? (2006: p.110)

Stone seeks answers in a review of the psychoanalytic literature and in the examination of a case study. Three conditions are found commonly to coalesce where embodied countertransference resonates: *'…the pathology of the patient; the patient's inhibition to express strong feelings directly and consciously; and the typology of the analyst.'* (2006: p.120)

Patients most likely to provoke somatic reactions are those with:

> *'…borderline, psychotic or severe narcissistic elements; where there are basic instinctual problems (sex, aggression, eating disorder); or where there has been early, severe childhood trauma…'* (2006: 120)

In the 'typology' of the analyst, Stone is referring to the Jungian idea that personalities can be categorised into types (Jung, 1923). Stone suggests more research is needed in this area. It is nonetheless intriguing that his conclusion argues that a potential predisposition in the personality of the analyst is a determining factor in their experience of embodied countertransference phenomena. Specifically, a tendency to 'intuition' would be a dominant feature of analysts likely to report embodied countertransference.

Psychoanalysis and the Body

Before continuing with a focus upon embodied countertransference, it is necessary to consider more broadly the conceptual place held by the physical body in psychoanalysis.

Connolly (2013) suggests that an increasing attention paid to the importance of the body in psychoanalytic theory and practice is one of the most significant developments in modern Freudian, and especially Jungian, thinking. She argues that the mind is fundamentally shaped by our embodied, corporeal experiences and cites McDougall (1995) in asserting the risks that failure to recognize this entail:

> *'The concept of mind-body duality, a legacy of Cartesian philosophy, can cloud our perception, skew our theoretical conceptualizations, and even distort our clinical work.'* (McDougall, 1995: p. 157)

Nonetheless, numerous contributors have asserted exactly this – a denial of the body – has too long characterized psychoanalytic theorizing (Field, 1989; Jacobs, 1993; Boudella, 1997; Shaw, 2004).

Jacobs (1993) attempts to explain why, evoking the controversial psychoanalyst Reich, and noting him to have been an early, proponent of the body in psychoanalytic thinking. Reich's more speculative theories and practice - particularly in relation to sexual energy and gratification - are suggested as a reason for the body's marginalization in psychoanalytic thinking and practice. For many external commentators, Reich's disgrace and imprisonment linked psychoanalysis to something fraudulent and dangerous (Boadella, 1997).

Perhaps 'dangers' are implicated in psychoanalysis's denial of the body, dangers with which it is necessarily involved, in so far as psychoanalysis potentially accommodates an encounter with basic human instincts and urges. Jacobs (1993) asserts that non-verbal communication evokes the early and primitive experiences of infancy and preverbal stages of development. He argues that for some analysts, being in close connection with such a powerful non-verbal world may be unconsciously experienced as a threat (Jacobs, 1993).

Retrospectively, and with body more firmly aboard, 21st century psychoanalytic theorising has sought to draw out the latent presence of 'the body' in earlier writing,

potentially hidden behind a cloak of anxiety and a focus on psyche over soma (Karacaoglan & Lombardi, 2018); as well as unearthing explicit references to the body.

Freud's statement: *'… the Ego is first and foremost a body ego…'* (1923, p. 26) is frequently quoted as evidence of Freud's acknowledgement of the importance of the body. Vartzopoulos & Beratis (2012) see the body-mind question as central to Freud's work. They illustrate this with: the example of Freud's theory of Drives; his reference to the *'body ego'* (1923, p.26); and his attention to conversion symptoms, in the clinical case histories where conflicts of unconscious fantasy are played out symbolically upon the stage of the body (Freud, 1905).

Bion's capacity for a vivid use of his own body as a tool of perception, explicitly referred to in interpretations to patients, is also identified in the efforts of those who would reclaim the body in the history of psychoanalytic thought. For example, Bion made the following interpretation (Bion, 1956, in Field 1989: p.518): *'… you have been pushing into my insides your fear that you will murder me…'.*

Empiric Research

While embodied countertransference is well attested in the psychoanalytic literature, primarily in case studies (Samuels, 1985; Field, 1989; Jacobs, 1993; Lombardi, 2003; Zoppi, 2017); and as Connolly suggests (2013), is the focus of

considerable theorising in psychoanalytic thinking (Greene, 2001; Stone, 2006; Martini, 2016; Karacoaglan & Lombardi, 2018); other forms of empirical research study specific to the phenomenon remain relatively few. The review now focuses on a selection of these.

Oft cited in the research literature on embodied countertransference (Field, 1989; Stone, 2006) is Andrew Samuels' (1985): 'Countertransference, The 'Mundus Imaginalis' and a Research Project': an attempt at empirically investigating countertransference.

Samuels postulates that countertransference can be classified into two broad categories: *reflective countertransference* and *embodied countertransference*. Reflective countertransference is conceived as an experience, for the analyst, which feels immediately reflective of the patient's state (conscious or unconscious). It is thus a here-and-now, reflective experience provoked by contact with the patient. Embodied countertransference is conceptualised as the analyst taking on, in a much more profound and altering way, something from the inner world of the patient.

Embodied countertransference[2] implies a kind of '*becoming*' in the being (the psychic self) and body of the analyst, an incarnation (1985: p.52) representing a communication of a deep and distinct order.

Samuels's research project set out to explore the categories he had developed in his understanding of countertransference, as manifest in the experiences of other psychotherapists. It involved the collection of twenty-six psychotherapists' testimonies about *'…. countertransference reactions of theirs which they considered to result from the unconscious communications of their patients…'* and *'… how the patient may have provoked these feelings…'* (1985: p. 54).

Fifty-six case studies, providing seventy-six examples of countertransference, were represented in the research. Participating psychotherapists had all been in supervision with Samuels and were aware of his ideas and may well have been influenced in the development of their analytic practice by them. Samuels defends this criticism of his methodology (1985: p.55).

[2] It is important to note that countertransference experiences felt to be in the body (body-centred or bodily) and often referred to as 'embodied' are not necessarily identical with Samuels' conception of 'embodied countertransference'. The latter designation is used by Samuels to define a particular and profound countertransference experience of becoming (an aspect or 'entity' of the patient's inner world) which, while it can include the bodily 'symptoms' of a physical countertransference is not necessarily identical with them.

Through an 'inductive' process (p. 55), participants' countertransference experiences were surveyed for 'emerging' patterns which could be developed into further theoretical categories[3]. Field (1989) reorders Samuels's classifications and in turn adds 'dreams.'

Samuels's paper begins with an attempt to root theorising in experience, but there is a marked shift from this (at times questionable) empiric framework to a discussion of countertransference as ineffable, mystical experience, ultimately defying explanation and categorisation. Samuels links the operation of countertransference to 'The Mundus Imaginalis', an idea borrowed from the philosopher, Henry Corbin (1972). The Mundus Imaginalis refers to a 'realm' or 'level of experience' in which the mechanisms of psychic operation can occur (Corbin, 1972), this is in turn linked by Samuels to Winnicott's 'The Transitional Space' (1974). The Mundus Imaginalis has become an important reference point in psychoanalytic thinking about embodied countertransference, as the place where unconscious exchange might occur (Martini, 2016).

[3] Samuel's categories are: bodily and behavioural responses e.g. pain in particular parts of the body, sleep, sexual arousal, wearing the same clothes as the patient; feeling responses e.g. anger, being bored, powerfulness; and fantasy responses e.g. *'…this is the wrong patient, there's something wrong with my feet, a large black pot…'* (1985: p. 57).

Samuels acknowledges the difficulty of juxtaposing the empiric and the mystical and defends the use of empiric methods to explore something poetic and abstract, presenting himself as a *'...match maker for two world views…'* (1985: p. 67).

Samuels holds that countertransference should be the very root of the analyst's technique, whilst recognising that as soon as you create a regulated system for its operation or function, you create a *'clinical confine'* (1985: p. 67), anathema to the necessarily fluid relationship between two individuals. There is a paradox in the empirical and theoretical effort to understand and the necessary impossibility of an encompassing understanding.

As a partial solution to this paradox, Samuels emphasises the place of relationship *'… to body and image* [or mind] *can be added relationship…'* (1985: p. 68)

Relationship, specifically, the intersubjectivity of the psychotherapeutic relationship, is at the heart of Robert Shaw's (2004) qualitative research into the embodied experience of psychotherapists and challenge to the idea such experience be conceived as countertransference.

Shaw asserts that he considers psychotherapy to be essentially and inherently an embodied process, an *'…intrinsically embodied experience…*' (2004, p. 272). Shaw explicitly rejects Cartesian dualism, asserting that his own position is in keeping with the philosophical tradition of Phenomenology, quoting Merleau-Ponty, *'…it is*

through my body that I understand other people…' (Merleau-Ponty, 1962: p.186, in Shaw, 2004: p 272)

The body links worlds internal and external, and is the place of encounter between individuals. Shaw quotes Crossley, *'…the body is the very basis of human subjectivity…'* (1995: pp 44 in Shaw, 2004: p. 273), stating the aim of his study was *'…to examine the therapist's body as a subject of perception…'* (Shaw, 2004. p. 273).

Shaw used grounded theory to explore the 'body' experiences of humanistic therapists, involving 90 therapists. Findings indicated therapists:

> *'…used their somatic experiences to help them navigate the complexities of the therapeutic encounter. In doing so, they are emphasizing the importance of their bodily perceptions…'* (Shaw, 2004: p. 283)

Shaw found evidence that the therapist's body provided valuable information relating to the subjective space between the therapist and client. A link was also suggested between the presence of a strong emotional connection between client and therapist and the therapist's experience of bodily phenomena.

Shaw argues that the research demonstrates the therapist's body to be a source of knowledge about the therapeutic encounter, but that it also indicates that countertransference discourse is inappropriate and unhelpful in understanding

these experiences. Shaw claims his research evidences how countertransference dialogues 'reify' embodied experiences, and as such are potentially reductive of the phenomena observed in participants' reflections upon the embodied encounters between therapist and client.

Relationship is Shaw's focus. He holds that a dialogue of relational encounter should not be made identical with one of countertransference which privileges the perspective of the therapist. Shaw's concern is attribution and how the embodied experience of the therapist is understood. He fears that a dialogue using embodied countertransference as its epistemological basis too often results in an aetiology of the therapist's bodily responses located in the patient, according to the therapist's own interpretative perspective. Shaw gives examples from the work of Matthew (1998) describing a patient who provoked strong bodily responses. Shaw's concern is that Matthew makes too solid and too definite what are, in Shaw's view, *'…intangible subjective phenomena…'* (2004: p.273).

Shaw argues that it is simplistic to attribute a therapist's bodily experiences to their patient's unconscious processes, risking a denial of more complex intersubjective realities. Shaw acknowledges that the experiences described in his research were experiences 'belonging' to the therapists and perhaps to the encounters between therapists and patients: to the intersubjective space between them.

> *'…Psychotherapy can be considered a way of constructing meaning out of an encounter between two bodies: that of the client and that of the therapist...'* (2004: p. 271)

Shaw explicitly exempts Samuels (1985) and Field (1989) from the accusation levelled at psychoanalytic thinking on embodied countertransference. Whilst extoling the value of embodied countertransference as a potential means of uncovering unconscious processes, both maintain caution regarding attribution of bodily experience. It is a matter for debate whether more recent theorising and case-studies on experiences of embodied countertransference maintain the ultimate and, according to Samuels and Field, necessary, position of, *not knowing* and relational mystery in the space between patient and analyst.

Shaw's participants were deliberately recruited from a psychotherapeutic school considered more inclined to body-consciousness: 'Humanistic Psychotherapy'. Shaw is nonetheless concerned that too little attention is given to the body in the training of psychotherapists. He argues for the inclusion of teaching on 'embodiment', suggesting a curriculum based on ideas of the '*…body as a receiver, embodied styles of working and body empathy…*' (2004: p. 284).

Further argument for the importance of developing an understanding of the body within the therapeutic encounter is made by psychologists Egan and Carr (2005;

2008) and Booth and colleagues (2010). Booth and colleagues (2010) argue after Blackburn and Price (2007) that physical behaviour and sensations can be related to our emotions, even if the latter are being held unconsciously. They cite Geller and Greenberg (2002) who found that therapists who sought to be *'fully present'* in therapy sessions had multisensory experiences which included physical reactions (Booth et al., 2010: p.285).

While Booth and colleagues hold a positivist view on the potential contribution of a physical countertransference to therapeutic work, they also follow Rothschild and Rand (2006) in concern that failure to monitor body-centred communication can result in *'…the therapist unconsciously taking on the client's internal experience through their physical responses…'* (Booth et al., 2010, p. 285). Unmonitored empathy (such as might be constituted by an unacknowledged bodily reaction to a patient) carries the potential for '*contagion of affect*', physical, emotional or cognitive in the therapist.

Unlike Shaw (2004), Booth and colleagues (2010), place themselves firmly within the countertransference discourse. Referencing Pearlman and Saakvitne (1995) they follow these authors, suggesting that countertransference can be considered an element in all therapies and has the potential to impact upon all therapists. They suggest that while the emotional and cognitive reactions of therapists to patients

have been well attested (e.g. Hayes, 2004), physical responses are much less well documented (e.g. Egan and Carr, 2008).

The terminology of Pearlman and Saakvitne (1995), who refer to the phenomenon of 'body-centred countertransference', is favoured by Booth and colleagues in discussing the physical responses of therapists to their patients and is explicitly equated with Field's 'embodied countertransference'. Body-centred countertransference is defined as the process by which a therapist comes to hold an affect physically and according to which they may respond unconsciously through their body[4].

Egan and Carr (2005) developed a questionnaire to assess the frequency with which therapists experienced symptoms of body-centred countertransference which was used to assess body-centred countertransference in a sample of female trauma

[4] Using the term 'body-centred countertransference' (Pearlman and Saakvitne, 1995) rather than that of 'embodied countertransference', as Field (1989), it can be argued paves the way for a potentially useful distinction between the phenomenon whereby a therapist comes to experience and hold an affect physically; and, the related yet more profound 'embodied countertransference' experience of 'becoming' described by Samuels (1985). This distinction has not been consistently noted or maintained in the literature. Indeed, Egan and Carr (2010) acknowledge that the terms are used synonymously, along with 'body', 'somatic' and 'bodily' countertransference. As far as possible the terminology of the author, to whose paper is referred is followed.

therapists. The researchers found a relationship between the frequency of body-centred countertransference symptoms experienced and the amount of sick leave taken. Booth and colleagues (2010) sought to extend this research through the application of Egan and Carr's questionnaire (2005) to a varied sample of Irish clinical psychologists, with a range of therapeutic orientations.

Booth and colleagues (2010) noted the frequency with which symptoms of body-centred countertransference were reported by their sample were similar to those of Egan and Carr (2008): 80% of therapists surveyed reported some form of body-centred countertransference occurring in the previous 6 months (the figure being 83% for Egan and Carr). Booth and colleagues suggest, on the basis of the variety of therapeutic orientations represented in their sample, that their research supports Pearlman and Saakvitne's (1995) assertion that bodily countertransference is experienced by all therapists. They argue that, along with Egan and Carr's (2008), their results suggest body-centred countertransference can be measured quantitatively.

While recent research such as that of Egan and Carr (2008) has discussed the 'risk' of contagion through unconscious processes communicated in the body from patient to analyst, historically Searles (1958) identified a movement of unconscious process in the other direction. In case studies pertaining to his schizophrenic patients, Searles noted a particular propensity to permeability within the psyche of these

individuals which left them vulnerable to the unconscious communications of others (including himself as analyst). He describes examples of these experiences, expressed by the patient's as 'felt' within their bodies.

Karacaoglan and Lombardi (2018) also stress the importance of the therapist's body in work with adult patients in psychotic states of social withdrawal, patients who might traditionally have been considered hard to reach, or even beyond the remit of psychoanalytic endeavour. They assert that an awareness of the body necessarily to identify underlying processes in the unconscious of patient and analyst, arguing that part of the analyst's work is to facilitate patients to bring together the experience of being a body and being a mind, in a mirroring of this mandatory condition of psychoanalytic work.

These authors hold that the act of relating to the analyst potentially facilitates the patient to relate in turn to their own physical body, a capacity which in psychotic states has become distorted or disconnected. This is rooted in the analyst's capacity to perceive, acknowledge and explore their own sensory world experience; illustrating how central the idea has become for some therapists that countertransference and embodied countertransference is a necessary tool.

The Body in Child Psychotherapy

The literature reviewed has predominantly consisted of work written from a Jungian analytic perspective (Samuels, 1985; Field, 1989; Connolly, 2013; Salvatori, 2016), related to adult patients. What of the body in child psychotherapy? Arguably, work with children is, by necessity, a more 'bodily' work, determined by a child's age and stage of development. Perhaps working in and with the body is to some extent assumed? Further research would be needed to verify this. The training of child psychotherapists at the Tavistock Centre in London has an optional seminar considering 'Body States', which focuses on working therapeutically with the body. The existence of this seminar might indicate that the body needs specific attention within the teaching syllabus; however, this argument potentially misses latent content related to the body in other areas of teaching (reflecting the perspective of some thinkers about the latent presence of the body in earlier psychoanalytic theory).

There are areas of psychoanalytic work with children which require a most active awareness and engagement with the body, for example: in eating disorders (Lock & Fitzpatrick, 2009); and Autistic Spectrum Condition (ASC) (Vulcan, 2016). Vulcan's (2016) phenomenological study of therapists working with children with ASC again raises the notion of the body's potential as a perceptive, communicative, relational 'tool'; but also, uncertainty as to its skilled employment. Once again, questions of

attribution emerge: what belongs to whom; and the difficulty of *'not knowing'* within the therapeutic encounter.

Twenty-eight therapists working with children with ASC underwent in-depth interviewing in Vulcan's (2018) study, which offers qualitative evidence of the *'centrality of the body within the intersubjective encounter'* with this patient group and *'…the development of "implicitly bodily relational knowing" which enables empathy and connectedness, when conventional verbal modes of communication are severely impaired…*' (2016: p.326)

Vulcan's participants were from a range of professional orientations, and their experiences were gathered via in-depth interviews. A potential weakness within the study's design is that 11 of those included could be considered as having a '*somatic orientation'* (as dance/music therapists) which may have affected their responses (2016: p. 336).

Themes identified by the study included difficulties in verbal communication, symbolization in thought and play, and reciprocity of interaction. These difficulties linked to participants' doubts about the efficacy of treatment.

The body emerged as central in providing therapists with an alternative, vital point of connection to their patients. Notably, boundaries between self and other and the difficulty (both literal and symbolic) in maintaining a distinction between the two,

were prominent. Participants spoke about their own bodies, those of their patients and the confusion which could occur between the two. Some respondents couched this in the language of transference/countertransference.

One therapist described how a lens of physical movement had provided the opportunity for insights in her work. This therapist spoke of herself as becoming, *'…some kind of translating body…'* (2016: p. 332).

Another therapist spoke *'…of feeling that both she and the child were "talking from our guts". She concluded that words might actually "sabotage communication", and that "it's the body that speaks""* (2016: p. 332). Another explained, *'In the session it's mainly body-to-body… I do not always translate body to word…'* (2016: p. 332). Translation for many of the participants was an intersubjective experience which passes without words from one to another - body to emotion, emotion to body - rather than a literal translation involving verbal interpretation of bodily experience, reminiscent of the observations made by Daniel Stern of the synaesthesia involved in affect attunement that can occur between infants and their care givers (Stern, 1985).

Conclusion

The literature reviewed evidences the growing interest in what is experienced, 'in the body', in the patient–therapist interaction and how this relates to the psychical.

The potential value of an awareness of bodily experiences has been described. However, the potential for wrong attribution and subsequent misunderstanding of bodily reactions and responses is also noted. Arguably, this reflects difficulties fundamental to the continued debate that surrounds 'countertransference' in general, which can in turn be linked to broader issues of subjectivity and differentiation between self and other.

Interoception

Interoception is an area of burgeoning significance within the field of affective neuroscience (Pace-Shott et al. 2019). The Theoretical Review now considers this concept before addressing the potential relationship between interoception and countertransference.

Definition

Interoception is defined by Oliver Cameron (2002) as the *'…perception of the functions and physiological activities of the interior of the body…'* involving *'… the effects that… afferent sensory impulses arising from the viscera, the organs and tissues within the trunk of the body have upon the higher nervous system processes and the behaviour of the organism…'* (2002: p. vii).

Interoception allows us to 'feel', or 'sense', our insides (our internal organs) and our skin (Mahler, 2017). It provides information about the internal condition or state of our bodies (Craig, 2002). It can be localized or general; it includes: temperature, pain, hunger, thirst, sexual arousal, itch, heartrate, respiratory rate, muscle tension, sleepiness, the need to urinate or defecate (Mahler, 2017). Importantly, interoception involves both conscious and unconscious processes. We can become consciously self-aware of interoceptive information, but interoception is nonetheless ever present: our bodies are engaged in interoceptive processes as part of homeostasis (Vaitl, 1996; Cameron, 2002).

In a recent, systematic and comprehensive review of the literature pertaining to affective neuroscience undertaken on behalf of 'The Human Affectome Project' (est. 2016)[5], Pace-Shott and colleagues (2019) argue for an expansion of the definition of interoception to include:

> *'… information from brain representations of such organs, tissues and processes by other regions of the brain... Interoception may also affect*

[5] 'The Human Affectome Project' is the initiative of the not for profit organisation 'Neuroqualia'. The aim is to provide a series of overarching reviews summarising current knowledge on affective neuroscience and the language that is used to articulate emotion and feeling (Pace-Shott et al. 2019, p. 268).

> *feelings or generate peripheral physiological changes by evoking efferent signals below the level of consciousness…'* (2019, p. 268)

This expansion is grounded in the research of Seth and Friston (2016) who understand interoception in relation to a wider 'Bayesian' inference within the brain - the idea that within the brain a constant process is at work which involves, not only the brain's monitoring, receipt and recognition of sensory information (extra and intero perceptions), but a concomitant and active prediction (inference) of perceptual information based on previous perceptions. Prediction of perception (or perception by inference) is thought to actively shape the internal conditions of the body (anticipating what will happen next); and aims to reduce as far as possible the degree of error arising between expected and actual conditions. Thus, the brain actively, inferentially, facilitates the body to maintain its homeostatic balance.

If interoception, as Seth and Friston (2016) argue, is involved in inferential and predictive activity, then the 'felt' experience of our internal bodies may be generated both afferently and efferently from sources external to and within the brain's structures (Seth, 2013; Barret, 2015; Seth & Friston, 2016).

It would be amiss not to note how intriguingly reminiscent the 'Bayesian' understanding of the brain's activity is of the dynamic interplay between the internal and external world depicted in the psychoanalytic thinking of Melanie Klein (Klein, 1935, 1940, 1946).

Klein understands the mind to be fundamentally relational and complex. For example, the unconscious can be considered to relate to itself, to the conscious mind and to the external world. These processes of relating are indivisible: the world perceived to be external to the self could never be free from the lens of the mind which beholds it; and equally, the mind which beholds is necessarily a constellation of what has already been beheld and the internal processes inherent to its existence. (Some of these processes might be conceived as equivalent to the conception of Bayesian 'predictions.) Perhaps the Kleinian view stands as a (predictive) metaphoric parallel for the material activity being described in the physicality of affective neuroscience's empiric investigation (Seth & Friston, 2016).

Fascination with the study of interoception and its potential significance for neuroscience is evidenced in the proliferation of research studies into the phenomenon in the past fifteen years (Damasio, 1994; Wiens, 2000; Barrett et al. 2004; Pollatos et al, 2007; Dunn et al, 2010; Seth, 2015; Cali et al. 2016 etc).

This interest arguably has its matrix in the possibility that mind can be rooted in matter; and that it might be possible to generate a 'scientific' understanding of the 'mystery' of human being, with its complexities of self-hood, self-awareness and relationship (Seth & Tsakiris, 2018). Feeling and indeed thought are, according to this perspective, no longer to be confined to the brain, but rather belong to the

sensory, experiencing body as a whole, of which the brain is but part (Damasio, 1999).

Pace-Shott and colleagues (2019) assert that *'…conscious emotional experience is closely bound up to bodily sensations…*' (p. 267). Others take this further, suggesting that consciousness itself belongs to biological processes (Damasio, 1999; Pinker, 2018).

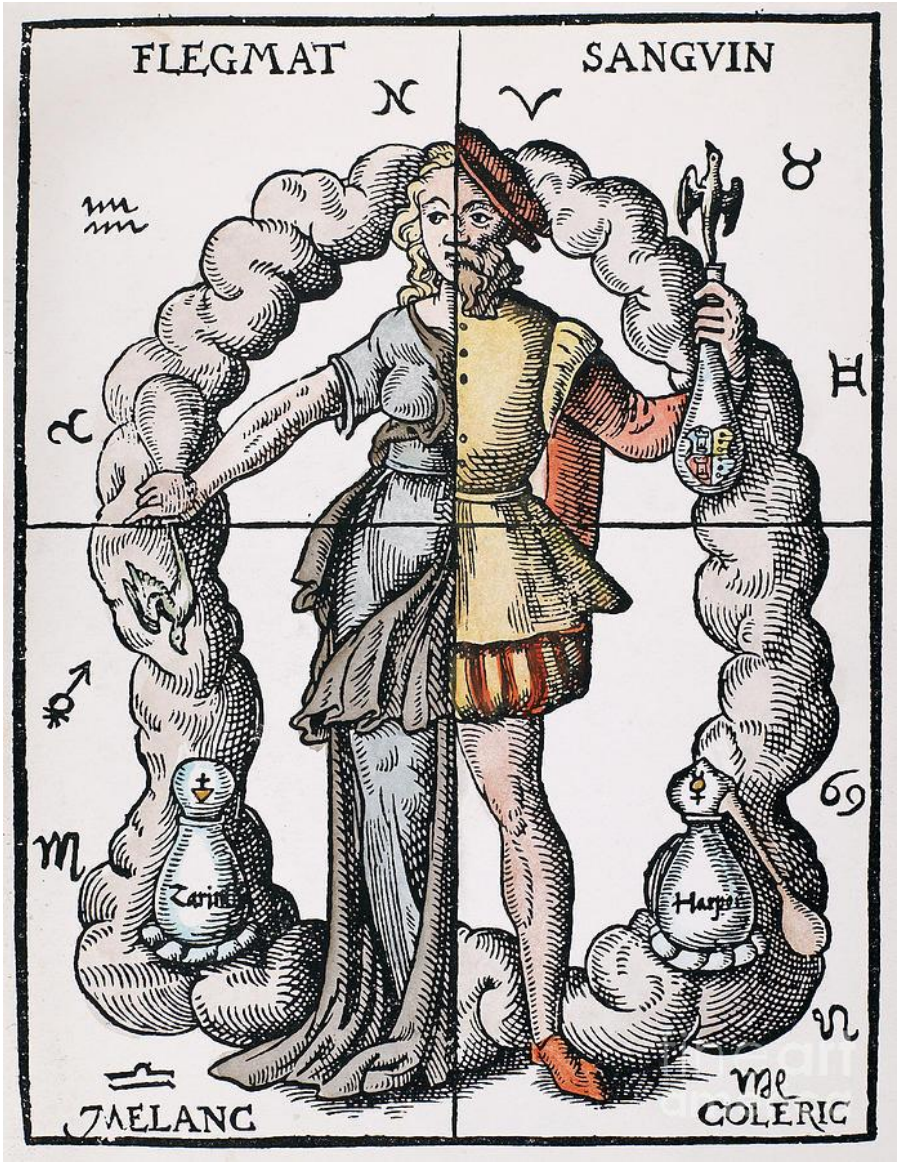
History

'…the mind's inclination follows the body's temperature…'

Galen (131 C.E – 201 C.E)

The idea that the experience of emotion is rooted in the physiology of the body has a long history. In modern Western thought, this dates back to 19th Century, however, 19th Century theories evoke an older understanding. Links between physiology and emotion were commonplace in Early Modern and Medieval Europe, a causal link between physiology and emotional and dispositional states was assumed, founded on the notion of the bodily 'Humours' (Figure 1.) themselves dating back to the ancient Greek philosophers, Aristotle and Hypocrites and Roman Physician-Philosopher, Galen (Redman-Coxe, 1846). The Humours governed not only illness but also personality and behaviour (ibid).

Figure 1. *The Four Humours Drawing, Thurneysser (1574)*



Links between emotional experience and the body remain commonplace in language: take, for example, the metaphorical phrases ‘heartfelt’, ‘gut feeling’, ‘blood boiling’, and ‘vent your spleen’.

Links in language survived the severance of mind and body in philosophical thought, attributed to Cartesian Dualism, founded upon Descartes (1647) premise: *'Cogito Ergo Sum'* – I think therefore I am. Descartes prioritised the thinking mind as the seat of selfhood, conceiving of the body as a lower 'machine', that breathes, digests, perceives and moves by the arrangement of its parts (Shugg, 1968). Cartesian Dualism dominated Western thinking for approximately 250 years and arguably continues to permeate Western society.

In the 19th Century, the philosopher William James (1884) asserted that emotion is corporeal first and psychic second. Emotion, in the Jamesian view, begins with the perception by the body of an external sensory stimulus. This stimulus results in bodily changes (e.g. increased heartrate or respiration) which are then 'felt' as an emotion (e.g. fear) (ibid). James held that emotion is based in physiological changes, rather than the latter resulting from it.

Empirical Research

Interoception links logically to Jamesian theory and some researchers have cited their work as evidence for it (Pollatos et al. 2007). Pollatos and colleagues claim to have shown that interoceptive accuracy (the capacity to accurately identify bodily states) is positively related to the reported intensity of emotions that an individual experiences and that certain brain regions can be identified to serve as an interface between interoception and emotional experience. They conclude, *'…that the*

perception of body states is a crucial determinant for the processing and the subjective experience of feelings…' (2007: p. 9).

Dunn and colleagues (2010) suggest that:

> *'… If Jamesian accounts are correct, the more accurately individuals can perceive bodily activity, the stronger the relationship between such bodily changes and cognitive-affective processing should be…'* (2010: p. 1836)

They tested this hypothesis by conducting two studies, intended to examine whether:

a. interoceptive accuracy moderates the coupling of bodily responses to 'emotion experience' (Study 1)
b. interoceptive accuracy influences intuitive decision-making (Study 2).

In Study 1, the researchers demonstrated that the more accurately participants could track their heartbeat in a Heartbeat Counting Task the stronger the link that was observed between their heartrate reactions (as measured objectively by ECG) and their subjective arousal ratings (measured using a visual analogue scale) in response to emotionally provocative images: suggesting the greater an individual's interoceptive accuracy, the more closely allied are their subjective 'felt' experience and their state of physiological arousal.

The Heartbeat Counting Task, employed by these researchers, is a measure of interoceptive accuracy first developed by Schandry (1981). It requires individuals to silently count their heartbeats (by concentrating on their body but not feeling for a pulse) over a series of discrete time periods whilst at the same time their heartrate is objectively monitored. The difference between actual and estimated heartrate constitutes the accuracy measure. This task has become a central component in studies of interoception (Garfinkle et al. 2015).

Intuitive decision-making is identified as the *'…automatic, emotional judgements about whether a contemplated response is a good or bad option'* (Dunn et al. 2010, p. 1838). It is, in essence, the way that a choice 'feels' in contrast to the considerations of logical argument (Kahneman, 2003). The capacity to make 'good' or 'effective' intuitive decisions varies significantly (Dunn et al. 2010); poor intuition can be costly, even dangerous (Myers, 2002). Developing an understanding of intuitive variability is therefore potentially important, the justification by Dunn and colleagues for the second part of their study (Dunn, et al., 2010). They link intuition to the Somatic Marker Hypothesis of Damasio[6] (1994; 1999) and suggest that bodily

[6] The Somatic Marker Hypothesis proposes that emotions play a critical role in decision making, including rational decision making. Damasio holds that emotions have bodily components, they are linked to physiological changes e.g. raised heart rate is coupled with anxiety, nausea with disgust. These are changes are termed 'somatic markers'. Such markers can be associated with particular situations and with past outcomes. In decision making, particularly (although not exclusively) where

feedback potentially represents a significant factor in the variability in the quality of intuitive decision-making.

Study 2 (Dunn et al., 2010) looked to explore whether increasing interoceptive accuracy would be associated with good decision-making when body signals favoured 'advantageous' options; and poor decision-making when body signals favoured 'disadvantageous' options. This was confirmed, indicating that interoception was more or less beneficial in intuitive decision-making depending on the body signals generated.

Dunn and colleagues, conclude:

> *'… These findings identify both the generation and perception of bodily responses as pivotal sources of variability in emotional experience and intuition, and offer strong supporting evidence for bodily feedback theories, suggesting that cognitive-affective processing does in significant part relate to 'following the heart'…'* (2010: p. 1835)

Kandasamy and colleagues (2016) note that while laboratory investigation has linked interoceptive accuracy and intuitive decision-making (Dunn et al., 2010) little field

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this needs to be fast, is complex or where there is uncertainty, such markers constitute an emotional bias which influences decision making (Damasio, 1994; 1999).

research has been undertaken into the value of interoceptive accuracy for decision-making in real-world contexts. To address this, they explored 'gut feeling' in individuals making high-stakes decisions, in a study of interoceptive accuracy amongst financial traders working on a London trading floor.

Traders involved in the study were those engaged in high-frequency trading, meaning that they maintained their trading positions for very short periods of time, sometimes as little as seconds. Trading in this way requires individuals to be alert to large amounts of information, despite constant state flux. High-frequency traders have to be quick to identify patterns within the market and make risky, high-stakes decisions, *'…with split-second timing…'* (Kandasamy et al., 2016, p.2).

Eighteen traders participated in the study, which involved undertaking both a Heartbeat Counting Task (Schandry, 1981) and a Heartbeat Discrimination Test (Katkin et al. 1983). Heartbeat Discrimination Tests are used in interoception research alongside (and sometimes independently of) Heartbeat Counting Tasks. Heartbeat Discrimination involves the presentation of periodic external stimuli (lights or sounds) to participants, who simultaneously identify whether these stimuli are in or out of sync with their own hearts (Katkin et al., 1983; Garfinkle et al., 2015). Heartbeat Discrimination and Heartbeat Counting tasks are both recognised as measures of cardiac interoceptive accuracy, however Schandry's (1981) Heartbeat

Counting Task has been favoured by researchers, at least until recently (Zamariola et al. 2018).

Kandasamy and colleagues (2016) asked participants to rate their confidence in performing the Heartbeat Counting Task using a visual analogue scale. Data collected was compared to that of a control group constituted of forty-eight *'high-functioning (mostly students and postgraduates) non-trader males'* (Kandasamy et al., 2016: p.2), drawn from participants who had performed identical tasks in other studies undertaken at the University of Sussex (Garfinkle et al. 2015). Controls were matched for age with the traders.

Results demonstrated that traders had enhanced interoceptive accuracy compared to non-trading controls (traders' mean average 78.2% compared to controls 66.9%, $p = 0.011$, $n = 66$) (Kandasamy et al., 2016).

Interoceptive accuracy scores were also considered in relation to each trader's daily profit and loss, over the previous year. Interoceptive accuracy was found to predict profitability, with those demonstrating greater interoceptive accuracy making most profit. Furthermore, interoceptive accuracy was also found to be predictive of survival on the trading floor itself, with longevity linked to greater accuracy.

Traders' reported confidence in their performance of the Heartbeat Counting Task did not correlate with interoceptive accuracy. Nor was reported confidence related

to profitability, or years of survival. Kandasamy and colleagues (2016) discuss these finding in relation to the potential impact that self-conscious awareness might have upon interoceptive signals, suggesting that overt awareness might result in potentially valuable interoceptive signals being dismissed as mere *physical sensations* and a potential distraction from the task at hand (e.g. the traders' decision-making). Also proposed is the idea that self-consciousness might impair risk-taking in the same fashion that self-consciously focusing on a skill can impair accomplishment (Kandasamy et al. 2016).

Kandasamy and colleagues' (2016) research appears to evidence the potential impact of interoceptive accuracy within a specific professional group. The authors propose that the study contradicts the 'Efficient Markets Hypothesis' of economic theory, which states that the financial market is random and that no trait or skill would improve trader performance (Fama, 1970).

The study findings indicate that interoceptive accuracy and self-perception of interoceptive capacity (reported confidence) are not correlated. It appears that 'interoceptive accuracy' and 'interoceptive self-awareness' (at least in so far as this is attested by traders' reported confidence) are not identical.

The earlier works of Dunn and colleagues (2010) and Pollatos and colleagues (2007) link 'interoceptive accuracy' directly to the idea of 'interoceptive awareness'; using

these terms interchangeably along with the phrase 'interoceptive sensitivity'. Garfinkle and colleagues (2015) challenge these conflations, seeking to develop clarity in the conception of ideas within interoceptive research and the language used to describe them.

Garfinkle and colleagues (2015) assert that three distinct and dissociable dimensions can be identified within interoceptive research:

1) Interoceptive accuracy = the *'…performance on objective behaviour tests of heartbeat detection…*' (2015, p. 65)
2) Interoceptive sensibility = the *'…self-evaluated assessment of subjective interoception gauged using interviews/questionnaires…'* (ibid)
3) Interoceptive awareness = the '*…metacognitive awareness of interoceptive accuracy e.g. confidence - accuracy correspondence…'* (ibid)

They tested and confirmed their hypothesis within a normative sample of eighty participants, also noting that interoceptive accuracy was only partly predicted by interoceptive sensibility and interoceptive awareness. Significant correspondence between the three dimensions was in fact only found within a subgroup of individuals with the greatest interoceptive accuracy, leading the researchers' to claim: '*This is consistent with our hypothesis regarding the primacy of accurate interoception, such that a correspondence between the dimensions would emerge only after a basic accuracy threshold is overcome…'* (p. 71).

Interoception and awareness: Interoception and the self

'Awareness' of emotional states (linked to interoception) is considered central to emotional regulation (Fustos et al. 2012; Craig, 2015).

'Interoceptive sensibility' (Garfinkle, 2015) and emotional regulation are investigated in Zamariola and colleagues' (2019) mixed-methods study, comprised of questionnaires and in-depth interviews. Results demonstrate that people with low interoceptive sensibility show more difficulty in articulating their feelings.

Therapeutic interventions which seek to support individuals to develop increased 'self-awareness' linking mind and body, have proliferated in recent years (Pickert, 2014; Purser, 2019), founded on the idea that with increased 'awareness' comes increased capacity to self-regulate (Price & Hooven, 2018).

Emotional regulation is arguably grounded in effective communication between body and mind (thoughts and feelings). Price and Hooven (2018) suggest that emotional regulation:

> *'… implies tolerance and understanding of signals from the body and the related cognitive attributions. It also implies having the capacity to positively manage challenging sensations and related behavioural responses*.' (2018: p. 3)

Emotional regulation is the individual's dynamic management of experience and inference, basic instinct and reflective awareness, and entails also the management of related behaviour, all being ultimately in the service and maintenance of coherent and continuous self-hood. Where emotional regulation is impaired, self-hood is potentially significantly impacted (Carpenter & Trull, 2013).

Self-hood encompasses the most basic experiences of having (or being) a body, through to experiences of reflective self-awareness (reflective self-consciousness) and being a self with others (Seth & Tsakiris, 2018). According to Craig (2009) a neural basis for 'self-awareness' can be identified. Craig (2009) argues this is based in the neural representation of the body's physiological condition, manifest through interoceptive processes. Furthermore, the homeostatic neural construct for a feeling from the body (the interoceptive signal) is identified by Craig (2009) to be foundational for the encoding of all feelings. Interoception is key to the idea of the *'body in the mind'* (Herbet & Pollatos, 2012: p. 696); the mechanism for the embodiment of affective and cognitive functions; and at the heart of self-awareness (Craig, 2008).

The thesis of Seth and Tsakiris (2018) is that interoception and particularly '*instrumental interoceptive inference*'[7] plays a vital part in the construction of our multifaceted selfhood by underpinning *'…allostatic*[8] *regulation of physiological essential variables…'* (2018: p.978)

They assert that our sense of ourselves is inextricable from bodily perception and to the top down (i.e. from brain centre to brain centre, or brain centre to body) inferences which are, in the Bayesian model of the brain, involved in processes of perception (ibid).

The earliest perceptions of the body in infancy, necessitate regulation by another person (Seth and Tsakiris, 2018) and thus, interoceptive processes become part of a contemporary understanding of the development of the infant brain through relationship with a care-giver (Balberine, 2001; Gerhardt, 2004; Feldman, 2011).

[7] Instrumental interoceptive inference (Seth & Tsakiris, 2018: p. 969) refers to a subset of active inference within interoceptive activity, which serves principally to regulate perceptual variables (and their hidden causes). It is equivalent to 'control orientated' inference (2018, p. 971).

[8] Allostasis is defined as a form of regulation emphasising the achievement of stability through change (Seth & Tsakiris, 2018, p. 970).

The importance of the care-giver within Seth and Tsakiris's (2018) understanding of interoception, as of a regulator of earliest life, might also then stand as a model for the therapist in addressing difficulties of regulation later. This is arguably highly suggestive of Bion's (1962) conception of emotional containment, and its necessity for the development of mind. Bion describes an unconscious process by which a mother receives the emotional communications of her infant and 'digests' or processes them, before they are returned to the infant in a form which can be received and tolerated. Through this process the infant develops her own capacity to feel and think.

Applications of interoceptive research to psychopathology

The importance of interoception in emotional experience and the development and maintenance of self-hood is arguably further attested in conditions where self and emotion are negatively affected.

Eating disorders are characterised by a struggle to relate to the perceived physical body. Pollatos and colleagues (2008) demonstrated that a sample of anorexic participants not only had difficulty recognising visceral sensations related specifically to hunger and satiety, but also evidenced reduced perception of interoceptive signals from the heart. A recent systematic review by Martin and colleagues (2019) underlines the importance of interoception across different types of eating disorder

and calls for more research into the relationship between interoception and the aetiologies of these difficulties.

Interoceptive accuracy has also been shown to be low in somatoform disorders (SFD) (Pollatos, et al.,2011; Schaefer et al. 2012), which are characterised by the presence of medically unexplained physical symptoms (DSM-IV, 1994). This research potentially contradicts previous findings, which suggested that interoceptive accuracy is intact in SFD (Mussgay et al., 1999). A number of explanations for the difference in findings, both methodological and pertaining to the presentation of SFD, have been proposed. Schaefer and colleagues (2012) highlight the potential influence of emotional traits and states upon assessment of interoceptive accuracy.

Psychopathologies in which emotional states (the transient experience of emotion) and/or emotional traits (features of personality) dominate symptomatology, present a complex picture in interoceptive research. For example, increased interoceptive accuracy has been demonstrated in individuals with high trait anxiety or state anxiety (Pollatos, et al., 2007b), while by contrast, interoceptive accuracy is demonstrably lower in those with depression (Pollatos, et al. 2009). In their clinical presentation, however, anxiety and depression frequently combine (Liebowitz et al. 1990).

Depression is also associated with alexithymia, a condition also found in SFD (Hemming et al, 2019). Alexithymia is characterised by difficulty identifying and describing emotions as well as externally oriented thinking. These difficulties are considered to reflect impairments in emotional awareness and also in the regulation of emotions (Herbert et al. 2011). In a study of 155 healthy participants from a nonclinical population, Herbert and colleagues (2011) found that interoceptive accuracy (measured using a heartbeat counting task) was inversely associated with features of alexithymia.

Decreased interoceptive accuracy is evidenced in Autistic Spectrum Condition (ASC) too (Garfinkle et al. 2016). ASC often involves difficulties in regulating emotions and recognising emotional experience in others. Hatfield and colleagues (2019) have reviewed the literature pertaining to interoception and ASC; they conclude that a picture of *'atypical interoceptive processing is emerging'* (p. 219). The potential importance of interoception in ASC is acknowledged, with attention focusing on how deficits in the perception of bodily feedback might relate to core features of the condition and co-occurring psychopathologies (Hatfield et al. 2019).

Interoception: ongoing relationship to the other

The part that interoception might play in our relationship to others has been investigated by a number of researchers (Fukushima et al., 2011; Piech et al. 2017; Hatfield et al., 2019).

Fukushima and colleagues (2011) explored whether interoception is associated with empathy: the capacity to understand and share the feelings of another. Their hypothesis was that the neural activities involved in interoception, linked as they are to individual emotional experience, would also be involved in processing the affective states of others. They found:

> '…the central monitoring of the cardiovascular activity of one's own body is likely to be involved in processing the affective states of others…' (2011: p. 264)

Their supposition, linking interoception and empathy, was justified on the grounds that areas of the brain observed to be involved in empathy have been consistently found to overlap those involved in self-experience (Decety & Jackson, 2004), while the concept of 'shared representation' postulates that the brain represents the experiences of others in terms of the experiences of the self (Decety & Sommerville, 2003); and the activity of mirror neurons demonstrates that observation of the experience of the other triggers neural activity within the subject, as if the experience were happening to them directly (Rizzolatti et al., 2006). This suggests that mechanisms permitting us to understand the experience of another are firmly rooted in our own experiences.

Conclusion

Interoception has been fundamentally linked to emotion; to the generation and experience of emotion (Wiens et al., 2000; Pollatos et al., 2007; Seth & Friston, 2018); to emotional regulation (Zamariola, 2019); and emotional intelligence (Schneider et. al, 2005). Interoception is also linked to intuition (Dunn et al, 2010), and empathy (Fukushima et al, 2011).

There is an ongoing and burgeoning interest in interoception research in clinical populations, considering how the concept might shed light on specific psychopathologies (Pollatos, 2007b; 2008; 2009; Herbert, 2011; Martin, 2019) and conditions affecting development (Garfinkle, 2016; Hatfield et al, 2019). In non-clinical populations, the concept has been studied in relation to a specific professional group (Kandasamy et al., 2016).

Synthesis

Whilst recognizing that the phenomenal categories and language of affective neuroscience and psychoanalysis are discrete; and that there are potentially risks in conflating the two; their separate narratives nonetheless demonstrate intriguing parallels. In particular, this is evidenced in a shared interest in, and understanding of, the mind as both subject and active author of individual experience. Both disciplines hold a conception of human development (particularly the development

and maintenance of self-hood) as arising from the constant and dynamic interplay of actual and unconscious 'predicted' (or 'fantasy') experience. Both disciplines also espouse the central significance, in infancy, of the moderation of this dynamic interaction through the presence and activity of a care-giving other. Both disciplines have also been engaged in linking the domains of mind and body.

Based upon the Theoretical Review undertaken, the study proposes that interoception and countertransference may be linked and that psychoanalytic experiences of embodied countertransference may provide a particularly rich area of research incorporating the two concepts.

Key points emerging are:

- The experience of emotion, both unconscious and at times consciously translated into 'feelings' which can be reflected upon, is central to interoception and countertransference.

- Processes in the body, brain and mind are simultaneously receptive to and predictive of experience. The brain and/or mind takes an active in part in creating its emotional and related physiological environment through unconscious processes in both interoception and countertransference (the latter being potentially constructed of the analyst's inferences based on their previous experience, psychopathology and personality).

- Countertransference and interoception can both be understood to be involved in non-verbal communications between self and other.
- Interoception is fundamentally linked to emotional regulation and emotional regulation is a vital part of the analyst's management of countertransference experience.

Intuition is linked to interoceptive accuracy (Dunn et al., 2010). Countertransference and particularly embodied countertransference phenomena have been linked to intuition (Stone, 2006). Intuition is a vital part of the analyst's work where verbal communication and interpretation are not appropriate or possible.

A Working Understanding of Countertransference and Interoception?

Countertransference, as evidenced in the Review, can be understood as both theoretical construct and clinical phenomenon manifest in a range of forms, including the analyst's physical experience – in the body. Countertransference involves unconscious communication between individuals: in the clinical situation, it is experienced by the analyst as a result of their relationship with a particular patient. Unconscious projective mechanisms such as 'projective identification' may be understood as means by which countertransference phenomena operate. Whilst countertransference stems from unconscious process, it may become something consciously experienced, for example: after the fact through reflection and supervision; or during an interaction - depending upon the analyst's capacity to

inhabit a third, observational position. The analyst's subjectivity, their own psyche and psychic history, will necessarily influence how countertransference is experienced and understood. When the significance of the analyst's subjectivity is combined with the difficulty inherent in working with 'the unconscious' caution and a respect for the unknown is needed when speaking of countertransference.

In contrast to empathy, defined as "*The power of projecting one's personality into, and so fully understanding the object contemplation"* (OED, 1933), countertransference involves the receipt of projections from the object; and may at times involve an experience of a confusion of states between self and object (with experience not recognised as distinct and belonging to a separate 'object of contemplation' as it would be in empathy). As part of a process of coming to understand countertransference an analyst might employ a capacity for empathy however in order to deepen their understanding of the patient.

Interoception refers to an individual's perception of their own internal bodily environment. As has been argued, links between emotional experience, intuition and introception point to the possibility that interoception may play a part in how countertransference is experienced, particularly when that experience is felt to be within the body.

Empirical Study

Introduction

Methodology

The evidence gathered in the theoretical review inspires the following overarching research question – *is there a relationship between countertransference and interoception?* Indeed, it might be speculated on the basis of crucial links between interoception and emotional experience (Wiens et al., 2000; Pollatos et al. 2007, Craig, 2015) that interoception constitutes a physiological mechanism through which countertransference is experienced.

To begin to address this research question, an exploratory, empirical study was conducted using data collected on interoception, the specific experience of body-centred countertransference; and understanding and experience of countertransference more broadly, among child psychotherapy trainees.

Using a sample of 37 trainees, the following predictions were tested to explore the overarching research question:

1. *Interoceptive accuracy will increase with years of training in child psychotherapy.*

Existing literature suggests that interoceptive accuracy and emotional awareness are positively correlated. An increase in emotional awareness over the course of training might therefore be expected to correlate with an increase in interoceptive accuracy amongst trainees.

Furthermore, the existing research provides an example of a professional group (financial traders) where years of experience trading is positively correlated with interoceptive accuracy (Kandasamy et al. 2016).

2. *Reported confidence scores will increase with increases in interoceptive accuracy and year of training.*

   Reported confidence will follow increases in interoceptive accuracy, predicted as likely to increase with years of training.

3. *Interoceptive awareness will increase with interoceptive accuracy and reported confidence*.

   Interoceptive awareness is constituted of the correlation of accuracy and reported confidence (Garfinkle et al. 2015) and as such can be expected to increase with predicted increases in accuracy and confidence.

4. *Symptoms of body-centred countertransference will increase with interoceptive awareness.*

> The experience of body-centred countertransference requires the subject to observe and reflect upon both physiological and emotional experience. Interoceptive awareness involves a capacity for attention to physiological processes; and constituted, as a measure, in part of interoceptive accuracy – it is also linked to emotional experience.

Child psychotherapy trainees present an interesting population within the psychoanalytic community and they are the subject of the study for three logical reasons and one of pragmatics.

- Firstly, child psychotherapists by virtue of the population that they serve (infants, children and young people from 0–25 years) must have a willingness and a capacity to work in an embodied way.
- Second, training in child psychotherapy places considerable focus upon awareness of emotional experience and reflection upon it. The training requires individuals to develop their emotional awareness through their own personal analysis and the intensive and regular supervision of clinical work.
- Third, by taking trainee child psychotherapists as a population in which to explore interoception, an opportunity is provided to identify whether there are changes in interoceptive capacity over the course of training.

The final, pragmatic reason for focusing upon child psychotherapy trainees is that this population was accessible to me, as at the time of data collection I was myself a trainee child psychotherapist at the Tavistock Centre.

Ethics

Ethical approval was sought and granted by NOCLOR Research Support, managers of Research and Development for the Tavistock & Portman Mental Health Foundation Trust, and the Tavistock Research Ethics Committee (TREC). The detailed ethics application and approvals are available in Appendix A.

A research assistant was involved in the data collection interviews and in the subsequent storage and handling of participant data. This was because (as lead researcher) I was, like the study participants, a child psychotherapy trainee at the Tavistock Centre.

Sampling and Recruitment

A convenience sample was recruited, compromised of 37 trainees enrolled upon the Professional Doctorate in Child and Adolescent Psychoanalytic Psychotherapy delivered at the Tavistock Centre. This training is most commonly undertaken on a fulltime basis and completed over four years. Recruitment to the sample was from across all four years of the training.

Potential recruits were, in the first instance, invited to take part in the study via an email addressed to all trainees, and a supporting notification posted upon their online study forum. This communication included an electronic copy of the Participant Information Sheet.

All trainees, regardless of their year of study, are expected to attend a weekly teaching day each Wednesday during the academic term. Following the initial electronic communication to potential recruits, I attended the regular research teaching sessions of years one and two and small research seminar groups of years three and four: to invite trainees to participate in person, to provide a more fulsome explanation of the research and an opportunity for individuals to ask questions. Participant information sheets were also made available at this time, in hard copy. Those wishing to participate were asked to provide their name and contact details, for the purpose of arranging a data collection appointment.

Recruitment took place between November 2018 and February 2019. Initial interest was high with the majority of those approached expressing a wish to be included. For reasons of practicality, data collection had to be undertaken on a Wednesday; this being the only time all trainees were at the Tavistock Centre (trainees being otherwise based in clinical placements across a range of geographical locations). This, along with the time necessary to undertake data collection sessions, proved a

limiting factor in the number of participants ultimately included within the study, (n=37). The total population of trainees in the academic year 2018/19 was 74.

Participants were offered no specific incentives, monetary or otherwise. Trainees were encouraged to participate on the grounds that doing so would give them an opportunity to be actively involved in an original piece of child psychotherapy research, but it was made explicit that the choice to participate would have no ultimate bearing upon their studies or grades in accordance with the ethical approval granted for the study.

Data Collection

Individual data collection sessions took place at the Tavistock Centre. Sessions lasted 20 - 40 minutes, dependent upon the speed with which each participant settled to the task and completed the questionnaires.

Participants were welcomed, provided with an overview of the data collection process, including an explanation of the role of the research assistant in protecting their anonymity. A further opportunity to ask questions was provided before the consent form was completed.

Participants provided basic demographic data, were given a data collection pack, and asked to complete two questionnaires within it, described in the 'Measures' section. Once completed, participants were accompanied to a different room and introduced to the research assistant.

The research assistant collected the demographic data, applying to it a randomized participant number. The same number was attached to the data collection pack once the Heart Beat Counting Task was complete. From this time onwards, the research assistant kept the demographic data sheet linking the participant's name and participant number separate, providing demographic data for analysis by participant number only.

The research assistant explained the procedure for the Heartbeat Counting Task to the participant. A heartbeat monitoring device was then applied to the participant's left wrist, or in some circumstances their left index finger[9]. The participant was asked to look away and to try to relax. The research assistant waited for the monitor to establish a regular trace of the participant's heartrate before beginning the Heartbeat Counting Task.

The Heartbeat Counting task entails asking the participant to silently count their heart beats, as they perceive them (without feeling for a pulse) over discrete time-periods. In this instance 6 periods: 25, 30, 35, 40, 45 and 50 seconds. The sequence of these periods was randomised for each participant. The research assistant marked the start and end of each time-period with the word 'begin' and an alarm indicating when it was time to stop. At the end of each period, the participant was asked to record the number of heartbeats they had counted. They were also asked to record, by means of a visual analogue scale ranging from 0 (Total guess/No heartbeat awareness) to 10 (Complete confidence/ Full perception of heartbeat), their confidence in this number. While the participant attempted to count their heartbeats, the research assistant simultaneously monitored their actual heartrate

[9] The wrist was used predominantly as acrylic nails and shellac nail polish interfered with readings taken from the index finger of participants. It was necessary to use the index finger for participants where physical characteristics were observed by the research assistant to make the wrist reading inaccurate. The wrist and finger sensors were checked against each other for consistency prior to use.

by means of the pulse oximetry device that had been applied to the wrist or finger. At the end of each time-period the research assistant recorded the participant's actual heartrate.

Data collected through the Heartbeat Counting Task therefore consisted of: the participant's perceived heartbeat, their actual heart rate and a record of their confidence in their ability to perceive and count their heartbeats; over 6 discrete time-periods.

Participants were provided with a written debrief.

Explanation of Measures

Demographic data

Basic demographic measures were taken as potential control variables: age; gender; and year of training.

'Age' was recorded in whole years.

'Gender' was presented as an open question. All participants answered as either male or female. Due to the relatively small sample size and in order to ensure the anonymity of participants, gender has only been considered for limited discussion.

'Year of training' was measured as 1, 2, 3 or 4. As data collection was over a period of 4 months, for each year group this reflects:

Year 1: less than 1 year (up to a maximum of 4 months in training)

Year 2: less than 2 years (up to a maximum of 16 months in training)

Year 3: less than 3 years (up to a maximum of 28 months in training)

Year 4: less than 4 years (up a maximum of 40 months training)

The Egan and Carr Body-Centred Countertransference Scale (2005)

The first questionnaire utilised was the Egan and Carr (2005) Body-Centred Countertransference Scale. This is a sixteen-item questionnaire, each item representing a form of body-centred countertransference. Participants were required, by means of a four-point Likert scale, to record the frequency with which they might have experienced each item/symptom.

This questionnaire was developed out of the Trauma Symptom Inventory (Briere, 1995).

In addition to recording the frequency of body-centred countertransference symptoms across the sample, the questionnaire was used to assess the frequency with which individual participants reported symptoms. Each participant was given a

'Body-centred Counter-transference Score' (BCS) consisting of the sum of their reported scores

Three Questions on Countertransference

The second questionnaire utilised was intended as a brief qualitative exploration of participants' understanding of countertransference, recognising this as incorporating but not exclusively focused upon bodily symptoms.

Three open questions were asked:

1) What do you understand the psychoanalytic concept of countertransference to mean?
2) Please give a brief description of an experience of countertransference from your practice in Child and Adolescent Psychotherapy.
3) Please summarise what the importance of countertransference is to you as a Child and Adolescent Psychotherapy trainee.

The rationale was to examine understanding of:

a) the 'theoretical', that is definition and meaning of countertransference;
b) experience of the phenomenon;
c) import or value - how trainees might synthesis their previous thoughts on theory and experience of practise.

Braun and Clarke's (2006) six-phase framework for thematic analysis was used in combination with a basic linguistic analysis to explore the data collected.

The Heartbeat Counting Task (HCT)

The Heartbeat Counting task (HCT) as developed by Schandry (1981, investigates interoceptive accuracy through assessment of an individual's capacity to perceive their body's own internal condition, specifically heartbeats. This measure has been a central component in interoceptive research studies since its inception (Kock & Pollatos, 2014; Cali et al., 2015; Kandasamy et al., 2016; Shah et al., 2016; Yao et al., 2018). The rationale for heartbeats as the focus of assessment lies in their discrete occurrence, the potential for objective, non-invasive measurement and variability in their perception by individuals despite continuous occurrence.

Data collected from the HCT consisted of reported heartbeats and recorded heartrate.

Following the model of Kandasamy and colleagues (2016), whose research applied the HCT to a specific professional group, our HCT was conducted over six time intervals, randomised in their sequence occurrence, for each participant. Data collected was used to calculate interoceptive accuracy (IAc).

Interoceptive Accuracy (IAc)

The difference between reported heartbeats and recorded heartrate is considered illustrative of interoceptive accuracy (IAc). The following formula, as described by Koch and Pollatos (2014) is considered standard practice in the calculation of an interoceptive score (Cali et al. 2015).

1/6 SUM [1-(|recorded heartbeats – counted heartbeats|)/recorded heartbeats]

Koch and Pollatos (2014) report that higher scores are indicative of increased sensitivity in the perception of heartbeats and that a score of 1 can be considered absolute accuracy.

Reported Confidence Score (RCS)

Once again, following Kandasamy and colleagues (2016), heartbeat perception confidence scores were collected as part of the HCT. Potential relationships between interoceptive accuracy (performance on objective behavioral tests such as the HCT), interoceptive sensibility (subjective self-reporting, using interviews/questionnaires) and interoceptive awareness (referring to meta-cognitive awareness of interoceptive accuracy such as might be indicated by a confidence–accuracy correspondence) have been the subject of discussion in previous research (Garfinkle et.al 2015). The intention in recording participants' heartbeat confidence scores was to examine whether *accuracy*, which implies *awareness*, would be linked to an increase in *reported confidence*.

Interoceptive Awareness (IAw)

Following Garfinkle and colleagues (2015), who consider interoceptive accuracy IAc (as an objective measure of interoception in relation to a specific task – here the Heartbeat Counting Task) and interoceptive awareness (IAw) (as the metacognitive awareness of IAc) as distinct, the study also reports on participant 'interoceptive awareness'.

An IAw score was calculated by analyzing the correspondence between participant reported confidence score (RCS) and IAc, after the method of Garfinkle and colleagues (2015). This entailed creating an index of interoceptive awareness by employing a within-participant Pearson correlation, r, between confidence and accuracy.

The Pearson correlation examines how closely correlated two things are (here, IAc and RCS). At 0 there is no correlation, while scores up to 1 indicate a positive correlation (the closer to 1 the stronger the correlation). Scores down to -1 indicate a negative correlation (the closer to -1 the stronger the negative correlation).

Accordingly, those who were high in IAc and high in RCS could be considered high in IAw (indicated by an *r* above 0), those who were low IAc and low in RCS might also be considered high in awareness (also indicated by an *r* above 0). By contrast, a mismatch between IAc and RCS results in low IAw (indicated by an *r* of 0 and below).

Statistical Approach

All statistics were calculated through the R Project for Statistical Computing, a free software environment for statistical computing and graphics.

Exploratory, descriptive analysis of the data indicated that neither IAc, RCS nor Body-centred Countertransference Questionnaire (BCS) scores were normally distributed within the sample. Non-parametric tests were therefore employed in the statistical analysis of this data. Initial analysis of these variables revealed an outlying participant in year 4. Given the potential for this data to impact upon the sample, particularly when broken down into smaller year group subsets, analysis of predictions 1 and 2 run without this data. For comparison, results tables including this participant see Appendix B.

IAw by contrast was found to be normally distributed and therefore all data was included and parametric tests applied.

1. Interoceptive accuracy (IAc) will increase with year of training (YoT).

To test this prediction, differences in average IAc between year groups were compared; if the prediction holds then average IAc would be higher in later year groups compared to earlier year groups. Because exploratory analysis indicated IAc scores were not normally distributed (see Appendix B), year group averages were

median IAc values in keeping with non-parametric analysis; and the appropriate Wilcoxon Rank Sum test was employed in testing for group differences found.

In light of the results of the above Wilcoxon Rank Sum tests, planned multiple regression analysis was found to be redundant.

2. Reported confidence scores (RCS) will increase with increases in interoceptive accuracy (IAc) and year of training (YoT).

To test this prediction, I tested for differences in average RCS between year groups; if the prediction holds then average RCS would be higher in later year groups compared to earlier year groups. Because exploratory analysis indicated that RCS are not normally distributed, the non-parametric Wilcoxon Rank Sum test was employed and median RCS values calculated to interpret any significant differences found.

A series of regression models were then run as follows:

Model 1 assessed whether YoT, treated as a categorical variable in which year 1 is the reference category, positively predicts RCS; Model 2 assessed whether IAc positively predicts RCS; and Model 3 assessed whether YoT and IAc positively predict RCS when adjusting for the influence of the other.

3. Interoceptive awareness (IAw) will increase with interoceptive accuracy (IAc)

A median split of IAc scores was used to investigate whether participants considered to be high or low in IAc, as determined by the split, differed in their interoceptive awareness (IAw). This follows the model of analysis of Garfinkle and colleagues (2015). If the prediction holds then the average IAw score will be higher in participants classified as 'high' on IAc compared to those classed as 'low'. An independent t-test was used to determine whether IAw was different in participants with accuracy scores classified 'high' relative to those classified 'low', with mean scores used to interpret any significant findings.

4. Symptoms of body-centred countertransference will increase with interoceptive awareness (IAw).

To test this prediction, participants were grouped into one of two categories with the options 0 = 'not aware', or 1 = 'aware'. First, a Wilcoxon Rank Sum test was used to test whether the average body-centred countertransference score (BCS) differed between 'not aware' and 'aware' groups, with median scores used to interpret any significant findings.

Second, a multiple regression model was used to assess whether being 'aware' positively predicts BCS after controlling for YoT.

Results

Sample Characteristics

Descriptive statistics include all participant data.

The total number of participants recruited was 37, half of the total population of child psychotherapy trainees studying at the Tavistock in the academic year 2018/19 (n=74).

Table 3. illustrates the age and gender of participants. The overall age range was 27–55 years, mean age was 39.6. Mean age was highest in year 4 and lowest in year 2.

Overall, gender within the sample was representative of the total population of trainees, of whom 57 were female and 17 males. In the study sample 29 participants were female while 8 were male.

Year 4 trainees were the largest subgroup within the sample (n=14). This is most likely related to me (the researcher) being a member of the Year 4 cohort. Statistical analysis can partially account for the difference in numbers between the subgroups, but cannot account for unmeasured between-group difference that might result

from the different relationship Year 4 participants potentially had with research process through their relationship with me.

Table 3. *Age and Gender of Sample*

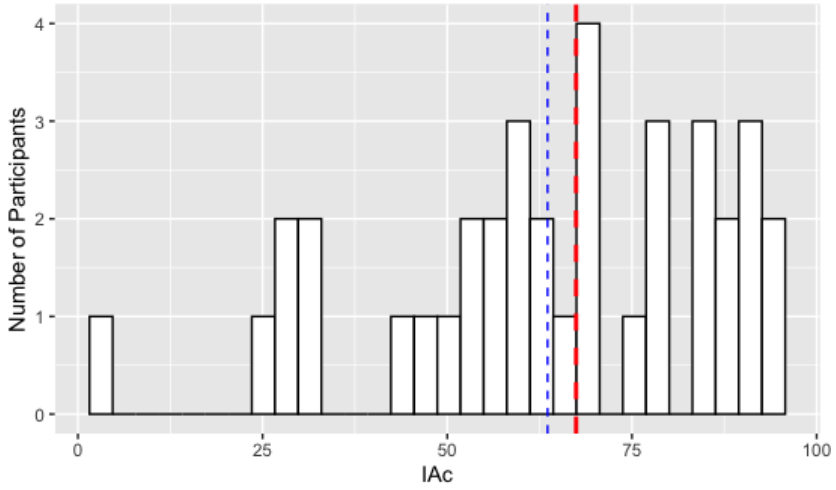
Year of Training	Total no.	Female	Male	Age range in years	Mean age in years (Standard Deviation)
1	9	8	1	27 – 55	39.6 (SD 10.6
2	7	5	2	28 – 51	38.4 (SD 7.89)
3	7	7	1	31 – 55	39.2 (SD 8.52)
4	14	10	4	32 – 53	40.5 (SD 7.97)
Total	**37**	**29**	**8**	**27 – 55**	**39.6 (SD 8.42)**

Describing Interoceptive Accuracy (IAc)

Table 4. *% **IAc** by demographics*

Demographic variable	**% IAc**	
	Mean (SD)	**Median (range)**
Year 1 (n=9)	62.733 (25.038)	68.118 (26.177, 93.071)
Year 2 (n=7)	62.500 (15.110)	59.947 (42.976, 85.629)
Year 3 (n=7)	60.182 (25.679)	59.700 (26.723, 93.686)
Year 4 (n=14)	66.344 (24.846)	71.334 (2.652, 91.704)
Female (n=29)	63.381 (20.962)	67.439 (26.177, 93.686)
Male (n=8)	64.269 (29.907)	68.882 (2.652, 90.872)
20 – 29 years (n=2)	53.422 (36.142)	53.422 (27.866, 78.979)
30 – 39 years (n=17)	69.535 (21.031)	77.817 (26.177, 90.872)
40 – 49 years (n=11)	62.185 (20.046)	63.369 (26.177, 93.686)
50 + years (n=7)	54.172 (28.039)	56.645 (2.652, 91.704)
Total (n=37)	***63.573 (22.711)***	***67.439 (2.652, 93.685)***

Figure 2. *Histogram, Frequency of Distribution IAc.*



--------- *mean*

_ _ _ _ *median*

Figure 3. *Q-Q plot, Assessing Normality Distribution IAc*

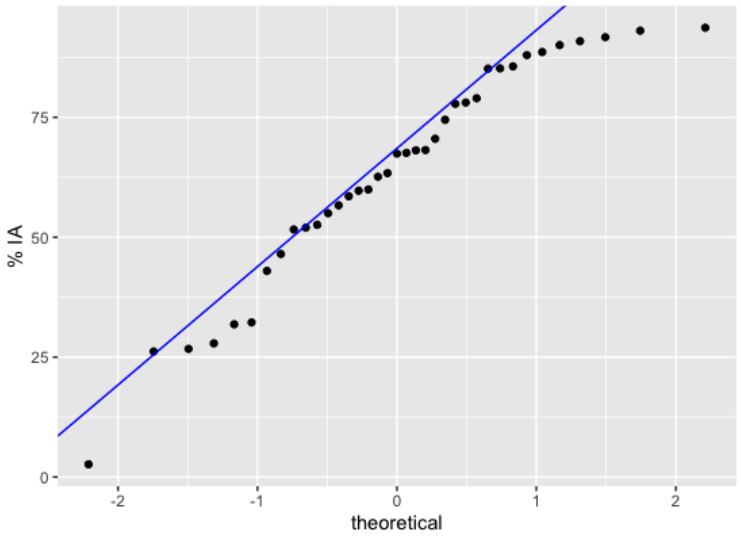


Figure 3. provides a visual illustration of the distribution of sample data for IAc. IAc data (y axis) is plotted against a theoretical normal (x axis). It suggests that the IAc data does not follow a pattern of normal distribution. Data falls along the line in the centre of the plot but tails off at both ends, suggesting the presence of more extreme data values than would be expected in a normal distribution.

The distribution of IAc was also examined by year group subset, through QQ plots. These demonstrated that data by year, like the data-set as a whole, could not be considered to have normal distribution (**Appendix C)**.

Describing Reported Confidence Scores (RCS)

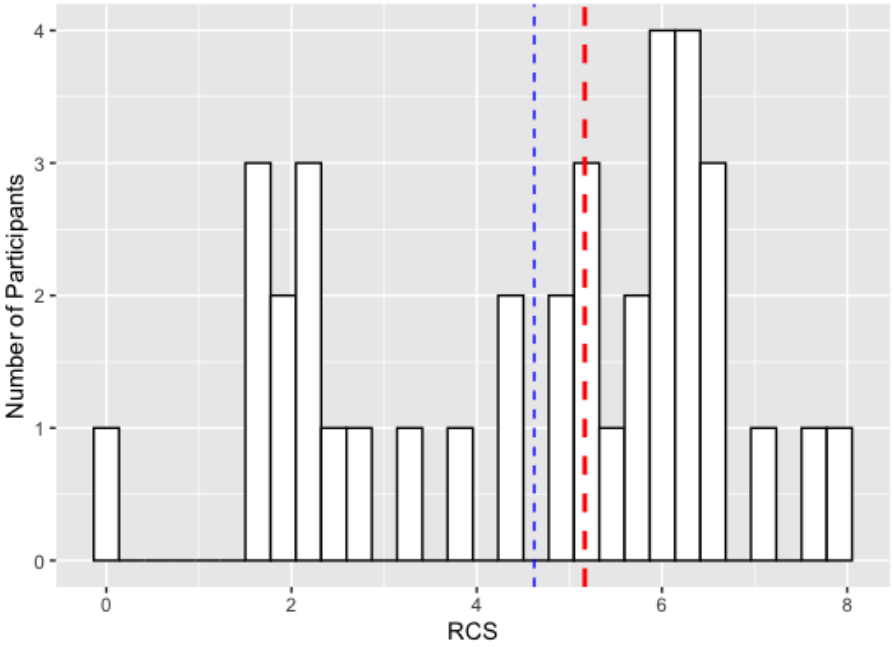
Table 5 describes RCS by demographic variables. Year 1 has the highest average RCS by mean and median and Year 2 has the lowest. Year 4 participants demonstrate the greatest range in RCS and Year 3 the smallest.

Males are a fraction more confident than females across both mean (difference = 1.182) and median (difference = 1.017).

Table 5. *RCS by Demographics*

Demographic variable	**Reported Confidence Score (RCS)** *RCS scale: 0 = 'total guess/no heartbeat awareness'* *to 10 = 'complete confidence/full perception of heartbeat.*	
	Mean (SD)	**Median (range)**
Year 1 (n=9)	5.639 (1.562)	6.167 (1.883, 6.967)
Year 2 (n=7)	3.076 (1.955)	2.667 (0.000, 5.783)
Year 3 (n=7)	3.946 (2.090)	4.300 (1.517, 6.400)
Year 4 (n=14)	5.077 (1.974)	5.275 (1.767, 7.917)
Female (n=29)	4.366 (2.107)	5.050 (0.000, 7.917)
Male (n=8)	5.548 (1.620)	6.067 (2.667, 7.767)
20 – 29 years (n=2)	4.283 (2.805)	4.283 (2.300, 6.267)
30 – 39 years (n=19)	4.986 (1.636)	5.167 (1.567, 6.967)
40 – 49 years (n=11)	4.053 (1.924)	4.300 (1.517, 6.383)
50 + years (n=7)	4.724 (3.100)	6.167 (0.000, 7.917)
Total (n=37)	*4.621 (2.051)*	*5.167 (0.000, 7.917)*

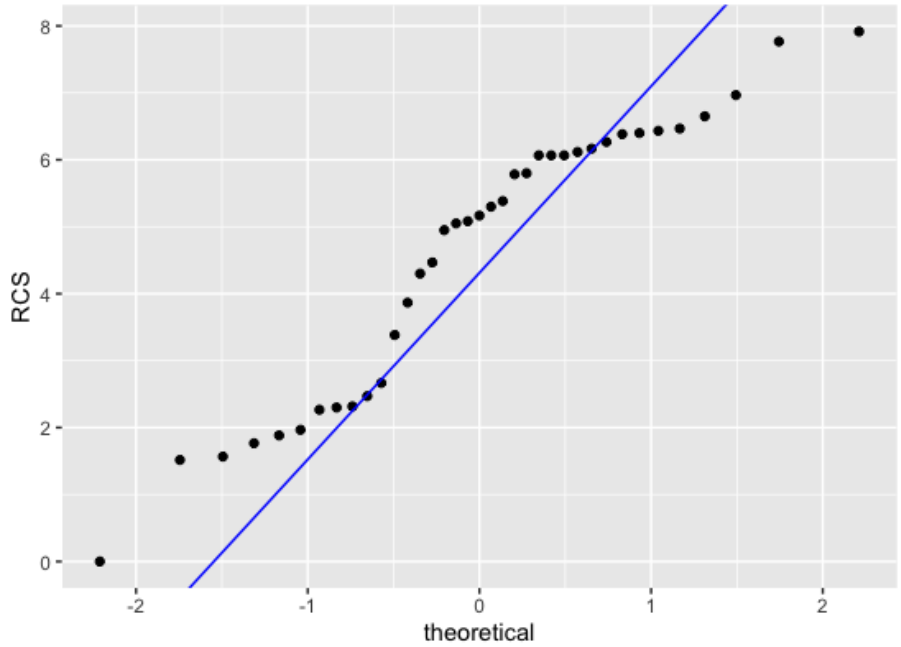
Figure 4. *Histogram, Frequency of Distribution RCS*



--------- *mean*

_ _ _ _ *median*

Figure 5. *QQ-plot, Normality of Distribution RCS*



RCS are not normally distributed (Figure 5). The distribution of RCS was also examined by year group subset, demonstrating data by year not to be have normally distributed either (**Appendix C**).

Describing Interoceptive Awareness (IAw)

Table 6. *IAw by Demographics.*

Demographic variable	**Interoceptive Awareness (IAw)** *IAw scores have a possible range of -1 to 1, where 1 represents complete awareness and 0 and below no awareness.*	
	Mean (SD)	**Median (range)**
Year 1 (n=9)	0.151 (0.523)	0.310 (-0.599, 0.856)
Year 2 (n=7)	0.321 (0.556)	0.492 (-0.429, 0.941)
Year 3 (n=7)	-0.114 (0.674)	0.229 (-0.903, 0.683)
Year 4 (n=14)	0.111 (0.312)	0.139 (-0.490, 0.548)
Female (n=29)	0.072 (0.520)	0.128 (-0.903, 0.941)
Male (n=8)	0.283 (0.345)	0.209 (-0.291, 0.723)
20 – 29 years (n=2)	0.070 (0.706)	0.070 (-0.429, 0.569)
30 – 39 years (n=17)	0.216 (0.483)	0.229 (-0.902, 0.856)
40 – 49 years (n=11)	0.004 (0.573)	-0.047 (-0.903, 0.941)
50 + years (n=7)	0.074 (0.377)	0.189 (-0.631, 0.467)
Total (n=37)	*0.118 (0.492)*	*0.189 (-0.903, 0.941)*

Table 6 illustrates that mean interoceptive awareness (IAw) across the sample was low: 0.118, on the scale where 1 indicates high awareness. Following Garfinkle and

colleagues (2015) the relative presence or absence of IAw at group level was confirmed using a one-sample t-test to establish whether IAw (calculated as the Pearson r Correlation between reported confidence and interoceptive accuracy) were significantly greater than 0 (thereby indicating 'awareness'). Results show that at group level interoceptive awareness (IAw) approaches but does not reach statistical significance (t=1.459, p=0.077, sample estimate =0.118). Garfinkle and colleagues (2015) report a mean awareness of 0.2, and by contrast found that at group level awareness differed significantly from 0 (p = < 0.001).

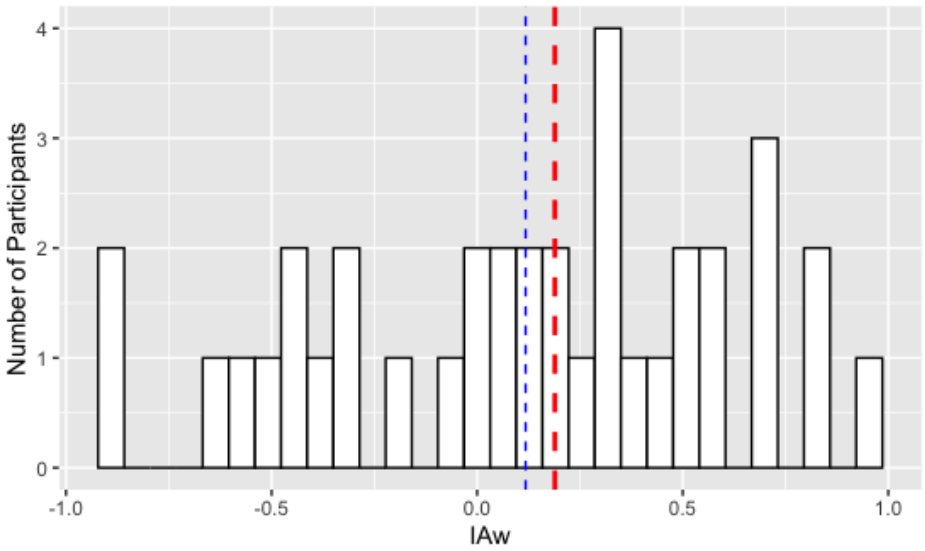
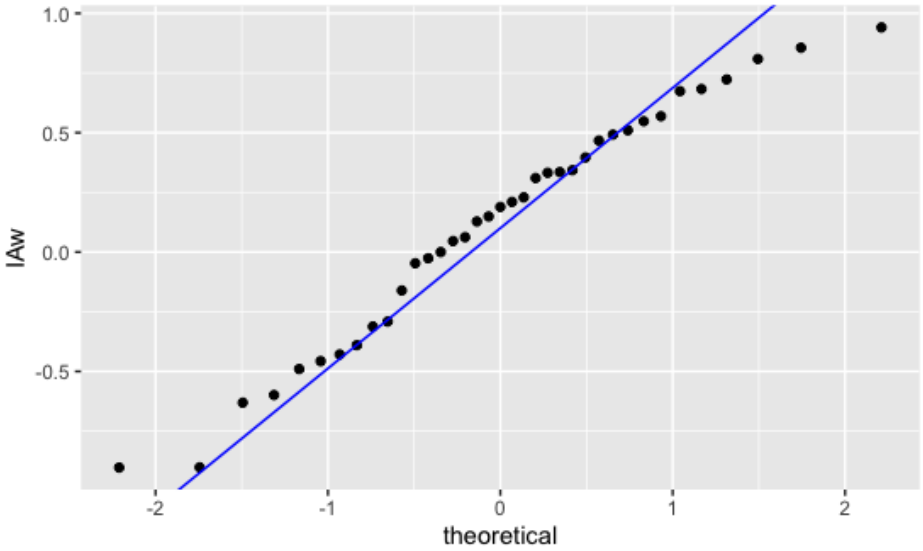


Figure 6. *Histogram, frequency of IAw*

--------- *mean*

_ _ _ _ *median*

Figure 7. *Q-Q plot, distribution of IAw*



IAw data at individual level was found to be consistently normal. Figure 7 demonstrates that the majority of IAw data-points fall along the theoretical normal, although there is evidence of outlying data at each end of the range. A Shapiro-Wilk test confirmed normality (W=0.968, p=0.350) and parametric tests were therefore employed.

Describing Body-centred Countertransference

Table 7. *Egan and Carr Body-centred Countertransference Scale (2005)*

	Body-Centred Counter-transference Symptoms	**0** **'Has never happened in the last 6 months.** %	**1** **Has happened in the last 6 months, but not often.** **%**	**2** **Has happened a few times in the last 6 months.** **%**	**3** **Has happened often in the last 6 months.** **%**	**Occurring at any time in the last 6 months.** **%**
1	Muscle Tension	8.108	21.621	27.027	43.243	91.891
2	Sleepiness	5.405	16.216	29.729	48.648	94.594
3	Yawning	13.513	35.135	24.324	27.027	86.486
4	Tearfulness	27.777	50	16.666	5.555	72.221
5	Unexpectedly Shifting your Body	27.027	8.108	40.540	24.324	72.972
6	Headache	51.351	32.432	8.108	8.108	48.648
7	Stomach Ache	40.540	18.918	32.432	8.108	59.459
8	Throat Constriction	43.243	37.837	18.918	0	56.756
9	Raised Voice	25	41.666	25	8.333	77.777
10	Dizziness	59.459	13.513	24.324	2.702	40.540
11	Loss of Voice	78.378	16.216	0	5.405	21.621
12	Aches in Joints	70.270	16.216	13.513	0	29.729
13	Nausea	51.351	29.729	13.514	2.702	48.648
14	Numbness	67.567	21.621	8.108	2.702	32.432

15	Sexual Arousal	59.450	32.432	5.405	2.702	40.540
16	Genital Pain	89.189	8.108	0	0	8.108

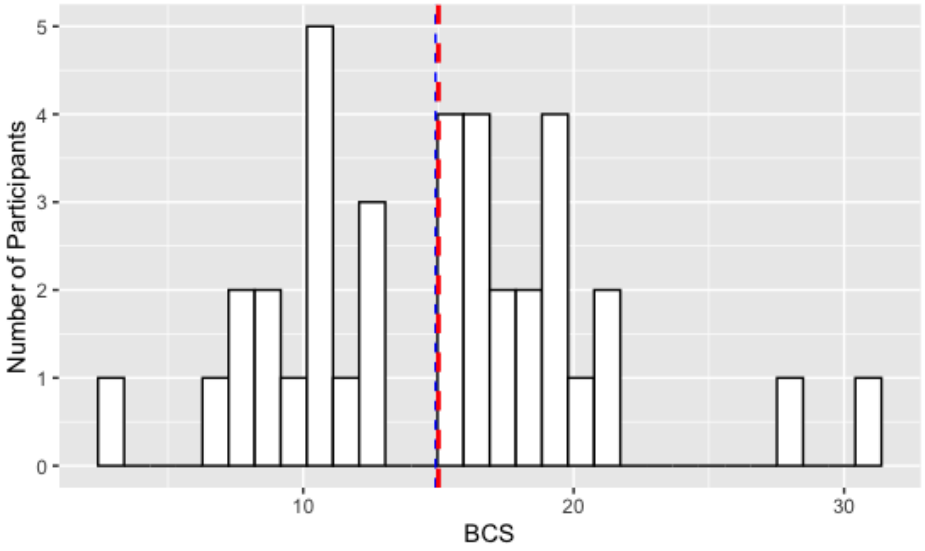
Table 7 describes the frequency with which various symptoms of body-centred countertransference were experienced across the sample as a whole. Strikingly, 94.6% of the sample report experiencing the most commonly occurring symptom of 'Sleepiness'. 'Muscle Tension' was next frequently reported at 91.9%. This was followed by: 'Yawning' (86.5%); 'Raised Voice' (77.8%); 'Unexpectedly Shifting your Body' (73.0%); and 'Tearfulness' (72.2%). 'Stomach Ache' and 'Throat Constriction' were also reported as occurring in the last 6 months by over 50%.

As well as analysing the frequency with which symptoms of body-centred countertransference were recorded, data collected was also used to assess the frequency with which individual participants reported symptoms. Participants were thus given a 'Body-centred Counter-transference Score' (BCS), consisting of the sum of their reported scores. Because data was missing from three questionnaire items, pertaining to three separate individuals, a score for these participants was imputed using the mean score for that item from their 'YoT' subset. Table 8 presents BCS by demographic.

Table 8. *BCS by Demographics*

Demographic variable	**Body-centred Countertransference Score (BCS)**	
	Mean (SD)	**Median** **(range)**
Year 1 (n=9)	11.2 (5.12)	11.0 (3.00 – 19.0)
Year 2 (n=7)	15.1 (3.72)	16.0 (11.0 – 21.0)
Year 3 (n=7)	19.7 (5.65)	19.0 (13.0 – 31.0)
Year 4 (n=14)	14.7 (5.20)	15.0 (8.00 – 28.0)
Female (n=29)	15.1 (5.04)	15.0 (7.00 – 31.0)
Male (n=8)	14.3 (7.59)	13.5 (3.00 – 28.0)
20 – 29 years (n=2)	12.0 (1.41)	12.0 (11.0 – 13.0)
30 – 39 years (n=17)	13.5 (5.71)	13.0 (3.00 – 28.0)
40 – 49 years (n=11)	15.5 (6.53)	15.0 (7.00 – 31.0)
50 + years (n=7)	18.3 (2.36)	19.0 (15.0 – 21.0)
Total (n=37)	*14.9 (5.58)*	*15.0 (3.00 – 31.0)*

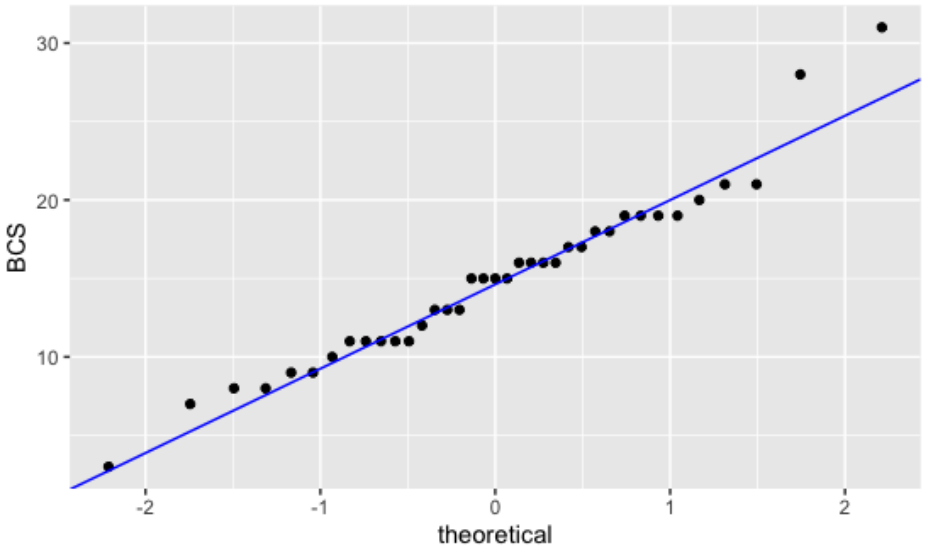
Figure 8. *Histogram, Frequency of Distribution BCS*



--------- *mean*

_ _ _ _ *median*

Figure 9. *Q-Q plot, Normality of Distribution BCS*



Although much of the data runs close to the theoretical norm of Figure 9, distribution of BCS cannot be considered normal due to the marked tailing of data at either end of the plot. Examination by year group subset, demonstrated that sub-set data could not be considered to have normal distribution either (**Appendix C)**.

Testing prediction 1: interoceptive accuracy (IAc) will increase with year of training (YoT).

Contrary to Prediction 1, observations of IAc in Table 4 suggests that there is not a positive relationship between YoT and IAc – this is further illustrated by Figure 10 and confirmed by the results of Wilcoxon Rank Sum test [10] which find no significant differences between average IAc scores of lower compared to higher year groups (see Table 9).

[10] The Wilcoxon Rank Sum test is the nonparametric equivalent of an independent t-test. As such, it is used to compare differences between two independent sample groups. Functionally, it is the same as a Mann-Whitney test (1947).

Figure 10. *Boxplot IAc and YoT*

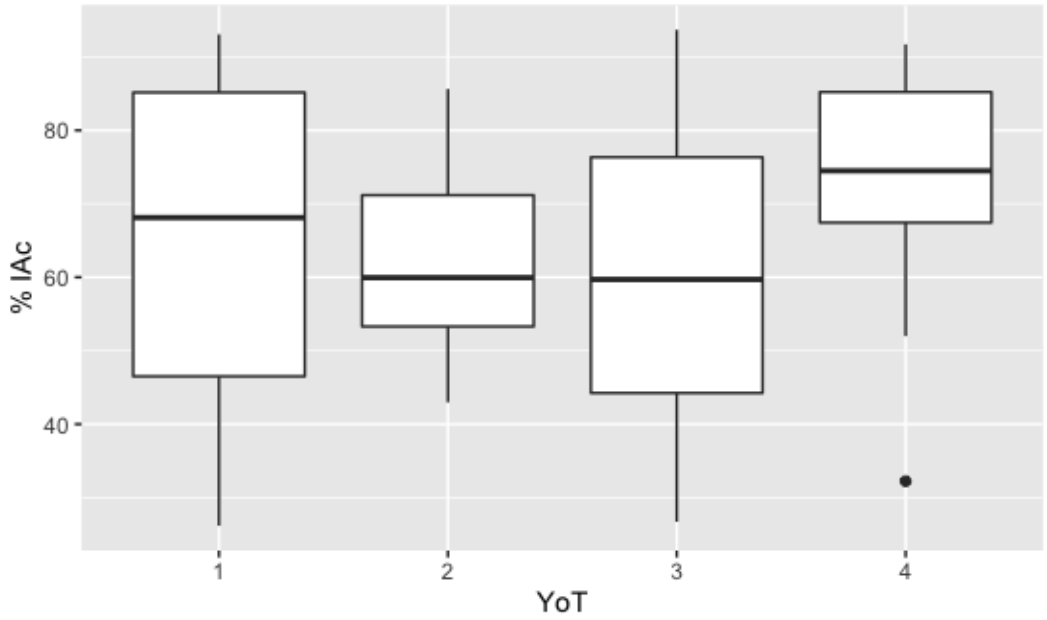


Table 9. *Wilcoxon Rank Sum testing differences in IAc across YoT*

Comparison (Group 1vs Group 2)	Group 1 IAc median	Group 2 IAc median	W	P value
Year 1 vs year 2	0.681	0.599	34	0.832
Year 1 vs Year 3	0.681	0.597	32	1
Year 1 vs Year 4	0.681	0.744	48	0.504
Year 2 vs year 3	0.599	0.597	32	1
Year 2 vs Year 4	0.599	0.744	30	0.234
Year 3 vs Year 4	0.597	0.744	33	0.341

Summary of Prediction 1: interoceptive accuracy (IAc) will increase with year of training (YoT)

Results do not support the hypothesis of a positive relationship between IAc and YoT. Rather, the boxplot of Figure 10 hints at the possibility of something else: namely, the diminishing of IAc between years 1 and 3 and a rebound in year 4, analysis of the differences observed do not reach statistical significance however (Table 9).

Testing Prediction 2: reported confidence scores (RCS) will increase with year of training

RCS and YoT

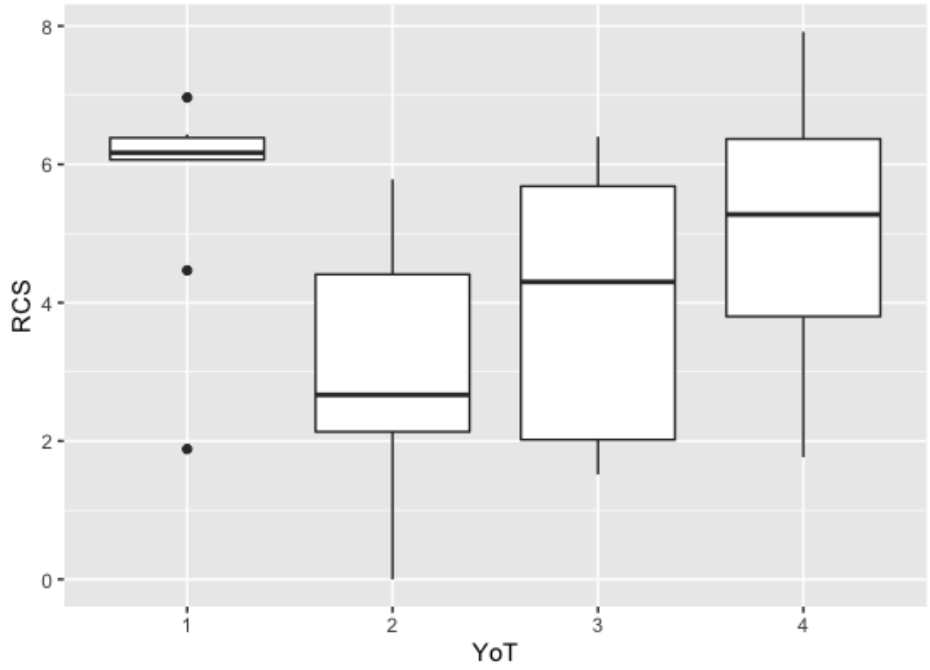


Figure 11. *Boxplot illustrating RCS and YoT*

Figure 11 illustrates a striking clustering in Year 1 around the median RCS, which is the highest across all four years of training. In Year 2, median RCS decreases and there is a concurrent broadening of the range. Although, in Year 3, the median RCS rises, the majority of participants in this year group in fact have RCS similar to those in Year 2. In Year 4 a rebound in RCS is evident.

The overall pattern of Figure 11 is somewhat reminiscent of IAc (Figure 10), insofar as an initial decline is followed by a rise in Year 4. The notable difference here is that although the bulk of Year 3 participants report confidence similarly to their counterparts in Year 2, the median and range of RCS in Year 3 is nonetheless lifted from Year 2. This is in contrast to the IAc data, where in Year 3 IAc was lowest across all YoT.

Table 10. *Wilcoxon Rank Sum testing differences in RCS across YoT*

Comparison **(Group 1 vs Group 2)**	**Group 1** **RCS median**	**Group 2** **RCS median**	**W**	**P value**
Year 1 vs Year 2	6.166	2.666	55	**0.015**
Year 1 vs Year 3	6.166	4.300	49.5	0.064
Year 1 vs Year 4	6.166	5.275	76.5	0.413
Year 2 vs Year 3	2.666	4.300	19	0.523
Year 2 vs Year 4	2.666	5.275	22	**0.048**
Year 3 vs Year 4	4.300	5.275	33.5	0.263

The Wilcoxon Rank Sum tests (Table 10) show that there are statistically significant differences in RCS between year groups, but a positive correlation between RCS and YoT, as had been predicted, is not shown.

Statistically significant difference between the average RCS of Year 2 and Year 4 are present as predicted, with Year 2 having a median RCS of 2.7 versus a median of 5.3

in Year 4. However, this is preceded by a drop in RCS between Year 1 (median RCS 6.2) and Year 2 (median RCS 2.7), and no difference in RCS is found between Year 1 and Year 4 – negating the prediction overall.

Subsequent regression analysis (Table 11, Model 1), further confirms a lack of a positive relationship between YoT and RCS. However, mirroring the pattern found in the Wilcoxon Rank Sum test, a negative relationship between YoT and RCS across the first two years of training (p = 0.012) is observed.

Table 11. *Model 1: multiple regression showing the predictive impact of YoT on RCS*

Variable	Estimate	P value	Standard error	Confidence interval at 2.5%	Confidence Interval at 97.5%
Intercept	5.639	0.000	0.634	4.439	6.928
Year 2 (ref = Year 1)	-2.563	**0.012**	0.958	-4.512	-0.613
Year 3 (ref = Year 1)	-1.693	0.086	0.958	-3.643	0.256
Year 4 (ref = Year 1)	-0.562	0.494	0.812	-2.214	1.091

Overall model p-value: **0.046**

Adjusted R-squared: 0.141

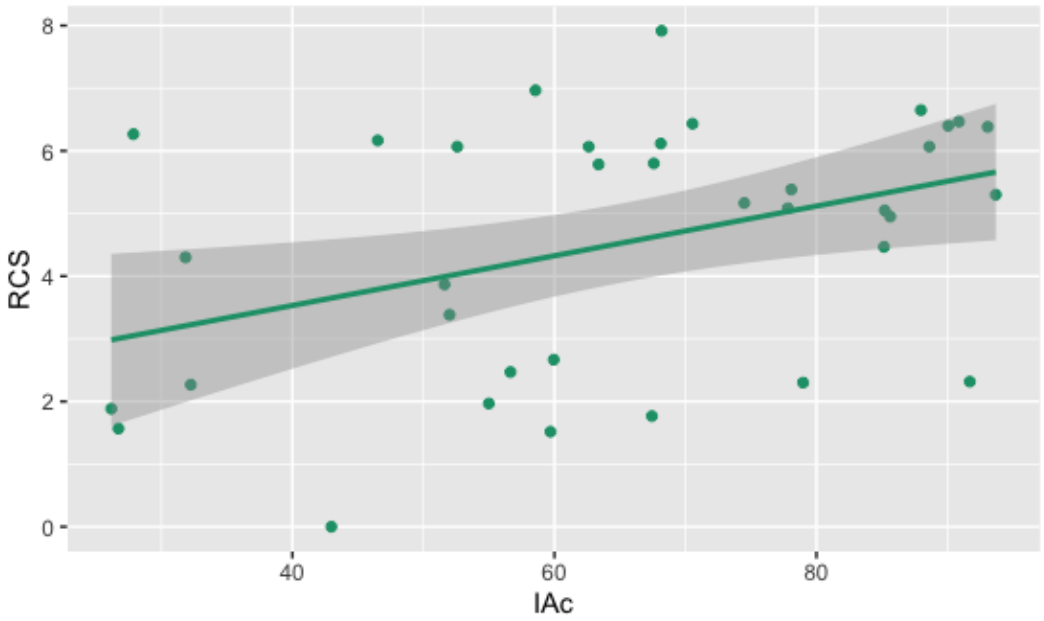
Adjusted R-Squared indicates that YoT explains 14% of variance in RCS, with other unknown variables accounting for the remaining 86% of difference between individuals (Table 11).

Adding participant 'Age' as an additional variable did not improve the predictive power of the model and was not been retained within it.

RCS and IAc

Having established that RCS is related to YoT, though not as predicted, it was necessary to examine the extent to which this RCS could in turn be directly related to IAc.

Figure 12. *Scatter-graph, RCS and % IAc,*



In the scatter-graph of Figure 12 the possibility of the predicted positive correlation between increasing IAc and RCS is suggested by a rising regression line. This was

tested with a simple regression, to identify whether IAc is indeed predictive of RCS (Table 12).

Table 12. *Model 2: simple regression exploring IAc as the independent variable and RCS as the outcome variable.*

Variable	Estimate	P value	Standard error	Confidence interval at 2.5%	Confidence Interval at 97.5%
Intercept	1.945	0.000	1.048	0.185	4.076
IAc	0.040	**0.014**	0.015	0.008	0.071

Adjusted R s-squared: 0.140

Overall model p-value: **0.014**

In keeping with the indications of scatter-graph Figures 12, Table 12 demonstrates a positive relationship (p=0.014) between IAc and RCS, as predicted.

RCS, IAc and YoT

The results of regression Model 3 show that the positive relationship between IAc and RCS remains after controlling for YoT (Table 13).

Table 13. *Model 3: multiple regression exploring IAc as the independent variable, RCS as the outcome variable and controlling for YoT as a categorical variable, with Year 1 as the reference.*

Variable	Estimate	P value	Standard error	Confidence interval at 2.5%	Confidence Interval at 97.5%
Intercept	3.240	0.005	1.073	1.051	5.430
IAc	0.038	**0.013**	0.014	0.009	0.068
YoT 2	-2.554	**0.006**	0.864	-4.315	-0.792
YoT 3	-1.596	**0.075**	0.865	-3.359	0.168
YoT 4	-1.094	**0.157**	0.753	-2.630	0.443

Adjusted R-squared: 0.272

Overall model p-value: 0.007

Summary of results testing Prediction 2: reported confidence score (RCS) will increase with year of training (YoT) and interoceptive accuracy (IAc)

Similar to the finding in relation to prediction 1 that IAc is not positively correlated with increasing YoT, YoT does not positively predict RCS, at least not in a linear way. Intriguingly, statistical analysis does indicate that YoT and RCS are nonetheless themselves linked. RCS peaks in the first year of training and then drops significantly in Year 2 ($p = 0.015$). Confidence appears to recover between Year 2 and 4 ($p=0.048$).

RCS, was found to be positively correlated with IAc as predicted, and this relationship was independent of YoT.

These results suggest that while the relationship between IAc and RCS is not governed by YoT, training does appear to impact RCS when undertaking the Heartbeat Counting Task – with confidence initially declining before increasing to starting levels.

Testing Prediction 3: interoceptive awareness (IAw) will increase with interoceptive accuracy (IAc)

A median split of interoceptive accuracy (IAc) scores (0.674) was used to investigate whether participants considered to be 'high' or 'low' in IAc, as determined by the split, differed in their interoceptive awareness (IAw). This follows the model of analysis of Garfinkle and colleagues (2015), whose median split of IAc was slightly higher at 0.70. Garfinkle and colleagues note their median split to be in keeping with that of Tsakiris and colleagues (2011) whose median value was 0.669.

Defined by the median split, 'high' IAc scores were classified as being over 0.674 (n=18, mean = 0.820, SD = 0.917, median = 0.852, range = 0.674 - 0.937). While 'low' IAc scores were less than 0.674 (n=19, mean = 0.461, SD = 0.171, median = 0.520, range = 0.027 – 0.674).

While the average IAw of the low accuracy group was 0.094 compared to 0.143 for the high accuracy group, an independent t-test, did not quite meet statistical

significance difference between the two groups, indicating no support for the prediction (t=1.459, p= 0.077, 95 % confidence: -0.019, 0.118).

Summary of results testing Prediction 3: interoceptive awareness (IAw) will increase with interoceptive accuracy (IAc)

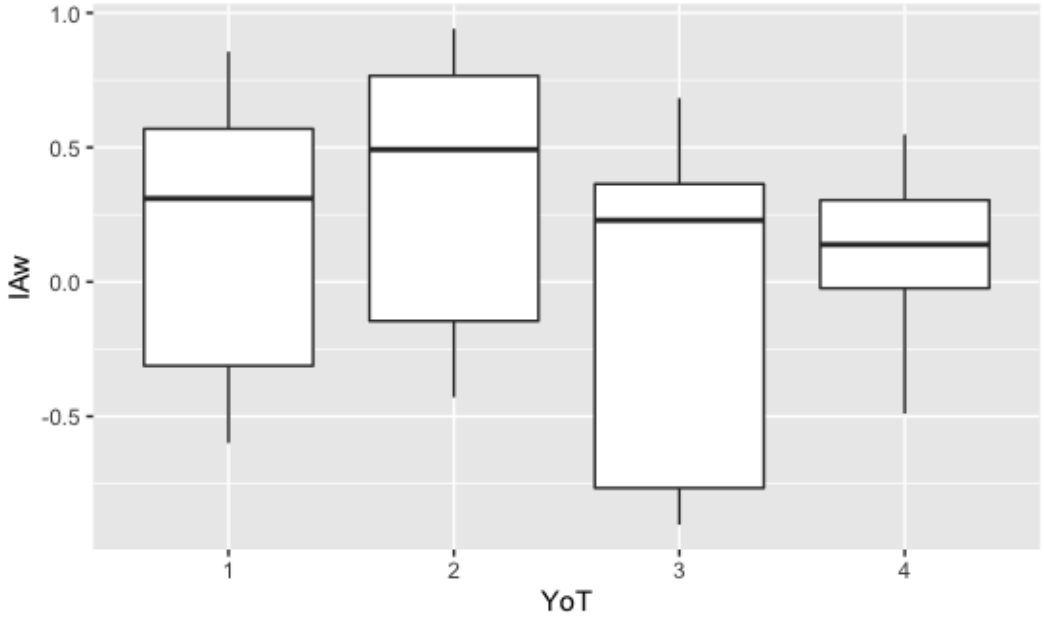
Despite results supporting Prediction 2: that interoceptive accuracy positively correlates with confidence in accuracy (RCS) and confidence being a component of interoceptive awareness, results demonstrate no statistically significant relationship between accuracy (IAc) and awareness (IAw).

Additional analysis – Interoceptive Awareness (IAw) and Year of Training (YoT)

In addition to testing prediction 3, further exploration of the relationship between interoceptive awareness and training was conducted, due to findings in relation to prediction 2 - that established significance of year of training upon reported confidence (the latter being a constituent of awareness).

Figure 13 shows that the highest median IAw is in Year 2. This is in contrast to Year 2's reported confidence (Figure 11), where the median was lowest; and interoceptive accuracy (Figures 10), where Year 2 was second lowest.

Figure 13. *Boxplot, IAw and YoT*



To establish the significance of differences in Figure 13, a Welch's two-sample t-test was undertaken (Welch's t-test incorporating a correction for unequal year group subset size). However, despite statistically significant differences between year groups in reported confidence (a component of IAw), no significant differences in awareness were found (Table 14).

Testing Prediction 4: Symptoms of Body-centred Countertransference (BCS) will increase with interoceptive awareness (IAw)

Due to the nature of the IAw measure, it was necessary to convert it into a categorical variable with the options 0 = 'not aware' or 1 = 'aware' in order to test it against BCS.

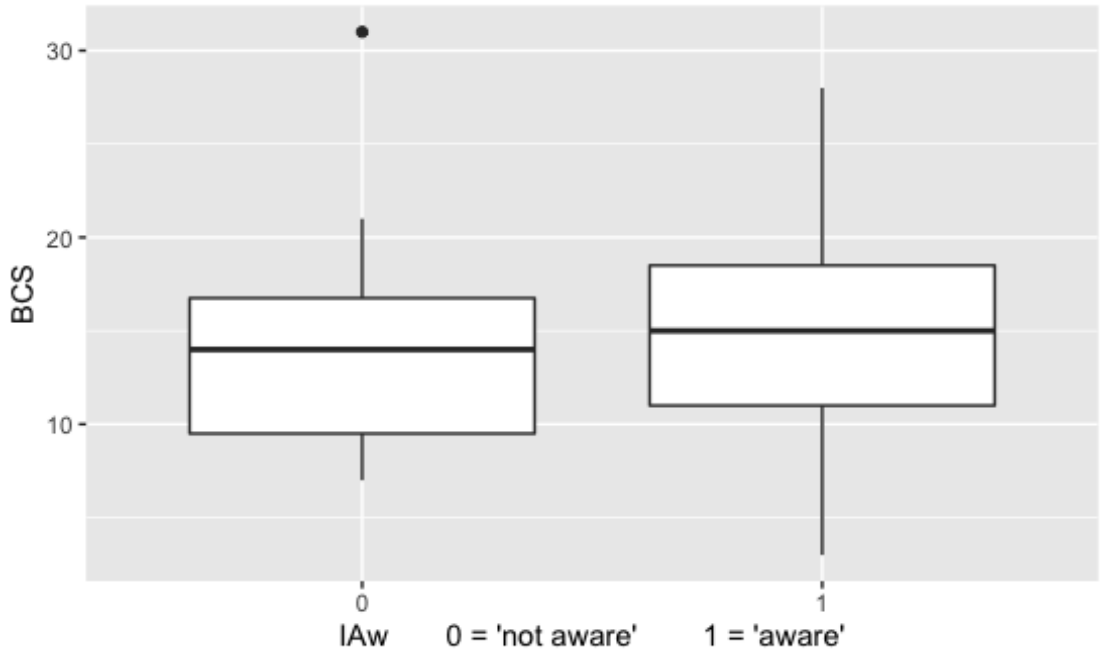
In Figures 14 and 15 data is examined with two different base values for 'awareness'. In Figure 14 'awareness' is defined as being all IAw scores above 0. For comparison, in Figure 15 a higher value for 'awareness' is defined. This was determined according by the mean interoceptive awareness (IAw) of the 'high' interoceptive accuracy sub-group, as determined by the independent t-test previously undertaken to access the relationship between awareness and accuracy (mean for 'high' IAw=0.143) (see p.83).

Figure 14 illustrates a small rise in BCS with 'awareness' not reaching statistical significance (p=0.264, one tailed) (Table 14). In Figure 15, with the benchmark for 'awareness' raised to 0.1430 the rise in BCS with 'awareness' is more marked, although statistical significance is still not quite reached (p=0.089, one tailed) (Table 15).

Figure 14. *Boxplot, BCS and IAw*

Not aware is 0 (IAw scores of 0 and below) *Aware is 1 (IAw scores above 0)*

Figure 15. *Boxplot, BCS and IAw, with raised 'awareness' baseline*



Not aware is 0 (IAw scores below 0.9) Aware is 1 (IAw scores equal to and above 0.143)

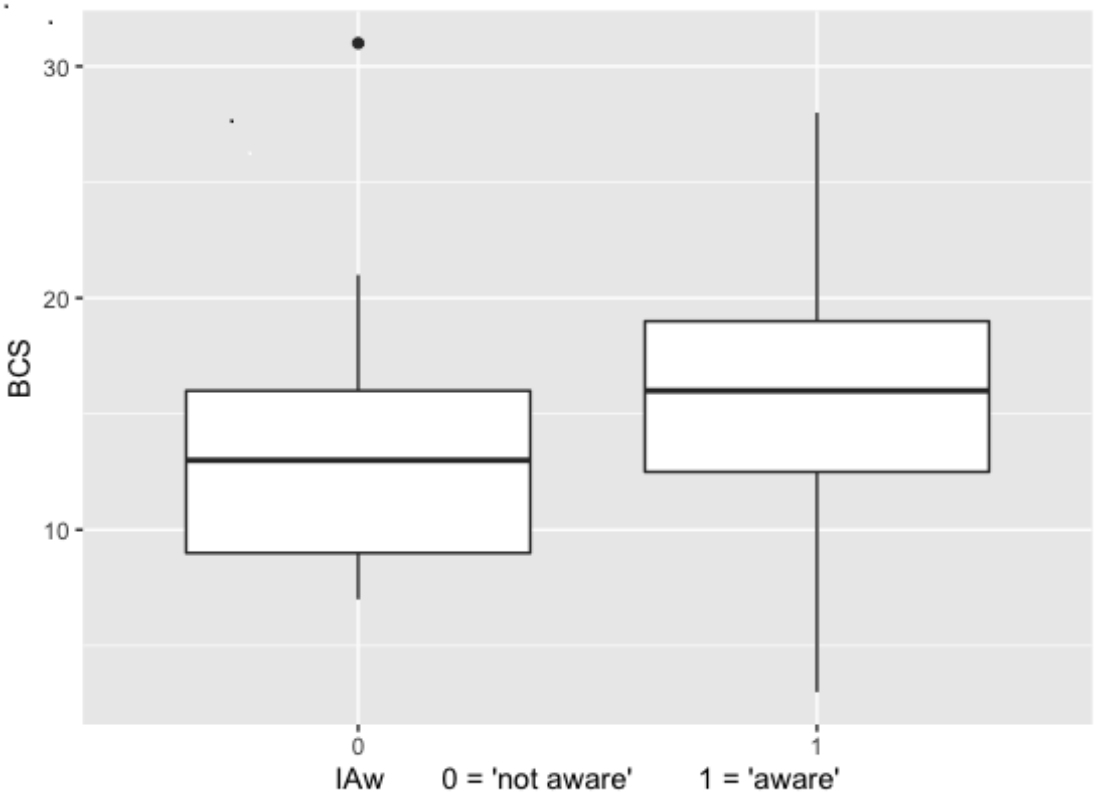


Table 15. *Wilcoxon Rank Sum testing differences in BCS between those classified 'aware' and those 'not aware'*

Comparison	**W**	**P value *(one tailed)***
'Aware' vs 'Not Aware' *Aware = above 0 vs Not Aware = 0 or below*	142.3	0.286
'Aware' vs 'Not Aware' *Aware = above 0.143 vs Not Aware = 0.09 or below*	125.5	0.089

A multiple regression assessing whether IAw predicts BCS after controlling for YoT revealed no statistical significance for IAw with baseline 'awareness' at 0.143 (**Table 16)**.

Table 16. *Multiple regression analysis, IAw is the independent variable, BCS the outcome variable with a control for YoT. The baseline for 'awareness' is defined as scores equal to or above 0.143.*

Variable	Estimate	P value	Standard error	Confidence interval at 2.5%	Confidence Interval at 97.5%
Intercept	10.405	0.000	1.921	6.493	14.317
Aware 'Yes' ***(ref. category is 'no awareness)***	1.471	0.385	1.668	1.927	4.869
Year 2 ***(ref. is Year 1)***	3.987	0.135	2.543	-1.283	9.078
Year 3 **(ref. is Year 1)**	8.469	0.002	2.543	3.288	13.649
Year 4 ***(ref. is Year 1)***	3.574	0.108	2.158	- 0.822	7.970

p-value: 0.181

Adjusted R-squared: 0.033

IAw is not seen to have statistical significance for BCS (p=0.385) after controlling for YoT. The model indicates the significance of YoT upon BCS, specifically in Year 3 (p=0.002) predicts BCS.

Summary of Prediction 4: symptoms of body-centred countertransference (BCS) will increase with interoceptive awareness (IAw)

No statistically significant relationship was observed between body-centred countertransference scores (BCS) and interoceptive awareness (IAw). However, when the baseline for 'awareness' was raised to 0.143, the p-value in the Wilcoxon Rank Sum test was seen to improve (p=0.089) compared with a baseline for 'awareness' set at 0 (p=0.57), hinting that a raised level of 'awareness' might indeed correlate with increases in BCS – indicating the need for further research.

Additional analysis: BCS and YoT

BCS and YoT are further explored below following the indication of significance of YoT as a predictor for BCS seen in Table 16.

Figure 16. illustrates an increase in BCS with YoT to Year 3, before it declines in Year 4. This is the inverse of the box-plot for IAc scores (Figure 10) and is indeed close to inverse of the box-plot for RCS (Figure 11).

Table 16. shows the results of the analysis of differences in BCS between YoT. Statistically significant differences are noted between the lowest scoring year, Year 1, and the highest, Year 3 (p=0.009). Differences between Year 3 and Year 4, where there is a decided decline in BCS, also reaches statistical significance (p = 0.033).

Figure 16. *Boxplot showing BCS by YoT*

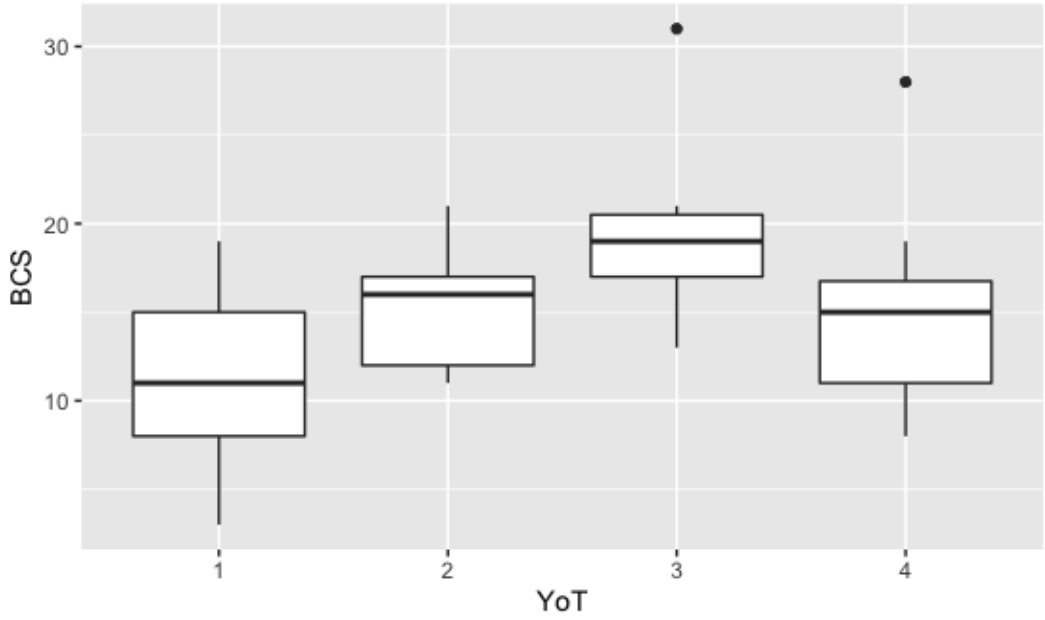


Table 17. *Wilcoxon Rank Sum testing differences in BCS across YoT*

Comparison (Group 1vs Group 2)	Group 1 TPS median	Group 2 TPS median	W	P value
Year 1 vs Year 2	11	16	17	0.136
Year 1 vs Year 3	11	19.714	6.5	**0.009**
Year 1 vs Year 4	11	14.714	41	0.173
Year 2 vs Year 3	16	19.714	11.5	0.107
Year 2 vs Year 4	16	14.714	56.5	0.599
Year 3 vs Year 4	19.714	14.714	78	**0.033**

Further exploratory regression analyses evidenced no relationship between BCS and IAc, or RCS (**Appendix D**).

Summary of Quantitative Results

Four predications were developed and tested investigating the interoceptive capacity of child psychotherapy trainees and intended to provide an initial empirical exploration for the research question: *Is there a relationship between interoception and countertransference?*

Counter to prediction 1, the interoceptive accuracy of child psychotherapy trainees was not found to increase with years of training. Nor was interoceptive accuracy positively correlated with reported confidence by year of training (prediction 2). Year of training and reported confidence were nonetheless themselves found to be linked in a non-linear way and confidence was also found to be positively correlated with accuracy when independent of training year group.

Interoceptive awareness was not found to increase with interoceptive accuracy (prediction 3). Nor were interoceptive awareness and frequency of symptoms of body-centred countertransference found to be positively correlated (predication 4). Intriguingly however, when the baseline figure for 'awareness' was raised, the p-value in the Wilcoxon Rank Sum test used to measure differences between groups (aware vs not aware) was seen to improve, indicating that a raised level of

'awareness' might indeed correlate with increases in body-centred countertransference. This would suggest a need for further research.

Additional analysis (independent of predication) revealed that statistically significant differences in the frequency of body centred countertransference existed between year groups, although once again there was not a positive correlation between years of training and symptoms experienced.

Attention is now turned to the qualitative findings of the study – intended to explore trainees' understanding and experience of countertransference.

The Qualitative Countertransference Questionnaire

Linguistic and Thematic Analyses were combined to explore responses to the *Qualitative Countertransference Questionnaire.*

Each of the three questions asked is addressed separately.

Field Note

Participants' reactions to the Countertransference Questionnaire were striking. A significant majority grimaced, and expressed consternation and anxious concern at the difficulty of the task and their capacity to answer the questions.

Yet, the apparent challenge posed in thinking about countertransference is minimally manifest as an explicit artefact within questionnaire responses. Six participants couched their answers in a somewhat defensive language of personal understanding. Examples of this included:

> *'I understand countertransference to be…'* (27)

> *'To me, a countertransference reaction is…'* (14)

And one frankly acknowledged the difficulty of the task:

> *'This can be a difficult concept to articulate but my understanding is…'* (18)

Question 1

What do you understand the psychoanalytic concept of countertransference to mean?

Theme 1: 'Feeling'

The language of 'Feeling' was central in responses to question one. Feeling was asserted as part of the very substance of countertransference, along with 'thoughts' and in one instance also 'phantasies':

> *'My thoughts, phantasies and feelings that I have in direct response (although I suppose also indirectly too) to my client/carer/family.'* (16)

Thirty-three of the thirty-seven participants overtly used the language of feeling. Those who did not refer to 'feeling' used 'response' as a synonym:

> *'Using your own in-the-moment bodily responses or emotional responses in a therapy session (or after) to inform your understanding of the patient's experience or unconscious communication'* (35)

In the example above, 'responses' can be either emotional or physical. 'Feelings' too were explicitly conceptualised with reference to this differentiation, along with 'behaviour', reminiscent of the countertransference manifestations identified by Field (1989):

> *'My feelings in response to what a patient brings in sessions. Includes bodily feelings, thoughts, the way I might respond to something said, done in the session – perhaps also something projected into me in a different way.'* (20)

'Feeling' was used as a noun in eighteen instances:

> *'The feelings evoked in me as a result of the interactions between me and my patient and/or as a result of the mood of my patient…'* (17)

And a verb in fifteen:

'I understand this to mean how I feel in relation to the way the patient relates to me…' (25)

This linguistic distinction is significant as it potentially reflects issues of agency and aetiology in countertransference: that is, the extent to which the experience is something you are subject to (at the agency of another), or active in. In the participants' responses the distinction is roughly even.

Theme 2: 'Change'

Feelings are variously described as being: a 'response', or 'reaction' to the other; as 'evoked', 'aroused', 'elicited' or 'provoked' by interpersonal contact. Scrutiny of the meaning of these recurring terms reveals different qualities which potentially add depth to an understanding of what participants communicated (**Appendix G,** Table 20. for definitions and the number using each).

Countertransference was most commonly understood as an experience generated in 'response' or 'reaction' to the other, terms which may be used synonymously - referring to the effect/impact that one thing has upon another.

The less frequently used term 'evoke' suggests that the effect is something 'called forth' or into being; indicating that something is being brought into life. This links to the idea of 'calling up', which might include things historic. In relation to

countertransference, 'evocation' can be directly understood as the calling to life of 'feeling' in the therapist. It is also potentially a latent reference to the recalling to life of the therapist's psychic history, richly redolent of experience and feeling. The term 'elicit' may be similarly understood, referring to the notion that something is drawn forth (by one, from the other):

> *'The feelings you have that are elicited in a live session with a patient, in response to their unconscious projections and communications and how they affect your unconscious.'* (22)

Here, the participant refers to the therapy session as 'live' before continuing to explain their conception of the dynamic interplay between the unconscious of the therapist and patient.

The terms 'arouse' and 'provoke' carry dynamic, lively qualities not dissimilar to 'calling up' or 'drawing forth'. However, there are additional nuances here, those of 'stirring up' and 'inciting', suggesting the state of one is unsettled and activated by the other; in this sense brought to life. There is something perhaps more disruptive:

> *'Aspects of how I feel which have been provoked in me by the patient/family/session material i.e. an unconscious communication.'* (4)

Each of the terms discussed indicates an experience of something changing; it is for this reason that change is the second theme[11]. In describing their understanding of what countertransference means, participants all testified to a change in state (be that feeling - physical and/or emotional, thought or activity) within themselves, which was identified as stemming from contact with another.

Some participants developed the idea of how change might have come about, as in the example above, where it is conceived to be the result of 'an unconscious communication'. This question however, as to the interaction between therapist and patient through which countertransference comes about is considered in our next theme.

Theme 3: Self and Other

Of the thirty-seven participant responses, linguistic analysis reveals thirty-three to be constructed with the self as subject, placed first in the sentence and the patient/client/child (or related phenomena e.g. carer/family/network) as object, placed second. This structure is demonstrated in the example below:

---

11 The concept 'change' can be defined as follows: 'To substitute one thing for (another)…' [and] '…To exchange (things) with another person, by giving one thing and receiving something of the same kind in return; (of two people or parties) to give and receive reciprocally; *spec.* to exchange (looks, words, etc.)' (OED, 2019).

> *'The feelings evoked in me as a result of the interactions between me and the patient…'* (17)

A greater distance characterises the four responses which did not adhere to this format. In the example below the participant gives an answer referring to 'the therapist' as if removed from themselves. Countertransference is understood as:

> *'Emotions and physical sensations felt by the therapist possibly indicating a correlating state of mind in the patient.'* (41)

Another makes no explicit reference to therapist or patient. Rather, a more universal application of countertransference is suggested:

> *'Feelings which are provoked by the way that someone relates to another, in terms of a particular role that the first person casts the second person into.'* (33)

It is curious that while this respondent uses the idea of 'roles' in explication of the concept of countertransference the explicit roles of therapist and patient are absent. This is by far the most detached and distant response made, however 'feelings' remain paramount.

The dominant linguistic structure of responses is arguably reflective of countertransference itself. That is, of a change in state, first perceived, or

experienced by the self and then considered in relation to the other. The linking of feeling states or thoughts to the patient (other) comes second, and this is reflected in the sentence structure.

The feeling states of countertransference are conceived as being variously: 'unconscious communications' (35), 'unconscious projections' (36) and 'emotional communications' (25) from patients; as well as, 'clues to their [the patient's] experiences' (49) and 'their [the patient's] internal world' (23) or 'mind'. Twenty-six of the participants responded with an apparent confidence in the idea that their countertransference feelings were causally related to their patients. For example:

> *'My own feelings in response to what might be happening in the patient.'* (21)
>
> *'It's what I feel in response to what my patient was feeling during the session.'* (38)

Eleven described more tentatively a potential link between their feelings and their patients:

> *'Feelings/thoughts that may pop into one's mind or body that seem to be evoked within you when with a patient – that may belong to the patient…'* (7)
>
> *'How what I feel in the presence of the patient might help me to understand what is going on for the patient…'* (37)

The idea that countertransference is something which entails effort, requiring something active on the part of the therapist, is also represented in participant responses and their attempts to distinguish feelings of self and other:

> *'…what this tells me about the patient if I think about it…'* (10)

> *'Using my own feelings and emotions to try to understand the mind/experience of a patient.* '(13)

> *'…when you feel or sense something from the patient that needs to be thought through – is this mine or is it coming from the patient?*' (18)

This example acknowledges explicitly the challenge that is posed in attempting to distinguish the aetiology of feeling states.

Perhaps surprisingly, only one participant acknowledges directly that their own psychic history might be part of the substance of countertransference:

> *'I understand this to be my response to transference material held within my life and relational experience that could be triggered or resonate with emotional and projected material from the patient.'* (41)

Question 2

Please give a brief description of an experience of countertransference from your practice in Child and Adolescent Psychotherapy.

Theme 1: Feeling: The Situation, the Self and the Other

A remarkable fifty discrete feeling states, incorporating experiences both emotional and physical, were discerned from the descriptive reports of countertransference provided by participants (**Appendix G, Table 21**). Of these, sadness was the most frequently evidenced (five individual participant reports); followed by sleepiness/ tiredness (four); anger, fear and panic (each reported by three different participants). Anxiety, being cut-off, frozen, overwhelmed, tearful and uncomfortable were all reported by two participants respectively.

Seven participants spoke of how countertransference had left them wanting to act in response to their patient. Examples included: feeling compelled to speak on behalf of an awkward patient; wanting to strangle a dismissive patient; and wanting to act protectively towards a patient.

The diversity of feelings participants described in themselves was not paralleled, however, in observations about the feelings states of their patients. Broadly, three categories of response were identified:

- Participants who described only the types of 'feelings' that they experienced:

> *'For example, I can feel small, inadequate, can struggle to verbalise thoughts and ideas. It can feel painful, which sometimes comes with a strong physical sensation in my chest. Sometimes I feel overwhelmingly tired, I yawn and struggle to keep my eyes open – can be very sudden. I sometimes develop a headache.'* (12)

Six respondents belonged to this category.

- Participants who contextualised feelings that they considered to be an experience of countertransference with information about the specific patient to whom they felt the feelings pertained:

> *'Strong feelings of anger and anxiety about being trapped in a room with my client. She was a particularly aggressive adolescent who also had psychotic fantasies about a world in which she only occupied, although could be accompanied by other 'characters' who held her captive.'* (16)

Twenty-two respondents were in this category, by far the largest. Despite some contextualising information being given, sixteen accounts did not refer to the patient's feelings.

- Participants whose descriptions sought to develop an interpretative or reflective link between the feelings they experienced and the patient that they described:

'A boy of 7 who I felt very scared of - a boy others had felt scared of. I came to understand how scared he was through understanding how I felt when with him.' (8)

This category included nine responses. Of these six made some reference to the patient's feeling, suggesting a link between reflective or interpretive responses and acknowledgement of the feeling state of the other.

Theme 2: Disconnection

Across the considerable range of feeling states reported by participants, disconnection emerged as a significant theme. This theme was evident again in three distinct ways:

First, in examples where the participant experienced disconnection as an important factor of their interaction with the patient. In the example below it is the central, organising feeling during the interaction and could be described in terms of an apparent identification between patient and therapist: as if the disconnection has had a contagious effect:

'An adolescent who is quite disconnected from her feelings – when she talks about what I think of as painful experiences (rationally) but I have thoughts of it being silly, or being dismissive of it – feeling disconnected with her

> *narrative, and then finding it very hard to remember details of the session when I have to write it up – disconnection from her.'* (7)

Second, in examples where unexpected, apparently incongruent feelings experienced by the therapist were understood as indicative of the patient's disconnection from their own unconscious feelings. Here, patients' disconnected or unacknowledged feelings are considered to have be unconsciously communicated to the therapist through countertransference.

Below, the therapist interprets their countertransference experience as indicative of the patient's disconnection from a part of themselves, which the therapist by contrast feels they are in contact with:

> *'Recently I was in a session with an adolescent girl who I have been seeing once weekly for a few months. She seems to be struggling to talk about her difficulties in the room with me, although I know that she struggles with very low mood and suicidal thoughts and has in the past been actively suicidal. At the end of a session with her, before a break, although she seemed perfectly calm and content and she wasn't talking about anything particularly moving I was suddenly overwhelmed by feelings of sadness and despair to the point that I found myself feeling tearful. I understood this to be her feelings of sadness and despair in the face of loss because of the upcoming break.* (27)

Finally, a sense of disconnection exists for the reader in the way that many of the respondents describe their experiences of countertransference without, or with limited, reference to context: to their patient's feelings or the reflective processes entailed in identifying countertransference. The following example disturbs, but gives minimal context through which to understand:

> *'Feeling shocked and sick to my stomach when observing the terrifying and cruel play of a 5-year-old girl – little children being gagged, put in the oven to burn and strapped to the floor.'* (23)

Being *'cut-off'* or *'shut-out'*, was something participants not only felt but literally experienced at times. In the example below, the respondent describes how:

> *'With my adolescent intensive [a patient seen three times per week] I have recently been experiencing as though I'm being killed and cut off – 'my head wants to roll off'.'* (1)

Where this account hovers between an "as if" feeling and a more concrete one, this next respondent describes a more visceral response:

> *'Feeling confused and panicky (including raised heart beat and muscle tension) out of proportion to actual risk/danger when a child shut himself in a cupboard in another room. This suggested what the child was experiencing.'* (4)

In both examples, the therapist makes an interpretation which without further detail in relation to the patient (e.g. the therapist's observation of their emotional state); the specific circumstances; or, the therapist's process in coming to understand it, is difficult to follow.

Theme 3: Immediacy of Connection

Countertransference was also, by contrast, described in terms of immediate connectedness and contact with patients: evident in reports of direct emotional and physical responses generated in the therapist by a patient.

Some examples had the quality of empathy related to the circumstance of the patient:

> *'Feeling of loss around a patient whose grandmother has just died of cancer.'* (32)

One participant reported a strikingly immediate physical identification with the experience described by a patient:

> *'I had an experience of a child telling me she was held and pushed down by the neck – I found myself feeling I had a similar experience and began coughing unexpectedly.'* (42)

Whilst others reported intense, immediate reactions to the activity of a patient:

> *'In a session with an infant, the child was very terrorising and dominating. I felt a high alert body state, with muscle rigidity - frozen to my seat and unable to speak or move out of fear. '*(14)

The disturbing potency of countertransference is articulated by a number of participants:

> *'My intensive patient is a 7-year-old boy who is sexually invasive and aggressive. He seems to cast me into a role of his sexual partner i.e. a paedophile. My countertransference from this is one of horror, fear, frozenness, panic and health and safety reactiveness.'* (33)

While the participant does not specify what 'health and safety reactiveness' means, this phrase contributes to a communication about the sense of urgency and vulnerability, experienced by the therapist.

A participant who describes working with a looked-after child who had suffered significant deprivation in her early years, reports the direct physical impact contact with this child has:

> *'…she rarely talks to me and often when I see her I feel very tired and more recently extremely hungry, even when I make sure I eat before seeing her'*. (44)

Implicit within this example is the participant's acknowledgement that they have considered the matrix for their 'hunger' as belonging to their own physical state, before coming to understand it as a reaction to the patient. This suggests a process in their interpretative understanding.

One participant explicitly acknowledges their efforts to consider the impact of their own emotions upon the therapeutic encounter:

> *'I feel it can take time, sometimes, with some patients - particularly cut-off (highly defended patients) - to find a 'wavelength' to work with them; when found/attuned I can feel a range of emotions. I believe I try to be mindful of being open-minded to countertransference and to wonder whether I also bring my own emotions to the room.'* (2)

Intriguingly, this participant is also suggesting that there is a broader, perhaps longer-term process involved in the development of countertransference feelings. One other participant alludes to this idea of a process:

'As a patient has begun to let down some defences to therapy, I have begun to feel aspects of her sadness in my stomach. It has felt like sadness's mixed with regret.' (10)

Question 3

Please summarise what the importance of countertransference is to you as a Child and Adolescent Psychotherapy trainee.

Theme 1: A Tool to '…Go Beyond Words'

The overt importance of countertransference was asserted by the majority of participants (22 individuals). For three participants, countertransference was not just important but considered to be definitive as in the examples below:

'It's the central aspect of my training, as I am able to have a real experience of what it might be like for the patient…' (21)

'Without it one could not work as a psychotherapist…' (26)

'Sometimes it feels like the only way of having some understanding of what a patient is experiencing. It feels like our failproof reference point – totally critical' (34)

In explaining this, participants drew on links between experience of countertransference and the therapist's capacity for understanding. Countertransference was conceived as enabling the therapist to '…go beyond words' (22): to engage in a profound, and potentially communicative, experience of being with the patient. The idea of 'going beyond words' was variously conceptualised through the language of: unconscious or emotional communication; unconscious dynamics or processes; and internal world or internal experience.

> *'A form of communication that occurs internally that gives an insight to the patient's internal world, their defences etc, which then can be understood, worked with, contained etc.'* (7)

Those who did not explicitly articulate a 'value' for countertransference in their responses were nonetheless consistent with those who did in articulating the idea of countertransference as facilitative of understanding (n=14). These responses described countertransference in pragmatic terms, where value is arguably implicit. Most commonly countertransference was conceived as 'a tool' (five instances), 'a help' (four instances) but also 'a method' and 'an indicator'.

> *'A method used to receive and understand unconscious communications from patients. Things that can't be or wouldn't be communicated verbally.'* (10)

> *'As a tool to explore/understand/reflect/form hypotheses of the experience/the difficulties/the quality of the relationships of the patient or the people around them.'* (24)

The conception of countertransference as 'a tool' was common to those who overtly expressed the value they placed on countertransference too. It also occurs in the solitary response which stands out as deviating from the majority view of the centrality of countertransference:

> *'It is important but it is not my only 'tool' (?). I try to gather and understand material and my patient in a number of ways! What they tell me (language), choices over what they tell (narrative), for example.'* (2)

Theme 2: Ambivalence, Countertransference as *'…Opaque and Disturbing…'* (36)

Despite asserting the importance of countertransference for developing a depth of understanding of their patients, nearly a third of study participants (n=11) also articulated ambivalence and uncertainty about it. Countertransference was seen as being: 'quite elusive' (1); potentially '…easy to disregard' (4); '… very difficult to access sometimes' (13) and difficult to trust (8).

One participant explained their ambivalence thus:

'– at times it can feel like an incredibly useful tool and at others an opaque and disturbing experience.' (36)

This example reflects the extent to which countertransference seems to necessarily involve an unsettling of the therapist's feeling state, which might be challenging to identify and make sense of.

Difficulties in recognising, interpreting and trusting countertransference experiences were linked by four participants directly to issues of differentiating between the patient and the self.

> *'Gives weight to communication between client and me – where there are no words (or difficult to find), countertransference might help me name them. Helps me understand how they are feeling (at times – if not confused with my own feelings).'* (16)

One participant linked the work of differentiation to their own personal psychoanalysis (a requirement for all trainees).

> *'– I am aware it's hard to separate from my own feelings and that's why I believe analysis is so important.'* (21)

Another links the difficulties that might be experienced in differentiating between the self and a patient in an experience of countertransference with learning a skill:

> *'It is a key way to understand the state of mind of patients and the way they view the world. However, it is a difficult skill to learn, particularly in relation to differentiating between what is a communication from the person you are with and what might be a feeling directly related to you and have nothing to do with the other person!'* (23)

Theme three: Development

The idea that countertransference is a 'tool', 'skill' or 'method' to be learnt and developed over time, and indeed as part of training, is reflected by participants as in the following example:

> *'My tool to understanding unconscious processes in my clients (or will be once I have learned to use it well)'* (19)

Clinical development and the effort to understand countertransference experiences were also linked by a participant to development through personal analysis:

> *'… I think it [countertransference] allows me to develop clinically - in trying to understand certain countertransference experiences in my own analysis – hopefully allowing me to understanding my own resistances, and in this way be more open to my patients.'* (48)

Development is also understood at the level of individual relationship: between the therapist and patient. Relationship specific experiences and understandings of countertransference are conceived as developing over time. Below, countertransference is valued as an ability to recognise:

> *'… what I'm feeling and why, so as to distinguish how the patient might be feeling, to enable greater understanding – this is something that develops over time.'* (18)

> *'…Having a developing countertransference allows insight into experiences of a child that can be helpfully understood through feeling.'* (43)

Depth of understanding is facilitated by countertransference, but this takes time to develop.

Summary of Qualitative Findings

In considering the meaning of countertransference trainees prioritised 'feeling'- inclusive of emotion and physical sensations - as being both central to the experience of countertransference and indeed to constitute its substance. Feeling was understood to be in reaction to the patient/other, involving a change of state brought about by contact. While some trainees made reference to this change as resulting from unconscious communication, countertransference – as something 'felt' - appeared to be located primarily in the conscious experience of the trainee, with limited reference made to the unconscious impact, or the potential complexity of how unconscious communications from the patient might mate with the trainee's own psychic history. Trainees did nonetheless acknowledge the difficulty of attribution of feeling and distinguishing between self and other.

Striking in trainees' practice-based descriptions of countertransference is the diversity of feeling states they reported themselves as experiencing. There was markedly less attempt made by trainees to describe what they understood to be the felt experience of their patients, however, with the majority providing contextual information about the patient they were with but not developing any more detailed thoughts in relation to understanding their experience, leaving the reader with a sense of disconnection. Roughly a quarter of trainees broke from this trend, making some attempt to develop an interpretative or reflective link between their own feelings and the patient that they described.

In considering the value of countertransference, trainees were near unanimous in asserting countertransference to be a central tool in their work. In the single response which expressed a more reserved perspective, countertransference was still identified as a tool.

Despite describing its value, trainees acknowledged countertransference to be something potentially difficult and necessarily disturbing. They identified the challenge of recognising, interpreting and trusting countertransference experience and in differentiating between what might pertain to the patient and what to the self. An appreciation that capacity to use the tool of countertransference might be developed over time is present for trainees.

Discussion

The Theoretical Review has identified a growing corpus of evidence exploring the centrality of *interoception* in the study of emotion and awareness of self (Pace-Schott et al. 2018). It has testified to the significance and complexity of *countertransference* as a phenomenon considered to potentially link experiences occurring within the self: feelings, thoughts and fantasies and activity (Stone, 2006); with the experiences of another. Research literature pertaining to *embodied countertransference* points to experiences of countertransference within the

physical body (Vulcan, 2016). This provides a starting point for exploring the relationship between interoception and countertransference.

Experience of emotion is arguably pivotal to *interoception,* c*ountertransference* phenomena and child psychotherapy training. As such, this study has sought to explore empirically potential links between *interoception* and *countertransference,* with particular attention to *embodied countertransference* in a sample of child psychotherapy trainees. As such it represents an initial attempt to address the research question: *Is there a relationship between countertransference and interoception?*

A psychoanalytic understanding of countertransference, giving credence as it does to the idea that unconscious processes play a significant part in countertransference (emphasised to a greater or lesser extent depending on the school of thought), presents inherent difficulties for the design and execution of an empirical study. There is no broadly accepted, objective measure for countertransference, nor does it currently seem likely that there could be one – the nature of the phenomenon being as it is so fundamentally subjective; and, potentially in large part beyond conscious thought. Interoception, by contrast, is an area of neuroscientific investigation with well-established methods of empiric observation, measurement and scrutiny. Bridging the gap between these two phenomena and the different

realms, or categories of thought, in which they might be held to exist has been one of the major challenges of this study.

Arguably, the dualistic distinction traditionally drawn between objective and subjective within scientific investigation is a mirror of that between 'body and mind' -united by a legacy in Cartesian philosophy, This study has sought to address the tension between what may be measured 'objectively' and the 'subjective' understanding and experience of individuals by incorporating both quantitative and qualitative research methods within its design; and, indeed through the combination of theoretical and empirical analysis. French (1958) argues that too sharp a distinction should not be drawn between art and science – identifying that scientific investigation requires imagination and intuition in its generation. Insofar as an act of imagination is always the matrix of scientific enquiry, no matter how objectively empirical investigation is conceived and executed, is arguably always and necessarily also subjective (Moore, 2012).

A number of steps were necessary in trying to combine an empirical measure for interoception with countertransference. Firstly, an exploration of child psychotherapy trainees' inherent interoceptive capacity (accuracy, confidence in accuracy and awareness) was undertaken. Scrutiny of differences in interoception between year groups was justified on the grounds that training demands attention to emotional experience; and as such, increases in emotional awareness might be

anticipated during the course of training. Increased emotional awareness would potentially correlate with improved interoceptive ability, this having been previously attested in the research literature.

Results demonstrate that approximately a third of trainees can be classified as 'highly' interoceptively accurate when compared to the benchmark set by Kandasamy and colleagues' (2016) 'highly accurate' sample of London financial traders. The average accuracy of Kandasamy and colleagues' sample (n=18) was 78.2%, significantly above that of their control group, 66.9% (n=48). Results of the current study show that although the sample of trainees' (n=37) mean IAc was 63.6%, below the traders and Kandasamy and colleagues' control group, the lack of normality in distribution of IAc (Figure 3) indicates use of average by median rather than mean. Median IAc for the sample was 67.4%, a fraction above Kandasamy and colleagues' (2016) control. 51.3% of the trainees had IAc scores above 66.9% (Table 3) and 32.4% (n=12) had IAc of above 78.2%. Roughly a third of participating trainees could accordingly be considered to have 'high' accuracy as defined by Kandasamy and colleagues research (2016).

Furthermore, when compared to Kandasamy and colleagues' control group of *'…high-functioning (mostly graduates or post-graduates) non-trader males'* (2016: p.2), just over half of the trainees demonstrated interoceptive accuracy scores equal to or above the control score. This suggests that child psychotherapy trainees tend

towards above average levels of interoceptive accuracy as previously documented in the research literature (ibid).

Table 22. *Classifications of % IAc following Kandasamy et al. (2016)*

Classification of % IAc	% of sample (n=37)	Mean IAc of subset (SD)	Median IAc of subset (Range)
High 67 % and above	51.3 (n=19)	81.2 (9.46)	85.1 (67.5 – 93.6)
Average 40 – 66.9 %	32.3 (n=12)	55.07 (0.62)	55.8 (42.9 – 63.3)
Low Below 40%	16.2 (n=6)	24.53 (11.04)	27.3 (2.6 - 32.2)

See Appendix F. tables 23, 24 & 25, for an additional detailing of the sample's IAc scores and classifications.

Kandasamy and colleagues (2016) found a positive correlation between years of experience trading in the financial markets and increasing interoceptive accuracy. No such positive correlation was found between years of child psychotherapy training and interoception. It is worth considering the potential difference in nature between years of training in child psychotherapy and years of professional activity in trading by those considered competent. Arguably a closer comparison might have

been in a sample of qualified psychotherapists. This would not however have addressed the potential issue posed by comparing two very different professional groups, and in the case of the traders one in which 'success' is indeed a determinate of survival.

Existing research is contradictory as to whether interoceptive accuracy can be improved by 'training': experienced meditators were found not to differ in their accuracy on heartbeat detection tasks (Khalsa et al. 2008); while an eight-week body-awareness based mindfulness intervention was demonstrated to improve interoceptive accuracy scores (Fischer et al. 2017). It may be that there are specific types of training that can improve the ability to detect heartbeats.

This study sought to link the focus on emotional awareness in child psychotherapy training; and, an in fact unverified assumption that training improves emotional awareness, founded upon my direct experience of the training, but not evidenced in existing literature – highlighting the need for research into the impact of child psychotherapy training in its own right.

The need for further research into the impact of child psychotherapy training upon those who undertake it is further indicated by the statistically significant differences in reported confidence (when undertaking the heartbeat counting task) found to exist between year groups. Confidence plummeted from Year 1 to 2 ($p = 0.015$) and

recovered between Year 2 and 4 ($p = 0.048$). This non-linear relationship between confidence and year of training is not dissimilar to the relationship hinted at (but not meeting statistical significance) between interoceptive accuracy and years of training. Together, these results suggest training has an initially disruptive impact on these dimensions of interoception. Further research into trainees' confidence more broadly would be necessary to determine whether this intriguing finding represents a phenomenon related to trainees' learning trajectory and is reflective of trainings impact.

In contrast to the findings of Kandasamy and colleagues (2016), reported confidence scores amongst trainees were found to be positively correlated with interoceptive accuracy ($p = 0.014$, $n=36$). This is suggestive again of the importance of confidence in this sample group and perhaps further underlining the issue of comparison between a sample of trainees in one profession and those qualified and experienced in another.

While various studies in the literature treat interoceptive accuracy and reported confidence (as a measure of interoceptive sensibility) separately, focusing on individuals' average interoceptive accuracy scores (e.g. Pollatos et al. 2007; Dunn et

al. 2010), Garfinkle and colleagues (2015) contend that a metacognitive measure of *interoceptive awareness*[12] represents a more meaningful line of investigation.

Contrary to what was predicted, that interoceptive awareness would increase with years of training, and unlike the finding of Garfinkle and colleagues' (2015) research study, *interoceptive awareness* was not found to be driven by interoceptive accuracy, even within the sample's 'high' accuracy subgroup – high accuracy trainees showed no difference in awareness to those with low accuracy. This may be a feature of the relatively small size of the sample; however, Garfinkle and colleagues (2016) indicate that metacognitive measures of interoception are likely to require larger samples to determine the relationships between individual facets of interoception.

Egan and Carr's Body Centred Countertransference Scale (2005) was then utilised in an attempt to provide 'objective' measurement of countertransference symptoms which might be tested against interoceptive awareness.

[12] *Interoceptive awareness* is constructed of the correlation of an individual's *interoceptive accuracy* and *reported confidence* across repeated trials of heartbeat counting and detection tasks.

It was predicted that interoceptive awareness and experiences of body-centred countertransference would be positively correlated. While no statistically significant relationship was found to support this prediction, a trend for body-centred countertransference scores to increase when the baseline for awareness was elevated, suggested that higher levels of interoceptive awareness might indeed be linked to increased reporting of body-centred countertransference symptoms. Once again further research would be necessary to confirm this, including greater consideration of the baseline score a person must get before they can be meaningfully considered to be interoceptively 'aware'.

Intriguingly, results also demonstrate a relationship between participants' year of training and the frequency of reported body-centred countertransference. Symptoms were lowest in Year 1, rose significantly in Year 3 ($p=0.01$) and then declined significantly in Year 4 ($p=0.03$). Anecdotal evidence, arising from my direct experience of the training, would suggest that Year 3 trainees are likely to be at the height of their clinical caseload, well established within their clinic settings but not yet engaged in the process of ending the training, which is the focus of Year 4. This cannot be verified from the data collected, however. It is known that the Year 1 group had not had a full six months of clinical placement at the time the research was undertaken and as such were likely to have had more limited opportunities to experience body-centred countertransference.

Although the study does not provide a definitive link between body-centred countertransference and interoception, data from the Egan and Carr Body-centred Countertransference Scale does constitute evidence for the significant occurrence of symptoms amongst child psychotherapy trainees, all trainees report experiencing some form of body-centred countertransference. This is very striking and suggests that bodily reactions to patients are common.

In addition to body-centred countertransference appearing to be a commonly experienced phenomenon among trainees, evidence from the Qualitative Countertransference Questionnaire suggests that countertransference more generally is understood by almost all of the sample to be a vital 'tool' in the work of child psychotherapy, albeit one which is potentially difficult to master. It is noteworthy that a marked sameness can be identified in responses to the questionnaire, evident not least in the fact that only one response actually deviates from the view that countertransference is a central component of practice.

This high value placed upon countertransference is consistent with the view propounded by Heimann (1950); and the subsequent Kleinian and Post-Kleinian Psychoanalytic tradition, as articulated by Joseph (1985), which arguably form a significant part the theoretical basis for the Tavistock training. Perhaps within the sample there is limited capacity for 'heresy' such as might be presented in a more sceptical, challenging or alternate view of countertransference and its value?

Arguably, this might be linked to trainees' confidence – in their own capacity to think, doubt, challenge – and this possibility provides further justification for research into the broader impact of training. Future research exploring the views of qualified child psychotherapists about the value of countertransference would also present an opportunity to explore this issue.

The difficulties, as well as the value, potentially presented by countertransference are articulated by the sample. Difficulties are particularly noted in relation to the attribution and interpretation of countertransference experiences. These issues, so profoundly evident in the Theoretical Review, are thus evidenced in the Qualitative Countertransference Questionnaire. Arguably, they are present both in what participants say explicitly about the experience of countertransference and its use within practice; and implicitly for the reader in the difficulty that many of the answers present in relation to how interpretations have come to be made.

Limitations

Methodological limitations are recognised in the relatively small size of the study sample, and specifically the small and unequal size of year group subsets. Although where possible corrections were made, unequal sample subset sizes across year group categories in the multiple regression analyses compounds the issue of low statistical power, created by a low overall sample size. It is of note, however, that Kandasamy and colleagues' sample of traders (n=18) was considerably smaller than

the sample of trainees here, and that subgroup sizes identified in relation to years of experience of trading are not specified.

Year 4 trainees represent by far the largest subgroup. This is likely an artefact of my being a Year 4 trainee and thus a limitation in the study's recruitment process. While the presence of the research assistant mitigates for the potential of bias resulting from familiarity between myself and study participants in administration of the Heartbeat Counting Task, it cannot rule it out completely. Familiarity is significant in so far as interoceptive accuracy has been linked to anxiety levels of which are potentially impacted by familiarity with me. Inclusion of a measure of anxiety would potentially have added rigour to the research but was felt to be too intrusive in light of my links to sample population through the training.

A further limitation of the study design is the absence of a control group (measuring the interoceptive capacity of non-child psychotherapy trainees) alongside the sample. This significantly limits the analysis of results and specifically the extent to which statements can be made in relation to trainees' interoceptive capacities. Comparison is made with Kandasamy and colleagues' 'traders' (2016), as the only other specific professional group whose interoceptive accuracy and reported confidence have been previously been explored; and therefore, with the control group of this study, against whom the traders' interoceptive abilities are measured. There are both methodological and conceptual difficulties with this comparison.

Methodologically, for instance, significant differences exist between the sample of child psychotherapy trainees recruited and participants in Kandasamy and colleagues' research (2016). Of particular note is the gender of participants. Kandasamy and colleagues' research involved only male participants, whereas in the current study the majority of participants were female. Kandasamy and colleagues' control group were reportedly matched to their sample of traders by age. No details of ages are given, however, making it impossible to ascertain the extent to which this other significant demographic variable is comparable between the two studies. The number of traders in Kandasamy and colleagues' study were significantly fewer in number than those in the control group (traders n=18 vs control n=48); no explanation is given for this.

Conceptually, the question has already been raised in the course of this discussion, as to what extent it is justifiable to compare trainees in one profession with those considered competent in another. Although Kandasamy and colleagues' (2016) population were not 'trainees', distinctions between levels of experience, identified by years of trading, did represent part of the study's analysis. A direct comparison cannot necessarily be drawn, however. Kandasamy and colleagues (2016) showed a positive correlation between experience and accuracy, however, links between 'survival' within the profession, 'profit' amongst the traders and interoceptive accuracy suggest that this does not provide a straightforward comparison with increased years of training in child psychotherapy. For, as Kandasamy and

colleagues (2016) speculate, a survival of the fittest (i.e. most profitable) mentality within the high-stakes financial markets potentially 'selects' for interoceptive accuracy in a manner unlikely to be replicated in child psychotherapy.

In terms of comparing potential interoceptive development across year groups it is also significant to note that the current study is cross-sectional in design. Arguably, longitudinal data would more accurately reflect changes in interoceptive accuracy and/or awareness over the course of training, particularly given the relatively small size of the sample when divided into year group subsets.

With hindsight, the limited demographic information collected from study participants hinders the interrogation to which data can be subjected. For example, information pertaining to caseload and previous experience within therapeutic settings could have facilitated a greater depth of analysis. The approach taken was partly motivated by my position as a fellow trainee, but also on the grounds that candidates should in principle be asked for the minimum necessary personal information.

Analysis of the Body-centred Countertransference Questionnaire revealed 3 missing data values, pertaining to 3 separate individuals. Values were imputed in order to give a body-centred countertransference score for these participants. This approach

is open to methodological criticism and potentially represents a weakness within the study's findings.

In relation to the collection of qualitative data on the Countertransference Questionnaire, analysis of responses highlights the potential limitations of the questionnaire as a method of data collection. It was repeatedly observed that participant answers lacked detail, particularly in relation to the context of the clinical material used in examples, which might have been provided had an alternative method of data collection been employed, for example a more in-depth participant interview.

Strengths

The principle strength of this study lies in the imagination, ambition and execution of a piece of novel child psychotherapy research which seeks to integrate theory and empirical investigation, affective neuroscience and psychoanalysis.

No previous research studies were identified as having explored countertransference, with particular attention to embodied countertransference, and interoception in a sample of child psychotherapy trainees, or indeed in psychotherapists or mental health clinicians at all. Furthermore, although the study sample remains relatively small in comparison to some interoceptive studies (Garfinkle et al. 2015), it is significantly larger (n=37) than the sample of traders

included within Kandasamy and colleagues' (2016) study (n=18). The sample recruited constitutes half of the whole population of child psychotherapy trainees studying at the Tavistock in the year 2018/19 and is representative of the population as a whole, by gender.

The current study has implications for further research in relation to child psychotherapy training – in so far as it has identified the need to explore the emotional impact of this undertaking. Furthermore, it raises potentially intriguing questions about the homogeneity of thinking about countertransference amongst the training body, and the extent to which trainees were able to raise challenging questions and voice doubt.

Conclusion

The Theoretical Review clearly indicates potential links between the emotion-related phenomena of interoception and of countertransference, suggesting that the former, as well as the latter, may be regarded as of great importance to child psychotherapy. Despite this, no existing studies have investigated their relationship. This exploratory study is a first attempt to address this gap in the literature. Contrary to what was hypothesised, no statistical evidence was found to support definitive links between interoception and countertransference, although a number of intriguing relationships are hinted at, warranting further research.

The interoceptive accuracy of child psychotherapy trainees undertaking the Heartbeat Counting Task (Schandry, 1981) has been demonstrated for the first time, as have their confidence scores when undertaking this task. From this data, a metacognitive measure of interoceptive awareness has been established for the sample. Of particular note is the variability of trainees' confidence across years of training, the significance of which warrants further investigation, specifically the extent to which 'confidence' truly relates to the Heartbeat Counting Task, or might reflect something of the condition of being a trainee.

Further research into the interoceptive capacity (awareness, accuracy and confidence) of qualified child psychotherapists would present an opportunity to look past the potential disruptive impact that a period of training may have. Kandasamy

and colleagues (2016) suggest the possibility of a detrimental impact of self-conscious scrutiny upon intuitive processes involved in interoception. More experienced child psychotherapists who have had the opportunity to internalise and embed their practice could provide a point of comparison to the trainees within this study.

Egan and Carr's Body-centred Countertransference Scale (2005) has provided evidence of the frequency with which symptoms of embodied countertransference are experienced amongst child psychotherapy trainees, supporting the argument that this phenomenon is widespread across psycho-therapeutic modalities (Pearlman and Saakvitne, 1995; Booth et al., 2010); this highlights the importance of this area of experience for training providers.

The study's Qualitative Countertransference Questionnaire has evidenced for the first time child psychotherapy trainees' perspectives on countertransference and their perception of the phenomenon as being of central importance to their practice.

Finally, a significant unexpected finding of this study has highlighted the need for further research into the impact of child psychotherapy upon those who undertake it; in particular, the emotional impact of the training.

Appendices

Appendix A: ethics application and approvals

The ethics application detailed below includes copies of the following public facing documents: the participant information sheet, consent form, debrief and questionnaires used within the study. The application also documents the email correspondence from NOCLOR confirming ethical approval from the Tavistock Research Ethics Committee (TREC) to be sufficient for the study.

Following the ethics application, approval from TREC is documented.

The Tavistock and Portman NHS
NHS Foundation Trust

Tavistock and Portman Trust Research Ethics Committee (TREC)

APPLICATION FOR ETHICAL REVIEW OF RESEARCH INVOLVING HUMAN PARTICIPANTS

This application should be submitted alongside copies of any supporting documentation which will be handed to participants, including a participant information sheet, consent form, self-completion survey or questionnaire.

Where a form is submitted and sections are incomplete, the form will not be considered by TREC and will be returned to the applicant for completion.

For further guidance please contact Paru Jeram (academicquality@tavi-port.nhs.uk)

PROJECT DETAILS

Current project title	Exploring interoception through a psychoanalytic lens: an analysis of the relationship between the neuropsychological concept of interoception and the psychoanalytic concept of countertransference.		
Proposed project start date	April 2018	**Anticipated project end date**	September 2019

APPLICANT DETAILS

Name of Researcher	Laura Balfour
Email address	laura.balfour@nhs.net
Contact telephone number	07446345621

CONFLICTS OF INTEREST

Will any of the researchers or their institutions receive any other benefits or incentives for taking part in this research over and above their normal salary package or the costs of undertaking the research? **YES** ☐ **NO** ☒ If **YES**, please detail below:
Is there any further possibility for conflict of interest? YES ☐ **NO** ☒ If **YES**, please detail below:

FOR ALL APPLICANTS

Is your research being conducted externally* to the Trust? (for example; within a Local Authority, Schools, Care Homes, other NHS Trusts or other organisations). *Please note that 'external' is defined as an organisation which is external to the Tavistock and Portman NHS Foundation Trust (Trust)	**YES** ☐ **NO** ☒

If **YES**, please supply details below:	
Has external* ethics approval been sought for this research? **(i.e. submission via Integrated Research Application System (IRAS) to the Health Research Authority (HRA) or other external research ethics committee)** *Please note that 'external' is defined as an organisation/body which is external to the Tavistock and Portman Trust Research Ethics Committee (TREC) If **YES**, please supply details of the ethical approval bodies below **AND** include any letters of approval from the ethical approval bodies:	**YES** ☐ **NO** ☒
If your research is being undertaken externally to the Trust, please provide details of the sponsor of your research?	
Do you have local approval (this includes R&D approval)?	**YES** ☒ **NO** ☐ Attached email correspondence with NOCLOR

COURSE LEAD • Does the proposed research as detailed herein have your support to proceed? **YES** ☒ **NO** ☐	
Signed	Carin Bradley
Date	1st March 2018.

APPLICANT DECLARATION I confirm that: • The information contained in this application is, to the best of my knowledge, correct and up to date. • I have attempted to identify all risks related to the research. • I acknowledge my obligations and commitment to upholding our University's Code of Practice for ethical research and observing the rights of the participants. • I am aware that cases of proven misconduct, in line with our University's policies, may result in formal disciplinary proceedings and/or the cancellation of the proposed research.	
Applicant (print name)	Laura Balfour
Signed	Laura Balfour
Date	20/02/2018

FOR RESEARCH DEGREE STUDENT APPLICANTS ONLY

Name and School of Supervisor/Director of Studies	University of Essex Tavistock and Portman NHS Foundation Trust Jocelyn Catty
Qualification for which research is being undertaken	M80 Professional Doctorate in Psychoanalytic Child and Adolescent Psychotherapy

Supervisor/Director of Studies –

- Does the student have the necessary skills to carry out the research?
  YES ☒ NO ☐
- Is the participant information sheet, consent form and any other documentation appropriate?
  YES ☒ NO ☐
- Are the procedures for recruitment of participants and obtaining informed consent suitable and sufficient?
  YES ☒ NO ☐
- Where required, does the researcher have current Disclosure and Barring Service (DBS) clearance?
  YES ☒ NO ☐

Signed	Jaulyn Gelly
Date	21/02/18

DETAILS OF THE PROPOSED RESEARCH

1. Provide a brief description of the proposed research, including the requirements of participants. This must be in lay terms and free from technical or discipline specific terminology or jargon. If such terms are required, please ensure they are adequately explained (Do not exceed 500 words)

The proposed research is for a mixed methods study: incorporating both a theoretical and empirical design. The theoretical aspect of the study will consist of an extensive literature review and theoretical analysis exploring the neuropsychological concept of 'interoception' (a neuropsychological concept that refers to an individual's perception/ or sense of their own body state, for example: heart rate, temperature and breathing) and the psychoanalytic concept of 'countertransference' (the emotional experience evoked in the therapist by the patient). This theoretical review will be conducted by the researcher.

The empirial aspect of this study intends to explore the relationship between interoception and Child Psychotherapy trainees' experience of countertransference. Existing research suggests that an individual's perception of their body state is intimately related to emotional experience and intuition; indeed, there is a positive correlation between accurate perception of body state, emotional sensitivity, capacity to understand emotions and the use of emotions to enhance task performance.

In child psychotherapy, close attention to emotional experience is vital. Child psychotherapy trainees are required to develop a capacity to be open to, observant of and reflective upon, feeling states experienced within the therapeutic setting; those overtly expressed by the patient and their own. Feeling states evoked within the child psychotherapist during an encounter with a patient maybe understood as 'countertransference'.

The empirical aspect of the research will use a cross-sectional study design; that is an observational study that analyses data collected from a population, at a specific point in time, in this case trainee Child Psychotherapists. The data gathered will assess the interoceptive accuracy of Child Psychotherapy trainees, based at the Tavistock Centre, using an established heartbeat counting task and will explore their experience of 'countertransference' by means of the completion of two questionnaires.

Participants in this study will be asked to attend data collection appointment, detailed below. All data will be anonymised and the confidentiality of participants maintained. Data appointments will take place at the Tavistock Centre, in the same room, booked specifically for this purpose.

2. Provide a statement on the aims and significance of the proposed research, including potential impact to knowledge and understanding in the field (where appropriate, indicate the associated hypothesis which will be tested). This should be a clear justification of the proposed research, why it should proceed and a statement on any anticipated benefits to the community. (Do not exceed 700 words)

The proposed study intends to investigate the neuropsychological concept of interoception through a psychoanalytic lens and specifically in relation to the psychoanalytic concept of countertransference. The research aims:

- To explore the theoretical relationship between the neuropsychological concept of interoception and the

psychoanalytic concept of countertransference.

- To measure the interoceptive accuracy of child psychotherapy trainees, across the stages of their training, who are studying on the Professional Doctorate in Pscyhoanalytic Child and Adolescent Psychotherapy (M80) at the Tavistock Centre.
- To begin to examine the possible relationship between interoception and the experience of countertransference phenomena.

It is hoped that this project will add to understanding within the field of Child Psychotherapy Research through an exploratory linking and analyse of psychoanalytic and neuropsychological concepts.

The project is part of the researcher's doctoral training in Psychoanalytic Child and Adolescent Psychotherapy.

3. Provide an outline of the methodology for the proposed research, including proposed method of data collection, tasks assigned to participants of the research and the proposed method and duration of data analysis. If the proposed research makes use of pre-established and generally accepted techniques, please make this clear. (Do not exceed 500 words)

The empirical aspect of this study is of a cross-sectional design. Participants will be recruited across different stages of training on the M80 (Professional Doctorate in Psychoanalytic Child and Adolescent Psychotherapy). A participant information sheet will be provided. Those wishing to participant will be asked to provide contact details and to complete a consent form prior to the study commencing. Participants will then be sent two questionnaires (enclosed), exploring their experience of countertransference phenonema in their therapeutic work with patients. Participants will be asked to complete these questionnaires prior to their individual data collection appointment, the time of which will be sent out along with the questionnaires. At the data collection appointment the participants will meet with the researcher and a research assistant. The process of data collection will be explained and the researcher will then leave the participant with the research assistant who will give them a participant number to be applied to their data (including the returned questionnaires). This is in order to ensure that data gathered is anonymous as the researcher is an M80 trainee. Participants will be asked to provide basic demographic information (age, gender, year of training). Participants will then be asked to complete an established heartbeat counting task. This involves asking the participant to silently count their own heart beat as they perceive it (without feeling for a pulse) for one minute. Simultaneously a pulse oximeter will be applied by the research assistant to their finger to monitor their actual heart rate. The participants perceived heart beat and actual heart rate will be recorded by the research assistant and their along with their unique participation number so that this data can be analysed with the answers from their questionnaires. It is anticipated that data collection appointments will last for 10 minutes.

A small pilot study of 3 individuals will be conducted in advance to familarise the research team with the process and timings of data collection.

Descriptive statistics will be employed to explore the data generated in the study. This will involve a univariate analysis exploring associations between demographic information, experience of countertransference and interoceptive accuracy. If indicated by the data set, a regression analysis will then be applied to explore the potential relationship between variables.

Results will be contextualized within the theoretical analysis undertaken and submitted to the University of Essex as part of the researcher's M80 doctoral training. Results may also be submitted to academic journals and conferences.

PARTICIPANT DETAILS

4. Provide an explanation detailing how you will identify, approach and recruit the participants for the proposed research, including clarification on sample size and location. Please provide justification for the exclusion/inclusion criteria for this study (i.e. who will be allowed to / not allowed to participate) and explain briefly, in lay terms, why this criteria is in place. (Do not exceed 500 words)

It is anticipated that a sample of 45 participants will be recruited to the study. This is to allow for a potential regression analysis of three variables: age, gender and stage of training (with an accepted standard in research

of a minimum of 15 participants needed per variable). All participants will be Child Psychotherapy trainees studying on the M80 at the Tavistock Centre. Participants will be sought across various stages of this training.

A pilot study of 3 individuals will be conducted prior to the main study. These individuals will also be Child Psychotherapy trainees. Their data will not be included in the main study.

A multi-stage recruitment strategy will be used to engage study participants:

- In the first instance this will involve a communication by email informing the trainees that they are being invited to participate in the research project. Background information to the study and contact details for the researcher will be given.

- The researcher will then request permission from research tutors at the Tavistock Centre to invite trainees to participate in person through attendance at one of their regular weekly research seminars. Information in paper copy giving details of the study, will be given out at this face to face meeting thereby providing trainees with as much information as possible. At this stage, the researcher will request contact details from potential participants and ask that those who wish to participate complete a consent form.

- The researcher will send out a follow up email to participants. This email will include two questionnaires to be completed by the participant and an invitation to a data collection appointment. Participants will also be offered paper copies of these questionnaires. Participants will be asked to return the questionnaires in hard copy at the time of their data collection appointment. It will not be possible to return the questionnaires electronically due to the need to anonymise data.

5. Will the participants be from any of the following groups?*(Tick as appropriate)*

☒ Students or staff of the Trust or the University.
☒ Adults (over the age of 18 years with mental capacity to give consent to participate in the research).
☐ Children or legal minors (anyone under the age of 16 years)[1]
☐ Adults who are unconscious, severely ill or have a terminal illness.
☐ Adults who may lose mental capacity to consent during the course of the research.
☐ Adults in emergency situations.
☐ Adults[2] with mental illness - particularly those detained under the Mental Health Act (1983 & 2007).
☐ Participants who may lack capacity to consent to participate in the research under the research requirements of the Mental Capacity Act (2005).
☐ Prisoners, where ethical approval may be required from the National Offender Management Service (NOMS).
☐ Young Offenders, where ethical approval may be required from the National Offender Management Service (NOMS).
☐ Healthy volunteers (in high risk intervention studies).
☐ Participants who may be considered to have a pre-existing and potentially dependent[3] relationship with the investigator (e.g. those in care homes, students, colleagues, service-users, patients).
☐ Other vulnerable groups (see Question 6).
☐ Adults who are in custody, custodial care, or for whom a court has assumed responsibility.
☐ Participants who are members of the Armed Forces.

[1] If the proposed research involves children or adults who meet the Police Act (1997) definition of vulnerability[3], any researchers who will have contact with participants must have current Disclosure and Barring Service (DBS) clearance.
[2] 'Adults with a learning or physical disability, a physical or mental illness, or a reduction in physical or mental capacity, and living in a care home or home for people with learning difficulties or receiving care in their own home, or receiving hospital or social care services.' (Police Act, 1997)
[3] Proposed research involving participants with whom the investigator or researcher(s) shares a dependent or unequal relationships (e.g. teacher/student, clinical therapist/service-user) may compromise the ability to give informed consent which is free from any form of pressure (real or implied) arising from this relationship. TREC recommends that, wherever practicable, investigators choose participants with whom they have no dependent relationship. Following due scrutiny, if the investigator is confident that the research involving participants in dependent relationships is vital and defensible, TREC will require additional information setting out the case and detailing how risks inherent in the dependent relationship will be managed. TREC will also need to be reassured that refusal to participate will not result in any discrimination or penalty.

6. Will the study involve participants who are vulnerable? YES ☐ NO ☒

For the purposes of research, 'vulnerable' participants may be adults whose ability to protect their own interests are impaired or reduced in comparison to that of the broader population. Vulnerability may arise from the participant's personal characteristics (e.g. mental or physical impairment) or from their social environment, context and/or disadvantage (e.g. socio-economic mobility, educational attainment, resources, substance dependence, displacement or homelessness). Where prospective participants are at high risk of consenting under duress, or as a result of manipulation or coercion, they must also be considered as vulnerable.

Adults lacking mental capacity to consent to participate in research and children are automatically presumed to be vulnerable. Studies involving adults (over the age of 16) who lack mental capacity to consent in research must be submitted to a REC approved for that purpose.

6.1. If YES, what special arrangements are in place to protect vulnerable participants' interests?

If **YES**, the research activity proposed will require a DBS check. *(NOTE: information concerning activities which require DBS checks can be found via https://www.gov.uk/government/publications/dbs-check-eligible-positions-guidance)*

7. Do you propose to make any form of payment or incentive available to participants of the research? YES ☐ NO ☒

If **YES**, please provide details taking into account that any payment or incentive should be representative of reasonable remuneration for participation and may not be of a value that could be coercive or exerting undue influence on potential participants' decision to take part in the research. Wherever possible, remuneration in a monetary form should be avoided and substituted with vouchers, coupons or equivalent. Any payment made to research participants may have benefit or HMRC implications and participants should be alerted to this in the participant information sheet as they may wish to choose to decline payment.

8. What special arrangements are in place for eliciting informed consent from participants who may not adequately understand verbal explanations or written information provided in English; where participants have special communication needs; where participants have limited literacy; or where children are involved in the research? (Do not exceed 200 words)

N/A

RISK ASSESSMENT AND RISK MANAGEMENT

9. Does the proposed research involve any of the following? ***(Tick as appropriate)***

☒ use of a questionnaire, self-completion survey or data-collection instrument (attach copy)
☐ use of emails or the internet as a means of data collection
☐ use of written or computerised tests
☐ interviews (attach interview questions)
☐ diaries (attach diary record form)
☐ participant observation
☐ participant observation (in a non-public place) without their knowledge / covert research
☐ audio-recording interviewees or events
☐ video-recording interviewees or events
☐ access to personal and/or sensitive data (i.e. student, patient, client or service-user data) without the participant's informed consent for use of these data for research purposes
☐ administration of any questions, tasks, investigations, procedures or stimuli which may be experienced by participants as physically or mentally painful, stressful or unpleasant during or after the research process
☐ performance of any acts which might diminish the self-esteem of participants or cause them to experience discomfiture, regret or any other adverse emotional or psychological reaction
☐ investigation of participants involved in illegal or illicit activities (e.g. use of illegal drugs)
☐ procedures that involve the deception of participants
☐ administration of any substance or agent
☐ use of non-treatment of placebo control conditions
☐ participation in a clinical trial
☐ research undertaken at an off-campus location (risk assessment attached)
☐ research overseas (copy of VCG overseas travel approval attached)

10. Does the proposed research involve any specific or anticipated risks (e.g. physical, psychological, social, legal or economic) to participants that are greater than those encountered in everyday life?
YES ☐ **NO** ☒
If **YES**, please describe below including details of precautionary measures.

11. Where the procedures involve potential hazards and/or discomfort or distress for participants, please state what previous experience the investigator or researcher(s) have had in conducting this type of research.

N/A

12. Provide an explanation of any potential benefits to participants. Please ensure this is framed within the overall contribution of the proposed research to knowledge or practice. (Do not exceed 400 words)
NOTE: Where the proposed research involves students of our University, they should be assured that accepting the offer to participate or choosing to decline will have no impact on their assessments or learning experience. Similarly, it should be made clear to participants who are patients, service-users and/or receiving any form of treatment or medication that they are not invited to participate in the belief that participation in the research will result in some relief or improvement in their condition.

It is anticipated that participants may benefit from feeling that they have contributed to novel research in their field of study.

Participants will be Child Psychotherapy trainees who have a research component to their training, as such it may be of some benefit to them to gain an experience of participating in a research process. However, it will be made clear to participants that choosing to accept or decline the invitation to participate will have no impact on their assessments or directly upon their learning.

13. Provide an outline of any measures you have in place in the event of adverse or unexpected outcomes and the potential impact this may have on participants involved in the proposed research. (Do not exceed 300 words)

Participants will be given contact details for the researcher and of the research supervisor with whom they can discuss any adverse or unexpected outcome from involvement in the research.

The heartbeat counting task involves physiological measurement of heart rate, by means of pulse oximetry. Applied in the heartbeat counting task this is not however a diagnostic tool and participants will be informed of this.

14. Provide an outline of your debriefing, support and feedback protocol for participants involved in the proposed research. This should include, for example, where participants may feel the need to discuss thoughts or feelings brought about following their participation in the research. This may involve referral to an external support or counseling service, where participation in the research has caused specific issues for participants. Where medical aftercare may be necessary, this should include details of the treatment available to participants. Debriefing may involve the disclosure of further information on the aims of the research, the participant's performance and/or the results of the research. (Do not exceed 500 words)

It is not anticipated that participation in the proposed study is likely to cause harm to research participants, however the researcher anticipates that participants may be curious to know the measure of their interoceptive accuracy (as assessed by the heartbeat counting task) and that this has potential to impact upon their self-perception. Participants will therefore be offered a choice as to whether they wish to receive the outcome of their heartbeat counting task. If this is something that they want, then it will be sent to them following completion of the research project along with contextualising information. The research assistant will facilitate this process (which will depend upon identifying participants by means of their unique identification numbers). Participants will be encouraged to contact the researcher if they have any concerns following receipt of their result.

Participants will be provided with a written debrief letter with contact details for the researcher and the research supervisor who is based at the Tavistock Centre.

PARTICIPANT CONSENT AND WITHDRAWAL

15. Have you attached a copy of your participant information sheet (this should be in *plain English*)? Where the research involves non-English speaking participants, please include translated materials.
YES ☒ **NO** ☐

If **NO**, please indicate what alternative arrangements are in place below:

16. Have you attached a copy of your participant consent form (this should be in *plain English*)? Where the research involves non-English speaking participants, please include translated materials.
YES ☒ **NO** ☐

If **NO**, please indicate what alternative arrangements are in place below:

17. The following is a participant information sheet checklist covering the various points that should be included in this document.

☒ Clear identification of the sponsor for the research, the project title, the Researcher or Principal Investigator and other researchers along with relevant contact details.
☒ Details of what involvement in the proposed research will require (e.g., participation in interviews, completion of questionnaire, audio/video-recording of events), estimated time commitment and any risks involved.
☒ A statement confirming that the research has received formal approval from TREC.
N/A ☐ If the sample size is small, advice to participants that this may have implications for confidentiality / anonymity.
N/A ☐ A clear statement that where participants are in a dependent relationship with any of the researchers that participation in the research will have no impact on assessment / treatment / service-use or support.

☒ Assurance that involvement in the project is voluntary and that participants are free to withdraw consent at any time, and to withdraw any unprocessed data previously supplied.
☒ Advice as to arrangements to be made to protect confidentiality of data, including that confidentiality of information provided is subject to legal limitations.
☒ A statement that the data generated in the course of the research will be retained in accordance with the University's Data Protection Policy.
☒ Advice that if participants have any concerns about the conduct of the investigator, researcher(s) or any other aspect of this research project, they should contact Simon Carrington, Head of Academic Governance and Quality Assurance (academicquality@tavi-port.nhs.uk)
N/A ☐ Confirmation on any limitations in confidentiality where disclosure of imminent harm to self and/or others may occur.

18. The following is a consent form checklist covering the various points that should be included in this document.

☒ University or Trust letterhead or logo.
☒ Title of the project (with research degree projects this need not necessarily be the title of the thesis) and names of investigators.
☒ Confirmation that the project is research.
☒ Confirmation that involvement in the project is voluntary and that participants are free to withdraw at any time, or to withdraw any unprocessed data previously supplied.
☒ Confirmation of particular requirements of participants, including for example whether interviews are to be audio-/video-recorded, whether anonymised quotes will be used in publications advice of legal limitations to data confidentiality.
N/A ☐ If the sample size is small, confirmation that this may have implications for anonymity any other relevant information.
☒ The proposed method of publication or dissemination of the research findings.
N/A ☐ Details of any external contractors or partner institutions involved in the research.
N/A ☐ Details of any funding bodies or research councils supporting the research.
N/A ☐ Confirmation on any limitations in confidentiality where disclosure of imminent harm to self and/or others may occur.

CONFIDENTIALITY AND ANONYMITY

19. Below is a checklist covering key points relating to the confidentiality and anonymity of participants. Please indicate where relevant to the proposed research.

☐ Participants will be completely anonymised and their identity will not be known by the investigator or researcher(s) (i.e. the participants are part of an anonymous randomised sample and return responses with no form of personal identification)?
☐ The responses are anonymised or are an anonymised sample (i.e. a permanent process of coding has been carried out whereby direct and indirect identifiers have been removed from data and replaced by a code, with no record retained of how the code relates to the identifiers).
☒ The samples and data are de-identified (i.e. direct and indirect identifiers have been removed and replaced by a code. The investigator or researchers are able to link the code to the original identifiers and isolate the participant to whom the sample or data relates).
☐ Participants have the option of being identified in a publication that will arise from the research.
☐ Participants will be pseudo-anonymised in a publication that will arise from the research. (I.e. the researcher will endeavour to remove or alter details that would identify the participant.)
☒ The proposed research will make use of personal sensitive data.
☐ Participants consent to be identified in the study and subsequent dissemination of research findings and/or publication.

20. Participants must be made aware that the confidentiality of the information they provide is subject to legal limitations in data confidentiality (i.e. the data may be subject to a subpoena, a freedom of information request or mandated reporting by some professions). This only applies to named or de-identified data. If your participants are named or de-identified, please confirm that you will specifically state these limitations.

YES ☒ **NO** ☐

If **NO**, please indicate why this is the case below:

NOTE: WHERE THE PROPOSED RESEARCH INVOLVES A SMALL SAMPLE OR FOCUS GROUP, PARTICIPANTS SHOULD BE ADVISED THAT THERE WILL BE DISTINCT LIMITATIONS IN THE LEVEL OF ANONYMITY THEY CAN BE AFFORDED.

DATA ACCESS, SECURITY AND MANAGEMENT

21. Will the Researcher/Principal Investigator be responsible for the security of all data collected in connection with the proposed research? YES ☒ **NO** ☐
If **NO**, please indicate what alternative arrangements are in place below:

22. In line with the 5th principle of the Data Protection Act (1998), which states that personal data shall not be kept for longer than is necessary for that purpose or those purposes for which it was collected; please state how long data will be retained for.

☐ 1-2 years ☐ 3-5 years ☒ 6-10 years ☐ 10> years

NOTE: Research Councils UK (RCUK) guidance currently states that data should normally be preserved and accessible for 10 years, but for projects of clinical or major social, environmental or heritage importance, for 20 years or longer. (http://www.rcuk.ac.uk/documents/reviews/grc/grcpoldraft.pdf)

23. Below is a checklist which relates to the management, storage and secure destruction of data for the purposes of the proposed research. Please indicate where relevant to your proposed arrangements.

☒ Research data, codes and all identifying information to be kept in separate locked filing cabinets.
☒ Access to computer files to be available to research team by password only.
☐ Access to computer files to be available to individuals outside the research team by password only (See **23.1**).
☒ Research data will be encrypted and transferred electronically within the European Economic Area (EEA).
☐ Research data will be encrypted and transferred electronically outside of the European Economic Area (EEA). (See **23.2**).
NOTE: Transfer of research data via third party commercial file sharing services, such as Google Docs and YouSendIt are not necessarily secure or permanent. These systems may also be located overseas and not covered by UK law. If the system is located outside the European Economic Area (EEA) or territories deemed to have sufficient standards of data protection, transfer may also breach the Data Protection Act (1998).
☐ Use of personal addresses, postcodes, faxes, e-mails or telephone numbers.
☐ Use of personal data in the form of audio or video recordings.
☐ Primary data gathered on encrypted mobile devices (i.e. laptops). **NOTE:** This should be transferred to secure UEL servers at the first opportunity.
☒ All electronic data will undergo secure disposal.
NOTE: For hard drives and magnetic storage devices (HDD or SSD), deleting files does not permanently erase the data on most systems, but only deletes the reference to the file. Files can be restored when deleted in this way. Research files must be overwritten to ensure they are completely irretrievable. Software is available for the secure erasing of files from hard drives which meet recognised standards to securely scramble sensitive data. Examples of this software are BC Wipe, Wipe File, DeleteOnClick and Eraser for Windows platforms. Mac users can use the standard 'secure empty trash' option; an alternative is Permanent eraser software.
☒ All hardcopy data will undergo secure disposal.
NOTE: For shredding research data stored in hardcopy (i.e. paper), adopting DIN 3 ensures files are cut into 2mm strips or confetti like cross-cut particles of 4x40mm. The UK government requires a minimum standard of DIN 4 for its material, which ensures cross cut particles of at least 2x15mm.

23.1. Please provide details of individuals outside the research team who will be given password protected access to encrypted data for the proposed research.

23.2. Please provide details on the regions and territories where research data will be electronically transferred that are external to the European Economic Area (EEA).

N/A

OVERSEAS TRAVEL FOR RESEARCH

24. Does the proposed research involve travel outside of the UK? YES ☐ NO ☒

24.1. Have you consulted the Foreign and Commonwealth Office website for guidance/travel advice? http://www.fco.gov.uk/en/travel-and-living-abroad/ **YES ☐ NO ☐**

24.2. If you are a non-UK national, have you sought travel advice/guidance from the Foreign Office (or equivalent body) of your country? **YES ☐ NO ☐ NOT APPLICABLE ☐**

24.3. Have you completed the overseas travel approval process and enclosed a copy of the document with this application? (For UEL students and staff only) **YES ☐ NO ☐**
Details on this process are available here http://www.uel.ac.uk/qa/research/fieldwork.htm

24.4. Is the research covered by your University's insurance and indemnity provision? **YES ☐ NO ☐**

NOTE: Where research is undertaken **by UEL students and staff** at an off-campus location within the UK or overseas, the Risk Assessment policy must be consulted:
http://dl-cfs-01.uel.ac.uk/hrservices/documents/hshandbook/risk_assess_policy.pdf.
For UEL students and staff conducting research where UEL is the sponsor, the Dean of School or Director of Service has overall responsibility for risk assessment regarding their health and safety.

24.5. Please evidence how compliance with all local research ethics and research governance requirements have been assessed for the country(ies) in which the research is taking place.

N/A

24.6. Will this research be financially supported by the United States Department of Health and Human Services or any of its divisions, agencies or programs? **YES** ☐ **NO** ☒

PUBLICATION AND DISSEMINATION OF RESEARCH FINDINGS

25. How will the results of the research be reported and disseminated? ***(Select all that apply)***

- ☒ Peer reviewed journal
- ☒ Conference presentation
- ☒ Internal report
- ☒ Dissertation/Thesis
- ☒ Other publication
- ☐ Written feedback to research participants
- ☒ Presentation to participants or relevant community groups
- ☐ Other (Please specify below)

OTHER ETHICAL ISSUES

26. Are there any other ethical issues that have not been addressed which you would wish to bring to the attention of Tavistock Research Ethics Committee (TREC)?

Ensuring anonymity of the research participants will be an important part of the research study design. For this reason a research assistant will be involved in the collection data. The research assistant is an experienced researcher and academic, her contact details are as follows:

Dr. Sarah Myers,
BA (Hons) (Oxon), MPhil (Cantab), Cert Men Hlth Stud (Open), Phd (Kent)
Tel: 07870887172
Email: sarah.myers@roehampton.ac.uk

Research participants will be allocated a unique participation number which will be given to them by the research assistant. The latter will keep securely and confidentially a record of the identities of the participants and their participation numbers. This record will be kept for the length of the research project. This information will not be accessed by the researcher and will be destroyed following completion of the project.

CHECKLIST FOR ATTACHED DOCUMENTS

27. Please check that the following documents are attached to your application.

N/A ☐ Letters of approval from ethical approval bodies (where relevant)
N/A ☐ Recruitment advertisement
☒ Participant information sheets (including easy-read where relevant)
☒ Consent forms (including easy-read where relevant)
N/A ☐ Assent form for children (where relevant)
N/A ☐ Evidence of any external approvals needed. **Correspondance with NOCLOR enclosed.**
☒ Questionnaire
N/A ☐ Interview Schedule or topic guide
N/A ☐ Risk Assessment (where applicable)
N/A ☐ Overseas travel approval (where applicable)

27.1. Where it is not possible to attach the above materials, please provide an explanation below.

The Tavistock and Portman NHS
NHS Foundation Trust

Date: 12.02.18

Version: 1

Study Title: *Exploring interoception through a psychoanalytic lens: an analysis of the relationship between the neuropsychological concept of interoception and the psychoanalytic concept of countertransference.*

Countertransference Questionnaire

Please answer the questions below in your own words, they are intended to explore your individual understanding, and experience of, the psychoanalytic concept of countertransference.

1) What do you understand the psychoanalytic concept of countertransference to mean?

2) Please give a brief description of an experience of countertransference from your practice in Child and Adolescent Psychotherapy.

3) Please summarise what the importance of countertransference is to you as a Child Psychotherapy trainee.

Please bring this questionnaire to your data collection appointment. Thank you.

Participant Number

The Tavistock and Portman NHS
NHS Foundation Trust

Date: 12.02.18
Version: 1

Study Title: *Exploring interoception through a psychoanalytic lens: an analysis of the relationship between the neuropsychological concept of interoception and the psychoanalytic concept of countertransference.*

Body-centred Countertransference Scale (Egan & Carr, 2005)

Please reflect on your experience of bodily reactions when in a therapeutic session with a client in the last six months. For each item in the scale, pleas tick the box that applies to you.

		0 'This has never happened to me when in the last six months'	**1** 'Yes, this has happened to me at least once in the last six months, but not that often'	**2** 'Yes, this has happened a few times in the last six months'	3 'Yes, this has happened often in the last six months'
1	Muscle Tension				
2	Sleepiness				
3	Yawning				
4	Tearfulness				
5	Unexpectedly shifting your body				
6	Headache				
7	Stomach Disturbance				
8	Throat Constriction				
9	Raised Voice				
10	Dizziness				
11	Loss of Voice				
12	Aches in Joints				
13	Nausea				
14	Numbness				
15	Sexual Arousal				
16	Genital Pain				
17	Other *(please specify)*				

Please bring this questionnaire to your data collection appointment. Thank you.

Participant Number:

The Tavistock and Portman NHS
NHS Foundation Trust

Participant Information Sheet

Date: 04.02.2018

Version: 1

Study title: *Exploring interoception through a psychoanalytic lens: an analysis of the relationship between the neuropsychological concept of interoception and the psychoanalytic concept of countertransference.*

What is the purpose of the study?

The purpose of this study is to investigate the concept of interoception (an individual's perception of their own body state) from a psychoanalytic perspective; and specifically, to explore associations between interoception and the psychoanalytic concept of countertransference.

This study is part of the researcher's Professional Doctorate in Psychoanalytic Child and Adolescent Psychotherapy.

What is the study about?

Interoception is a neuropsychological concept that refers to an individual's perception or sense of their own body state, for example: heart rate, temperature and breathing. Existing research suggests that an individual's perception of their body state is intimately related to emotional experience and intuition; indeed, there is a positive correlation between accurate perception of body state, emotional sensitivity, capacity to understand emotions and the use of emotions to enhance task performance.

In child psychotherapy, close attention to emotional experience is vital. Child psychotherapy trainees are required to develop a capacity to be open to, observant of and reflective upon, feeling states experienced within the therapeutic setting; those overtly expressed by the patient and their own. Feeling states evoked within the child

psychotherapist during an encounter with a patient maybe understood as 'countertransference'.

This study intends to explore the relationship between interoception and trainees' experience of countertransference. The study will assess the interoceptive accuracy of child psychotherapy trainees, across different stages of training, using an established heartbeat counting task. Alongside this task trainees will also be asked to reflect upon and share something of their experience of countertransference in their professional practice.

What will happen if I choose to take part?

- If you decide to take part in the study you will need to complete a consent form.
- You will be invited to a data collection appointment which will take place at the Tavistock Centre.
- Along with the details of your data collection appointment you will be sent two questionnaires about your experience of countertransference phenomena. You will be asked to complete these in your own time and to bring them along to your appointment.
- At the data collection appointment, you will meet with the researcher who will introduce you to a research assistant and the data collection process will be explained. The researcher will leave then leave you with the research assistant until all data has been gathered.
- The research assistant will give you a participation number. This is to protect your anonymity and means that the researcher will not be able to identify you from your data.
- You will be asked to provide basic demographic information and to return your questionnaires.
- The research assistant will then conduct a heartbeat counting task. This is an established measure of interoceptive accuracy. You will be asked to silently count your heart beat for one minute and to report to the research assistant what you

perceive it to be. At the same time the research assistant will measure your actual heart beat by means of a pulse oximeter applied to your finger. This is a non-invasive procedure which will not cause discomfort.

- The research assistant will record your perceived heart beat and your actual heart beat as measured by the pulse oximeter.
- The researcher will then meet with you to provide you with an opportunity to debrief.
- It is anticipated that the appointment will take no more than 10 minutes.

Confidentiality: how will information about me and data gathered in the study be used and stored?

If you chose to participate in the study your data will be held in confidence. You will be given a participation number by the research assistant and this will be applied to all data collected from you. The researcher will not be able to identify you from this number. Your anonymity will be protected in the analysis of data and report of findings.

Data will initially be stored in a locked cupboard. It will then be transferred to an electronic file which will be password protected.

Data will be kept for no more than ten years, at which point it will be destroyed.

Data generated in the course of this study will be kept in accordance with the University of Essex Data Protection Policy.

Please note: The confidentiality of the information that you provide is subject to legal limitations in data confidentiality (i.e. the data may be subject to a subpoena, a freedom of information request or mandated reporting by some professions).

What will happen to the results of the study?

The results of the study will be written up as part of the researcher's Professional Doctorate in Psychoanalytic Child and Adolescent Psychotherapy. The study's findings may also be submitted for publication in professional journals or presented as conference papers. The study's findings may also form the basis for future research.

If you would like to receive the result from your heart beat counting task (the measure of your interoceptive accuracy) you will be offered the opportunity to ask for this. The result will be sent to you on completion of the research project along with contextualising information. The research assistant will facilitate this process. You will be able to contact the research team to discuss your result should you wish to.

Is there a benefit to taking part in the study?

Taking part in the study will provide you with an opportunity to experience being a participant in a novel piece of Child Psychotherapy research which you may find interesting. Involvement in this study will not impact upon your assessments or learning on the training in Psychoanalytic Child and Adolescent Psychotherapy.

There are no other anticipated benefits to involvement in this study.

Are there any risks or disadvantages to participating in the study?

There are no known risks or disadvantages to participating in the study.

If you have any questions about the study please contact:

Researcher: Laura Balfour, Child and Adolescent Psychotherapist in Training
Email: laura.balfour@nhs.net

Research Supervisor: Jocelyn Catty, Child Psychotherapist
Email: JCatty@tavi-port.nhs.uk

Any concerns about the conduct of the research team or any other aspect of this study should be reported to Simon Carrington, Head of Academic Governance and Quality Assurance

Email: academicquality@tavi-port.nhs.uk

The Tavistock and Portman NHS
NHS Foundation Trust

This project has been approved by: The Tavistock and Portman Research Ethics Committee (TREC)

The Tavistock and Portman NHS
NHS Foundation Trust

Date: 12.02.18

Version: 1

Consent Form

Study Title: *Exploring interoception through a psychoanalytic lens: an analysis of the relationship between the neuropsychological concept of interoception and the psychoanalytic concept of countertransference.*

Name of Researcher: Laura Balfour

Please initial all boxes

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. ☐

3. I agree to take part in the above study. ☐

4. I would like to receive the result of my heartbeat counting task and contextualising information when the study is completed. ☐

Name of Participant	Date	Signature

The Tavistock and Portman NHS
NHS Foundation Trust

Date: 12.02.18

Version: 1

Debrief

Study Title: *Exploring interoception through a psychoanalytic lens: an analysis of the relationship between the neuropsychological concept of interoception and the psychoanalytic concept of countertransference.*

Thank you for choosing to participate in this study.

If you have requested the result of your heartbeat counting task this will be sent to you when the study is completed along with contextualising information.

If you have any questions or concerns regarding the study or your involvement in it please contact:

Researcher: Laura Balfour, Child and Adolescent Psychotherapist in Training

Email: laura.balfour@nhs.net

Or

Research Supervisor: Jocelyn Catty, Child Psychotherapist

Email: JCatty@tavi-port.nhs.uk

Any concerns about the conduct of the research team or any other aspect of this study should be reported to Simon Carrington, Head of Academic Governance and Quality Assurance

Email: academicquality@tavi-port.nhs.uk

Copy of email correspondence with NOCLOR confirming that the research study does not need external approval.

From: BALFOUR, Laura (LIVEWELL SOUTHWEST)
Sent: 13 November 2017 12:26
To: NOCLOR, Contact (CENTRAL AND NORTH WEST LONDON NHS FOUNDATION TRUST)
Subject: Approval for Tavistock and Portman M80 research project

Dear Noclor,

I have been advised by my research tutor to contact you regarding the research project that I propose to undertake as part of my training on the Tavistock and Portman M80, Professional Doctorate in Child and Adolescent Psychotherapy.

I am a trainee based in the Southwest of England (my host trust is Livewell Southwest, Plymouth), however my project will involve fellow trainees on the M80, delivered by the Tavistock and Portman. As such, I understand from my research tutor that it is you that I need to contact regarding the project rather than my local R&D department.

My research proposal has been approved by the M80 course team, to be undertaken in the last two years of my training (academic years 2017 - 2019). I am writing for advice on the next phase of approval as I am seeking R& D and TREC clearance. It is my understanding that the project will not require NHS ethic approval.

Please could you advise me on how to begin this process.

I look forward to hearing from you.

Many thanks,

Laura Balfour

Laura Balfour
Child and Adolescent Psychotherapist in Training
CAMHS
The Terraces
Mount Gould Hospital
Mount Gould Road
Plymouth
Devon
PL4 7QD

01752 434476
laura.balfour@nhs.net

From: NOCLOR, Contact (CENTRAL AND NORTH WEST LONDON NHS FOUNDATION TRUST)
Sent: 14 November 2017 13:55:04
To: BALFOUR, Laura (LIVEWELL SOUTHWEST)
Cc: NOCLOR, Contact (CENTRAL AND NORTH WEST LONDON NHS FOUNDATION TRUST)
Subject: RE: Approval for Tavistock and Portman M80 research project

Dear Laura,

Thank you for your email.

Before we can advise if you will need to make an application for HRA approval for your study, we need to confirm that the project is indeed research. Please clink on the two links below and complete the answer the questions for each HRA-decision toolkit:

1) Is your study research? http://www.hra-decisiontools.org.uk/research/

2) Do you need NHS REC approval? http://www.hra-decisiontools.org.uk/ethics/. *Further NRES guidance to help you decide if your project requires review by a Research Ethics Committee can be found via http://www.hra.nhs.uk/documents/2013/09/defining-research.pdf. Once you have completed each toolkit please take a snapshot of the results and send this to us to confirm.*

If after using the decision tools, you disagree with the outcome or are unsure of whether you have answered the questions appropriately, further clarification can be obtained by contacting the Queries Line (hra.queries@nhs.net). If you are requesting further advice your email should include the following information:

- Project title
- IRAS Project ID (if available)
- An A4 summary outlining your proposed project (one side only: 1,000 words max)
- A PDF or screenshot of the results page of the decision tool(s)
- An explanation of which questions you have difficulty in answering and why and/or
- An explanation of why you disagree with the outcome of the decision tool(s)

Please note: responsibility for determining if an activity is research (and whether the research requires review, including ethics approval within the Research Governance Framework) sits ultimately with the sponsor and investigator.

Please let me know the outcome so that I can advise you further and please do not hesitate to contact me if you have any query.

Kind Regards

Mabel Saili
Research & Development Manager

From: BALFOUR, Laura (LIVEWELL SOUTHWEST)
Sent: 15 November 2017 08:26
To: NOCLOR, Contact (CENTRAL AND NORTH WEST LONDON NHS FOUNDATION TRUST)
Subject: Re: Approval for Tavistock and Portman M80 research project

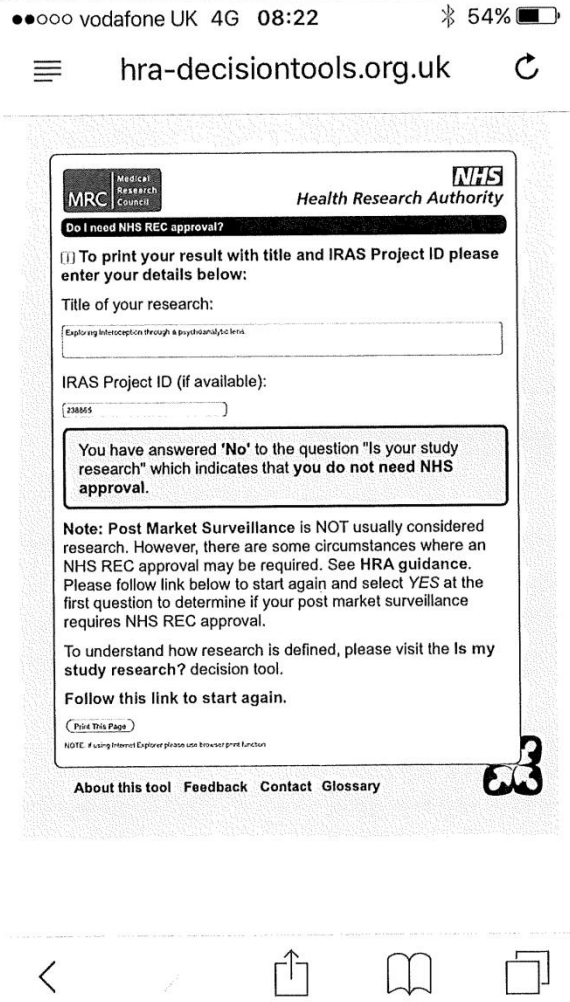
Dear Mabel,

Thank you for your email. I have applied the two tools and the result is no for both. My project goes not count as nhs research or require nhs ethics approval.

I would be grateful if you could advise me as to what to do next.
Thank your,
Laura

Laura Balfour
Child and Adolescent Psychotherapist in Training
CAMHS
The Terraces
Mount Gould Hospital
Mount Gould Road
Plymouth
Devon
PL4 7QD

01752 434476
laura.balfour@nhs.net



●●ooo vodafone UK 4G 08:18 54%

hra-decisiontools.org.uk

MRC Medical Research Council

NHS Health Research Authority

Is my study research?

(i) **To print your result with title and IRAS Project ID please enter your details below:**

Title of your research:

Exploring interoception through a psychoanalytic lens

IRAS Project ID (if available):

236955

You selected:

- **'No'** - Are the participants in your study randomised to different groups?
- **'No'** - Does your study protocol demand changing treatment/ patient care from accepted standards for any of the patients involved?
- **'No'** - Are your findings going to be generalisable?

Your study would NOT be considered Research by the NHS.

You may still need other approvals.

Researchers requiring further advice (e.g. those not confident with the outcome of this tool) should contact their R&D office or sponsor in the first instance, or the HRA to discuss your study. If contacting the HRA for advice, do this by sending an outline of the project (maximum one page), summarising its purpose, methodology, type of participant and planned location as well as a copy of this results page and a summary of the aspects of the decision(s) that you need further advice on to the HRA Queries Line at HRA.Queries@nhs.net.

For more information please visit the Defining Research table.

Follow this link to start again.

(Print This Page)

NOTE: If using Internet Explorer please use browser print function

About this tool Feedback Contact Glossary

NOCLOR, Contact (CENTRAL AND NORTH WEST LONDON NHS FOUNDATION TRUST)
Thu 23/11/2017 16:14

Mark as unread

To: BALFOUR, Laura (LIVEWELL SOUTHWEST);

You forwarded this message on 12/02/2018 14:39.

Dear Laura,

Thank you for your query and forwarding the 'HRA–Decision Tool' document confirming that the above named project is not 'Research'.

Based on this document that we have received, you will not need to register with us, nor gain a Favourable Opinion from the National Research Ethics Service, nor seek our permission for commencement of this project. Only the approval of the service in which the study will be conducted is required prior to the study commencing. We also advise you to inform the Clinical Governance Team in the Tavistock & Portman NHS Foundation Trust about your proposed project.

Please contact Irene Henderson, Clinical Governance & Quality Manager (ihenderson@tavi-port.nhs.uk) who will be able to advise you further.

Kind Regards,
Nevan

Nevan McNichol
Research Facilitator

Tel 020 3028 7033
Email n.mcnichol@nhs.net
Website www.noclor.nhs.uk
Twitter @NoclorResearch

Noclor Research Support
1st Floor, Bloomsbury Building, St Pancras Hospital,
4 St Pancras Way, London NW1 0PE

noclor RESEARCH SUPPORT

Screenshot of letter documenting ethical approval

The Tavistock and Portman NHS
NHS Foundation Trust

Quality Assurance & Enhancement
Directorate of Education & Training
Tavistock Centre
120 Belsize Lane
London
NW3 5BA

Tel: 020 8938 2699

https://tavistockandportman.nhs.uk/

Laura Balfour

By Email

15 May 2018

Dear Ms Balfour,

Re: Trust Research Ethics Application

Title: Exploring interoception through a psychoanalytic lens: an analysis of the relationship between the neuropsychological concept interoception and the psychoanalytic concept of countertransference

Thank you for submitting your updated Research Ethics documentation. I am pleased to inform you that your application has been approved and will be ratified at the next Trust Research Ethics Committee. This means you can proceed with your research.

If you have any further questions or require any clarification do not hesitate to contact me.

I am copying this communication to your supervisor.

May I take this opportunity of wishing you every success with your research.

Yours sincerely,

Best regards,

Paru Jeram
Secretary to the Trust Research Degrees Subcommittee
T: 020 938 2699
E: pjeram@tavi-Port.nhs.uk

cc. Course/Research Lead, Supervisor, Course Administrator

Appendix B: comparative statistical analysis inclusive of outlying data

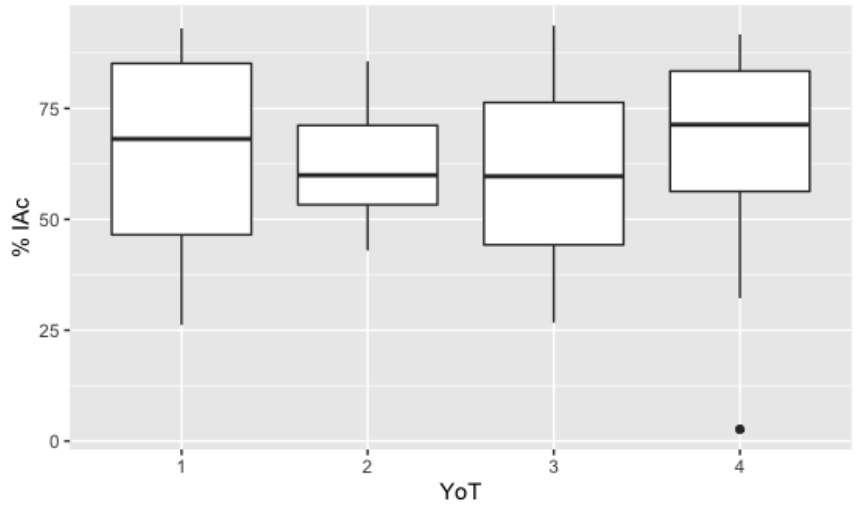


Figure 10b. *Boxplot IAc and YoT (n=37)*

The outlying participant data in Year 4 is illustrated by a black dot, sitting far below the range otherwise seen across year groups (Figure 10b).

Table 9b. Wilcoxon Rank Sum testing differences in IAc across YoT, inclusive of outlying data in year 4 (n=37).

Comparison (Group 1vs Group 2)	Group 1 IAc median	Group 2 IAc median	W	P value
Year 1 vs year 2	0.681	0.599	34	0.832
Year 1 vs Year 3	0.681	0.597	32	1
Year 1 vs Year 4	0.681	0.713	57	0.723
Year 2 vs year 3	0.599	0.597	32	1

Year 2 vs Year 4	0.599	0.713	37	0.390
Year 3 vs Year 4	0.597	0.713	40	0.526

Figure 12b. *Scatter-graph, RCS and IAc, inclusive of outlying Year 4 data (n=37)*

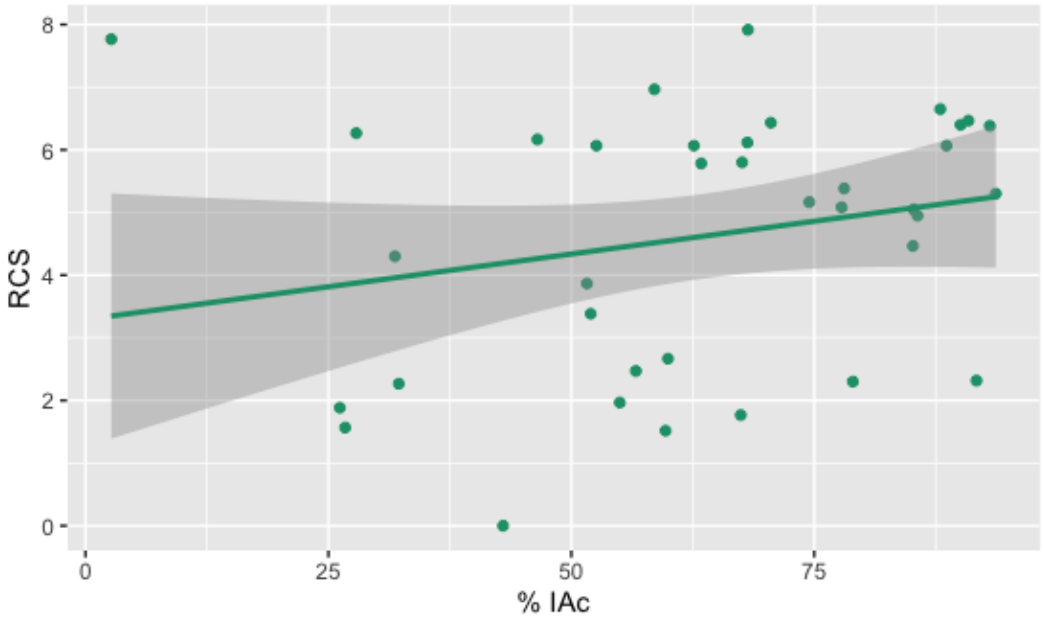


Table 12b. *Model 2b: Simple regression exploring IAc as the independent variable and RCS as the outcome variable, with outlying year 4 data included.*

Variable	Estimate	P value	Standard error	Confidence interval at 2.5%	Confidence Interval at 97.5%
Intercept	3.291	0.000	1.001	0.303	0.63
IAc	0.021	0.168	0.015	0.01	**0.07**

Adjusted R-squared: 0.027

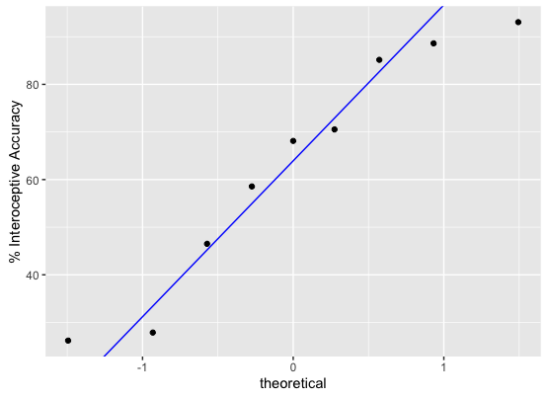
Overall model p-value: 0.168

Inclusion of outlying data removes statistical significance from the model (comparison is Table 9 in main body)

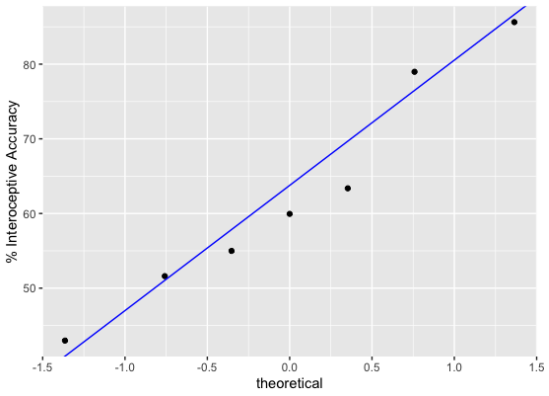
Appendix C: further assessing the normality of data, variables by year of training. *Inclusive of outlying data in year 4.*

Figure 17. *Q-Q plots assessing the normality of data distribution for % interoceptive accuracy (IAc) in each year of training subgroup*

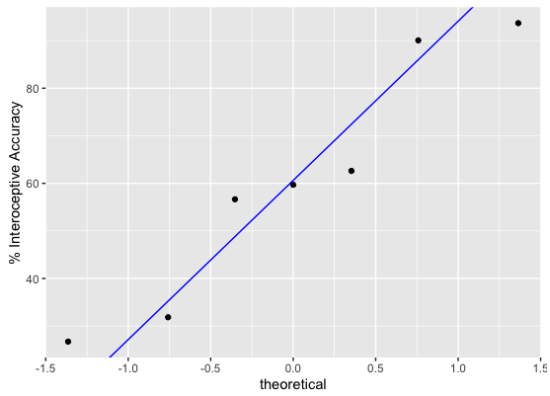
Year 1



Year 2



Year 3



Year 4

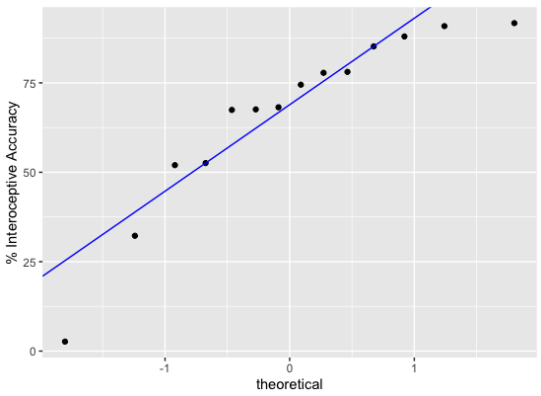
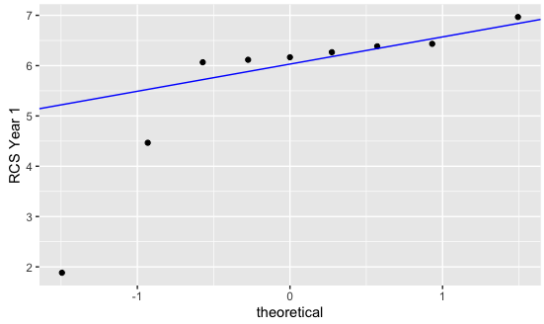
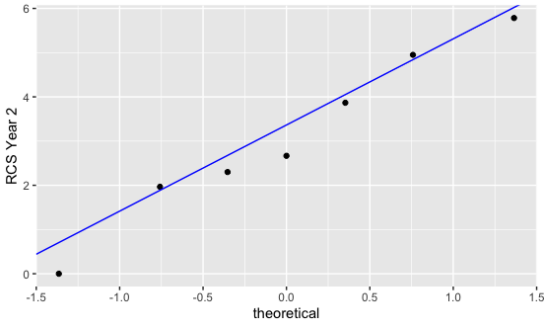


Figure 18. *Q-Q plots assessing the normality of data distribution for reported confidence scores (RCS) in each year of training subgroup*

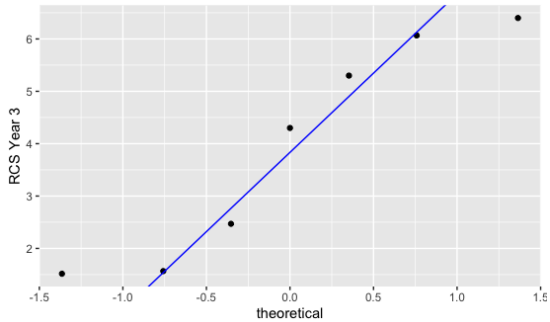
Year 1



Year 2



Year 3



Year 4

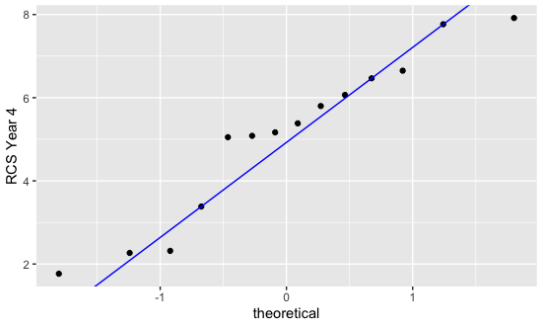
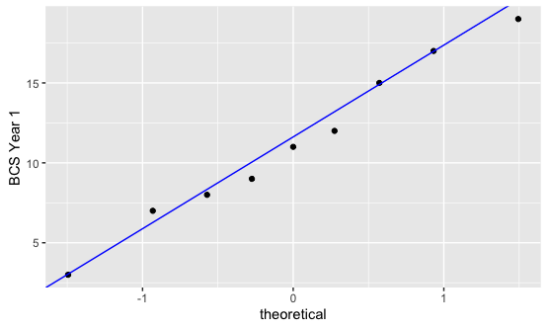
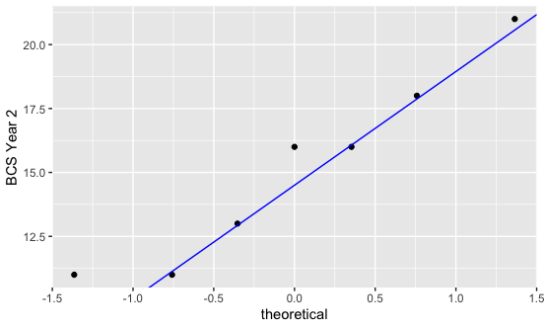


Figure 19. *Q-Q plots assessing the normality of data distribution for body-centred countertransference scores (BCS) in each year of training subgroup*

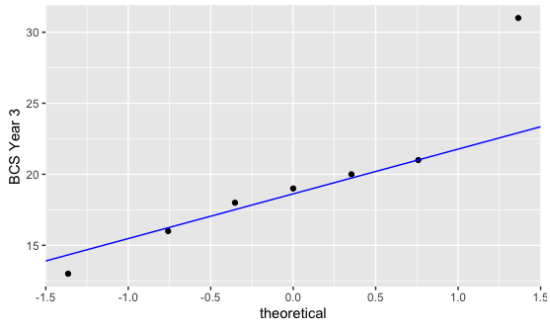
Year 1



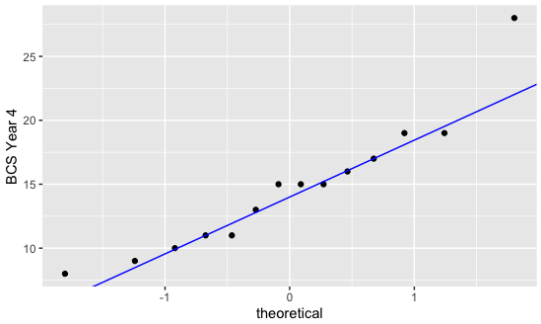
Year 2



Year 3



Year 4



Appendix D: supporting statistical analysis, prediction 4.

Figure 20. *Scatter-graph exploring interoceptive accuracy (IAc) and body-centred counter-transference scores (BCS)*

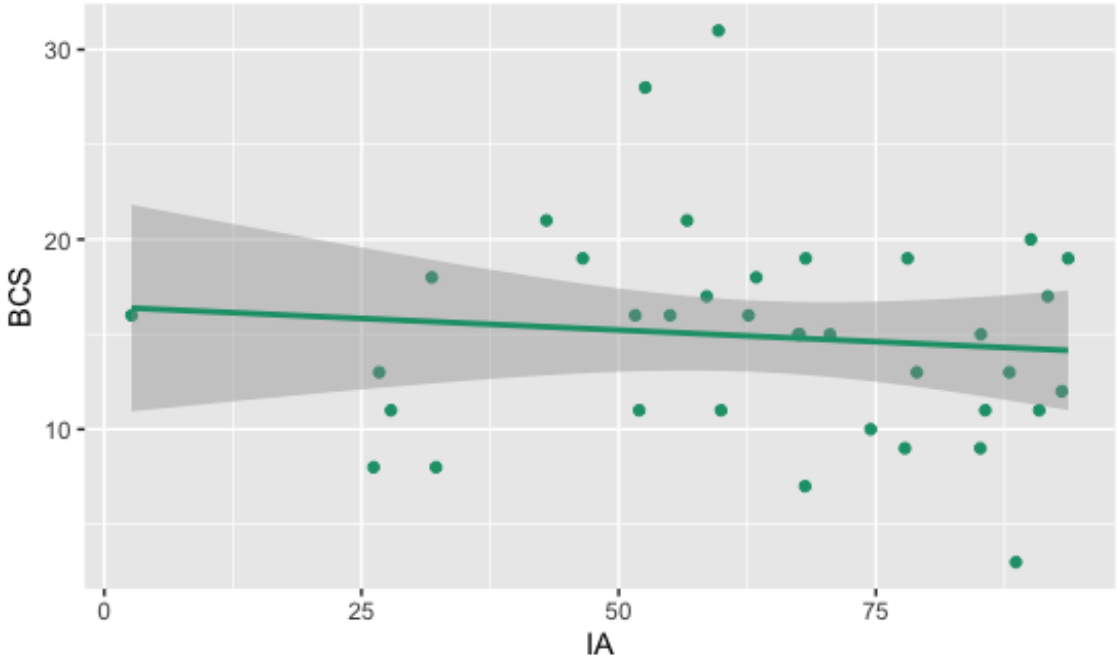


Figure 21. *Scatter-graph exploring reported confidence scores (RCS) and body-centred countertransference scores (BCS)*

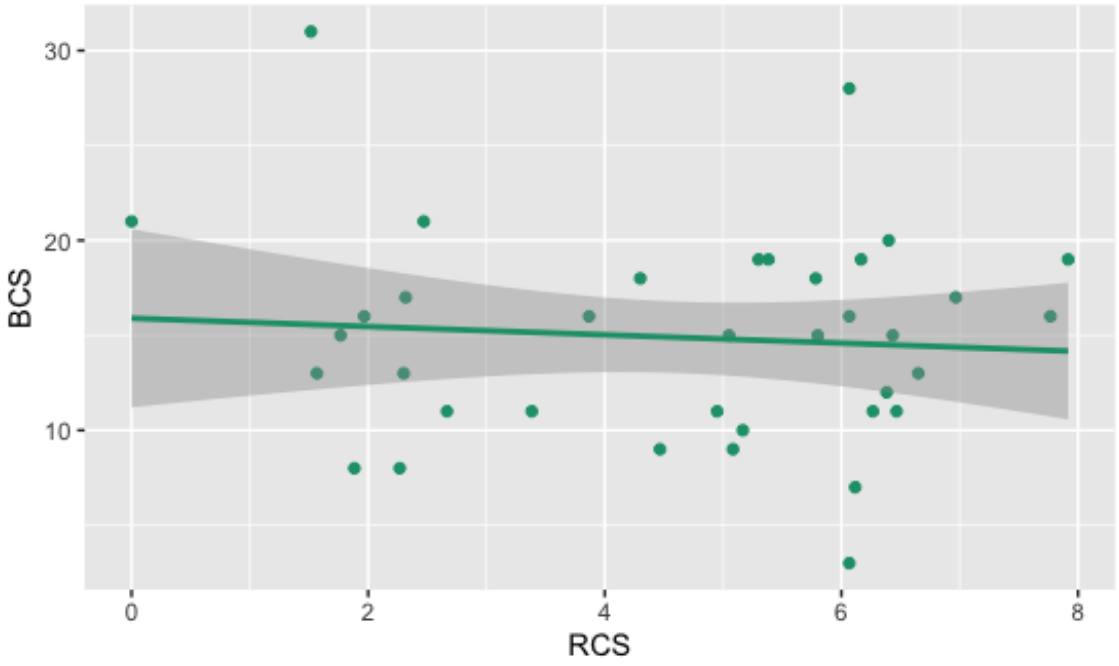


Table 18. *Simple regression does interoceptive accuracy (IAc) predict body-centred countertransference (BCS)?*

Variable	Estimate	P value	Standard error	Confidence interval at 2.5%	Confidence Interval at 97.5%
Intercept	16.447	0.000	2.784	10.796	22.099
IAc	-2.447	0.557	4.130	-10.831	5.937

Adjusted R-squared: -0.0184

p-value: 0.557

IAc is not shown to predict BCS (Table 22), as no statistically significant relationship is identified between these variables.

Table 19. *Simple regression, does reported confidence score (RCS), predict body-centred countertransference (BCS)?*

Variable	Estimate	P value	Standard error	Confidence interval at 2.5%	Confidence Interval at 97.5%
Intercept	15.900	0.000	2.311	11.209	20.598
RCS	-0.218	0.637	0.458	-1.148	0.712

Adjusted R-squared: -0.022

p-value: 0.637

Table 23. shows that RCS does not predict BCS, as no statistically significant relationship is identified between these variables.

Appendix E: supporting Information in the Analysis of the Qualitative Countertransference Questionnaire

Table 20. *Definitions of recurring terms in Question 1 and the number of participants using them.*

Verb	Definition (OED, 2019)	Number of participants using this term
Response	'An action or feeling caused by a stimulus or influence; a reaction'	16
Reaction	'The influence which a thing, acted upon or affected by another, exerts in return on or upon its source, or in turn upon something else. Often opposed to action.' And; 'More generally: any response to an event; something done, felt, or thought in response to a situation, statement, etc. (Now the principal general sense.)'	7
Evoke	'To call (a feeling, faculty, manifestation, etc.) into being or activity. Also, to call up (a memory) from the past.'	4
Arouse	'To stir up into activity, excite (principles of action, emotions, etc.)'	2
Provoke	'To incite or urge (a person or animal) to an action, state, etc.; to stimulate to action; to rouse, prompt, spur on.' [And] 'To stimulate or induce (a physical action, reaction, condition, etc.); to give rise to, bring about.' [And] 'To excite, stir up, arouse (a feeling or action); to give rise to, call forth, prompt. '	2
Elicit	To draw forth, evoke (a response, manifestation, etc.) *from* a person.	1

Table 21. *Complete list of feeling states identified as resulting from Question 2 of the Countertransference Questionnaire*

Feeling state: described as emotional or bodily	**Participants reporting this in their description of a countertransference experience**
Cut off	2
Disconnected	1
Panic	3
Anxiety	2
Excitement	1
Boredom	1
Dismissive	1
Scared/fear	3
Terror	1
Horror	1
Shocked	1
Sadness	5
Isolation	1
Regret	1
Shame	1
Humiliation	1
Awkward	1
Uncomfortable	2
Loss	1
Anger	3
Irritation	1
Agitation	1
Pain	1
Harshness	1
Meanness	1
Despair	1

Overwhelmed	2
Tearful/cry	2
Tiredness/sleepiness	4
Inadequacy	1
Powerlessness	1
Uselessness	1
Smallness	1
Denigrated	1
Bossed/controlled	1
Headache	1
Hunger	1
Loss of speech	1
Raised heart rate	1
Rigidity	1
Frozen	2
Cold sweat	1
Sick to stomach	1
Sadness in stomach	1
Maternal feeling	1
Paternal feeling	1
Warmth	1
Coughing	1
Mindlessness	1
Distracted	1

Appendix F: further describing interoceptive accuracy (IAc)

Table 23. *Participants with IAc scores of 67 % and above (n.19)*

ID	Age	Year of Training	Interoceptive Accuracy	SD	Range Min	Max
4	51	4	0.917	0.052	0.834	0.985
7	32	1	0.851	0.138	0.65	0.987
8	53	4	0.681	0.080	0.611	0.815
10	40	1	0.930	0.118	0.691	0.994
13	34	4	0.744	0.142	0.52	0.931
16	47	4	0.675	0.135	0.542	0.867
18	54	1	0.705	0.134	0.546	0.882
19	49	1	0.681	0.115	0.478	0.837
23	32	4	0.852	0.197	0.571	1
24	34	3	0.900	0.030	0.867	0.936
26	32	4	0.908	0.122	0.676	0.997
27	32	4	0.879	0.080	0.771	0.980
29	49	1	0.681	0.115	0.478	0.837
34	37	2	0.856	0.124	0.704	1
38	33	1	0.886	0.087	0.726	0.986
43	33	4	0.780	0.144	0.620	1
45	39	4	0.778	0.126	0.585	0.894
48	28	2	0.789	0.259	0.285	0.993
49	44	3	0.936	0.020	0.92	0.976

.

Table 24. *Participants with IAc scores of between 40 – 66.9 % (n.12)*

ID	Age	Year of Training	Interoceptive Accuracy	SD	Range Min	Max
1	40	3	0.597	0.114	0.419	0.774
2	55	3	0.566	0.090	0.492	0.741
12	40	2	0.549	0.216	0.24	0.857
14	33	4	0.525	0.134	0.324	0.724
17	33	1	0.585	0.088	0.48	0.673
20	51	2	0.429	0.280	0.171	0.911
21	44	2	0.633	0.117	0.494	0.845
33	39	2	0.599	0.125	0.412	0.736
35	31	3	0.626	0.094	0.539	0.789
36	30	2	0.516	0.101	0.379	0.69
42	55	1	0.465	0.102	0.350	0.627
44	45	4	0.519	0.062	0.444	0.616

Table 25. *Participants with IA scores of 40% and below (n.6)*

ID	Age		Year of Training	Interoceptive Accuracy	SD	Range Min	Max
6	40		3	0.318	0.191	0.135	0.676
22	32		1	0.261	0.085	0.159	0.391
25	27		1	0.278	0.097	0.181	0.441
32	51		4	0.026	0.435	-0.71	0.481
37	41		4	0.322	0.028	0.292	0.358
41	31		3	0.267	0.043	0.209	0.316

A Reflection on Writing for the Clinical Research Portfolio

Introduction

In the reflection that follows I will give an account of my experience of writing for the Clinical Research Portfolio of the Professional Doctorate in Child and Adolescent Psychoanalytic Psychotherapy. The portfolio incorporates a Clinical Case Study and a Research Dissertation. The inclusion of these two, distinct (yet in my experience intimately related) parts is arguably representative of both a tension and an opportunity within the training programme for Child Psychotherapists; and, more broadly for the profession as a whole. This tension lies, within the deeply *subjective*, interpersonal, clinical work with children, young people and their families (represented by the Clinical Case Study) and an engagement with a contemporary health service, and a wider discourse of academic research which seeks to evidence the *objective* efficacy of treatment (the Research Dissertation).

Here I will share the challenge and the richness of my experience of writing within this tension, keeping in mind both papers included within the portfolio. I will endeavour to weave words that will create a remembrance spanning over four and a half years, from the beginning to the end of my training.

Background

Child Psychotherapy is arguably unique amongst psychological therapies for children in the centrality of place that it gives to the internal world, to unconscious process and dynamic mental life - phenomena difficult, if not ultimately impossible to measure with the current tools of supposed objective empiricism. Child Psychotherapists have nonetheless long sought ways to try to know and understand the psychical. For example, through the development of the practice of close observation (Bick, 1964; Rustin, 2006) which is at the core of child psychotherapy training; and in an active engagement with child development research (Music, 2011).

The assertion that unconscious mental processes influence who we are and what we do is fundamental to psychoanalysis, which it has long been argued, can be considered as existing in the realms of both Art and Science. Reflecting on Freud's understanding of the psychoanalytic method, French (1958) suggests:

> *'…we realize that what he [Freud] is describing is an intuitive art, not a scientific procedure.*
>
> *Still we should not distinguish too sharply between our art and our science. Scientific investigation, too, is an art, requiring imagination and scientific intuition. The distinguishing feature of scientific investigation is not that it*

> *should be unimaginative but rather that it tries systematically to check its intuitive insights by objective and critical examination of the available evidence.'* (French, 1958, p.198)

At the heart of my reflection is the philosophical idea that a hard, dualistic distinction between *objective* and *subjective* knowledge is 'untenable' and that rather a 'spectrum of subjectivity' characterises human efforts know and to understand (Moore, 2012). In the quote above, French identifies 'imagination' to be key to both artistic and scientific endeavour. Moore (2012) too, basing his argument on the work of philosopher John Locke, argues that an act of imagination is always the matrix of scientific enquiry (no matter how objectively empirical investigation is then conceived and enacted). And, that imagination - belonging as it does to the mind of an individual - is necessarily and always subjective.

Parallel Processes

Two processes run in parallel from the outset of my Child Psychotherapy training – one relates to the Clinical Case Study and the other the Research Dissertation.

The first process

Prior to commencing the training, I was employed as an Assistant Child Psychotherapist, in an Infant Mental Health Team. Within this capacity I saw

individual patients on a weekly basis. I began to see Bea towards the end of my Assistant Year, at which time, she was four years old. I continued to work with her throughout my training. Bea attended for treatment on a weekly basis for nearly two and a half years before coming into 'intensive' psychotherapy. This involved her attending three times a week, which she did for eighteen months. Bea was eight when our work ended.

Through her therapy, Bea was a hugely important part of my experience; a significant presence within the clinic and in my mind. In my fourth year of training, Bea became the case which I was to write about for my Clinical Case Study, but for the majority of the time that we worked together this fact was unknown to me.

The second process

By contrast, thinking about the Research Dissertation was explicit from the outset of the training. The research project carried great gravitas and provoked much anxiety amongst us as a cohort of trainees. As the first cohort to undertake the Professional Doctorate with research as in integrated element, doubts were articulated amongst the group about how the undertaking was to be achieved - alongside the demands of day to day clinical work. There was much concern about being 'the test-case'. To some extent I was sheltered from the worst of this anxiety by my relative naivety regarding the demands of the training and by a general inclination to academic pursuits. The research element of the training programme provided a point of

security, or balance, for me – an opportunity to engage in a more familiar way of thinking, an outlet for testing, scrutiny and doubt, which at times could be more difficult to articulate publicly in the clinical seminars.

Weekly research teaching ran throughout the first two years of training, providing the opportunity for us to familiarize ourselves with current research methodologies, their benefits and limitations. Towards the end of the second year, research proposals were formulated and submitted for consideration.

In contrast to my work with Bea and to the Clinical Paper which I would write, preparation and planning for the research project was thus overt and conscious from the beginning.

I will now continue to give an account of the parallel processes that I have begun to describe.

The Research Proposal

My original research proposal intended to look for evidence of an 'imagined infant' in antenatal psychotherapy. Although the proposal was approved in its initial stages, changes in my clinic placement made it impossible to undertake. I had to begin again.

It is with curiosity that I reflect now upon my initial idea, at the point of completing a different project; noting, that in my original title *imagination* was foregrounded in the research question. In the research project that I have actualised, my own imagining has been central, as I have attempted to investigate potential connections between the neuroscientific concept of interoception (an individual's awareness of their own internal body-state, e.g. heartbeat, breathing, gastrointestinal activity (Pollatos et al. 2007) and the psychoanalytic idea of countertransference (the experience of the analyst in response/reaction to a patient (Heimann, 1950)) – in essence, to link an individual's awareness of their own internal body-state with their potential 'felt' response to the presence of another. Not perhaps so wholly different, after all from my initial wish to investigate how an expectant mother might experience the presence of her baby in a way that incorporates physical and psychological experience.

Methodologies

While conceptual parallels can, on reflection, be drawn between the research I initially proposed and that which I have undertaken, my choice of methodologies was markedly different. I pause to wonder about what influences a methodological choice. Contemporary empirical research frameworks provide structures and sets of guidelines for 'successful' research, which may include the identification and bracketing of the subjective experience of the researcher - however I wonder if the

motivations of the researcher's imagination can really be fully known and worked out in the pursuit of 'empirical' endeavour?

In my original proposal I had planned to use a qualitative approach, a 'Thematic Analysis' (Braun & Clarke, 2006)) to make a detailed examination of audio recorded clinical sessions. The data for the study proposed would have arisen from clinical encounters with participating patients. By contrast, in the research I have in fact undertaken, I have engaged in a mixed-methods study, incorporating a theoretical review of existing research, an experimental design drawn from neuroscience and the collection of both quantitative and qualitative data by questionnaire.

The experimental element of the study has involved the application of a well-established test of interoceptive accuracy (the extent to which an individual is able to accurately perceive their own body-state, specifically heartbeat), the Heartbeat Counting Task[13] (Schandry, 1981) to a sample of Child Psychotherapy Trainees. The rationale being that interoceptive accuracy has been linked to experience of emotion (Weins,2000) and observation and understanding of emotional experience are arguably at the heart of child psychotherapy training.

[13] The Heartbeat Counting Task involves asking an individual to try to perceive and count their own heartbeat without feeling for a pulse, over a series of discrete time periods. At the same time, an objective, measure of heartrate is undertaken. The difference between perceived heartbeat and actual heartrate constitutes the measure of interoceptive accuracy.

Along with the Heartbeat Counting Task I made an examination of these trainees' experiences of countertransference; through the completion of two questionnaires. One questionnaire sought to gather individual's understanding and experiences of countertransference, and the value they attributed to the concept in general; while the other pertained specifically to ascertaining the frequency with which symptoms of embodied countertransference[14] had been experienced by participants. The first of these questionnaires could be broadly considered to be qualitative in nature (examining the subjective experience of the phenomena of countertransference through open questions) while the second questionnaire and Heartbeat Counting Task represent quantitative methods of data collections.

My work with Bea and its codification into the Clinical Case Study, can also be considered research, different again from both that which I considered in my initial research proposal, and from the study that I have actually undertaken. Debate exists as to how Case Studies are best understood within the theoretical framework of empirical understanding that constitutes contemporary 'research' (Starman, 2013). Some argue that Case Studies represent their own distinct *type* of qualitative research (Baxter & Jack, 2008), whilst others hold them to be a *methodology* (George & Bennett, 2005).

This debate of categorisation is also one which considers value; and the extent to which individual Case Studies can be considered research evidence for the phenomena to which they testify. Case Studies are undeniably a significant phenomenon within the Social Sciences and indeed Medicine (Starman, 2013). In psychological research, the approach dates back over a hundred years (Freud, 1905). Case studies necessarily entail a high degree of subjectivity and as such the epistemological perspective from which they are being viewed will dictate the extent to which this is conceived to be a strength or a weakness.

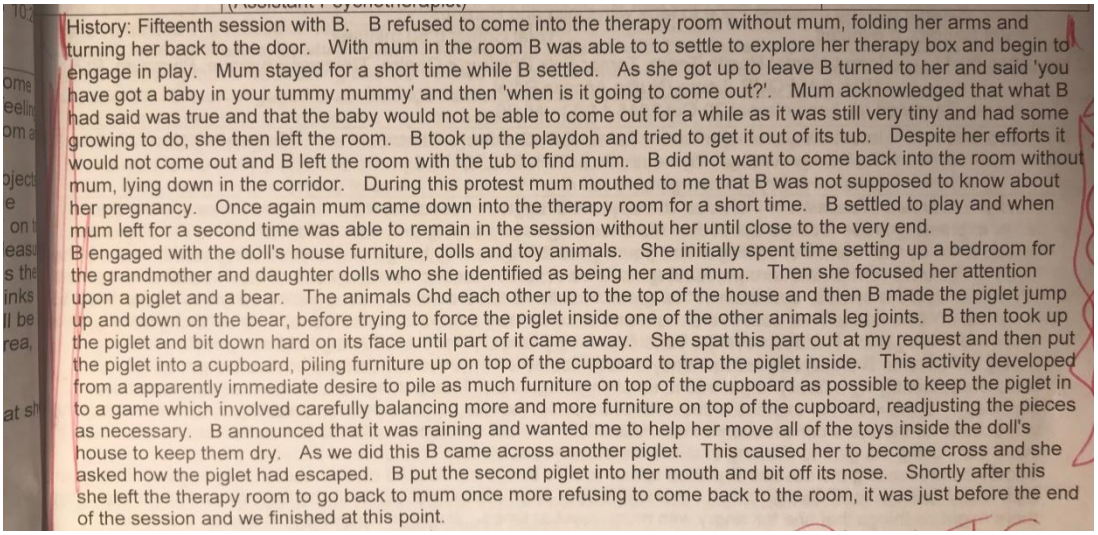
In the particular example of the Clinical Case Study written for the Child Psychotherapy, Clinical Research Portfolio, the task was to give an account of a long-term, intensive psychotherapy; and to provide a critical evaluation, demonstrating links between clinical evidence, theoretical interpretations and conclusions drawn. The experience of a specific relationship and its development over time was therefore central to the task and as such subjectivity was a strength within the approach, to be highly valued.

Data collection

The parallel processes involved in the writing of the Clinical Research Portfolio, can be traced retrospectively in the way in which 'data' was collected/gathered for its different elements.

Working with Bea, as part of my regular practice I wrote detailed session notes. These were written with a motivation to remember and to understand through reflection. Sometimes, the notes were for consideration later in clinical supervision, and as such could inevitably carry within them my questions and anxieties about the work and sharing it with someone else. Often however these session notes were for me alone. I reflect on how I would sometimes struggle to write up my case-notes after a long day of clinical work. The effort to persevere with this has been retrospectively rewarded, as I had a rich and detailed set of reflections to work with when I came to use this material for my case research.

Figure 22. *An example of the material that would become the 'data' for my Clinical Case Study. This material was written without the explicit and conscious intention that it would ever be used for any other purpose*.



History: Fifteenth session with B. B refused to come into the therapy room without mum, folding her arms and turning her back to the door. With mum in the room B was able to to settle to explore her therapy box and begin to engage in play. Mum stayed for a short time while B settled. As she got up to leave B turned to her and said 'you have got a baby in your tummy mummy' and then 'when is it going to come out?'. Mum acknowledged that what B had said was true and that the baby would not be able to come out for a while as it was still very tiny and had some growing to do, she then left the room. B took up the playdoh and tried to get it out of its tub. Despite her efforts it would not come out and B left the room with the tub to find mum. B did not want to come back into the room without mum, lying down in the corridor. During this protest mum mouthed to me that B was not supposed to know about her pregnancy. Once again mum came down into the therapy room for a short time. B settled to play and when mum left for a second time was able to remain in the session without her until close to the very end.
B engaged with the doll's house furniture, dolls and toy animals. She initially spent time setting up a bedroom for the grandmother and daughter dolls who she identified as being her and mum. Then she focused her attention upon a piglet and a bear. The animals Chd each other up to the top of the house and then B made the piglet jump up and down on the bear, before trying to force the piglet inside one of the other animals leg joints. B then took up the piglet and bit down hard on its face until part of it came away. She spat this part out at my request and then put the piglet into a cupboard, piling furniture up on top of the cupboard to trap the piglet inside. This activity developed from a apparently immediate desire to pile as much furniture on top of the cupboard as possible to keep the piglet in to a game which involved carefully balancing more and more furniture on top of the cupboard, readjusting the pieces as necessary. B announced that it was raining and wanted me to help her move all of the toys inside the doll's house to keep them dry. As we did this B came across another piglet. This caused her to become cross and she asked how the piglet had escaped. B put the second piglet into her mouth and bit off its nose. Shortly after this she left the therapy room to go back to mum once more refusing to come back to the room, it was just before the end of the session and we finished at this point.

By contrast, the collection of data for my Research Dissertation was literally by design; and by necessity, was in accordance with the ethical application that I had submitted in order to conduct the project. Data collection was thus a considered and deliberately constructed process, albeit within the pragmatic limitations that my attempt to engage as many Child Psychotherapy Trainees studying at the Tavistock Centre (and present on a Wednesday for teaching – this being a factor in my capacity to access them as a sample population) entailed. Limiting factors included a need to balance conducting the study with my own attendance of teaching sessions, the availability of rooms in which to undertake data collection and the availability of the research assistant who supported me in the data collection process.

I was consciously motivated in my data collection efforts by the need to maximise the number of participants that could be recruited to the study and by the need to complete the process within a limited period of time.

The process of undertaking data collection alongside the research assistant made the experience unexpectedly companionable. Furthermore, I found that the data collection process itself provided me with an opportunity to engage with trainees whom I had not previously had occasion to meet. This added to the unexpected feeling that the data collection experience was something social and surprisingly

enriching in a relational way. I was struck by the lively curiosity that participants brought to the study and the positivity of this interest. It seemed to me that the study generated an interest and excitement, which I had not anticipated.

With hindsight, the sociability of the experience of data collection for the Research Dissertation was very different from my clinical work with Bea – where I felt keenly and frequently alone. Bea's parents, although dedicated in ensuring her attendance of sessions, were themselves largely and sometimes, challengingly, absent from the work. Supervision offered some ante-dote to this and an important opportunity for contact and an opportunity to share something of the weight of responsibility I felt in my work with Bea.

Analysis

In some sense, analysis of the 'data' that was drawn from my experience of being with Bea, was continuous and simultaneous with the work itself. It took place in the activity of writing from memory my process notes, in reflecting upon our interactions, through supervision and indeed in my own psychoanalysis. However, from the time that I made the decision to write about Bea for my Clinical Case Study these processes intensified significantly and took on a new character. After all, a new motivation was present – to tell Bea's story and that of the work, with an integrity that could encompass complexity, but also a coherence that would enable an unknown other to read and understand the therapy's development over time.

I gathered together all of the notes that I had written for Bea and began to work through them, chronologically. There were well over a hundred thousand words to read, it took time and considerable emotional effort. It was moving to go the beginning of Bea's therapy, to be reminded of things that I had forgotten, such as meeting Bea for the first time – recounted below:

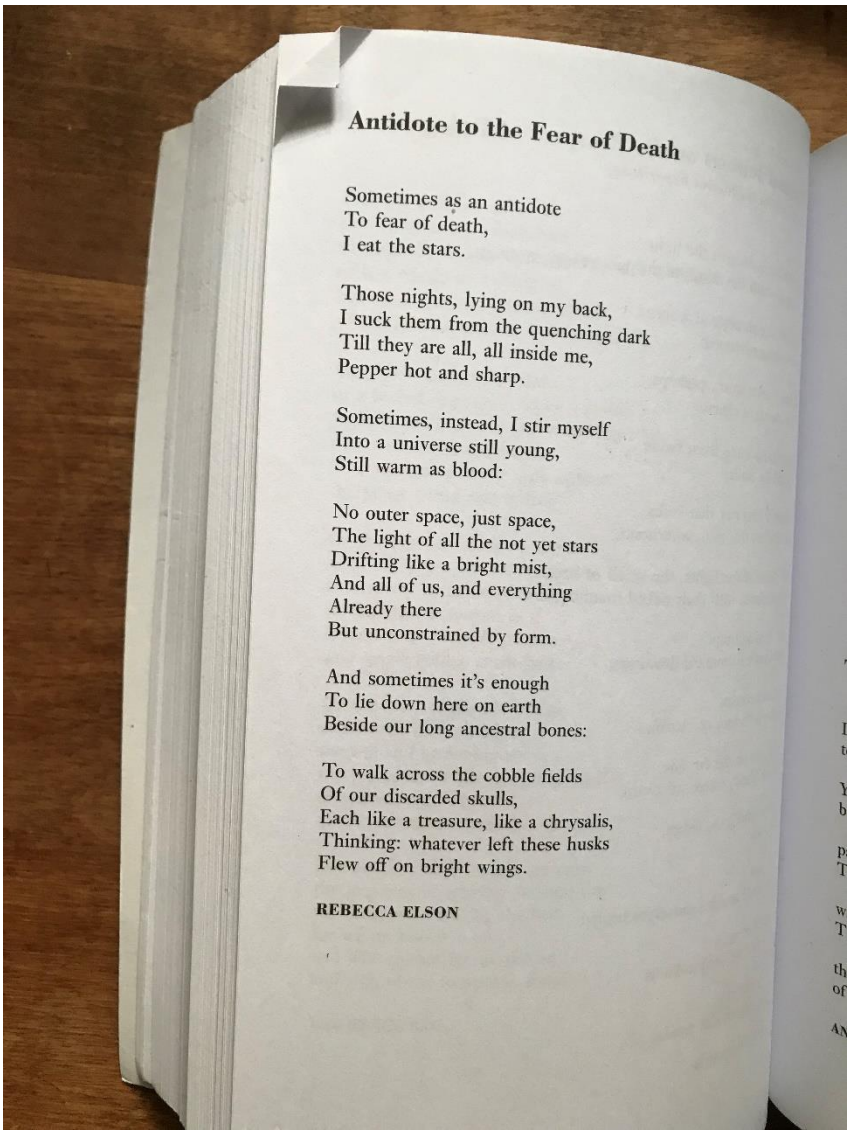
> *… I caught my first glimpse of Bea through the glass panel of the waiting room door. She was standing, looking in seriously at me. Bea was unexpectedly beautiful, with large, saucer like eyes and a full mouth. I smiled, at her through the glass. She continued looking at me, her expression not giving an inch. I opened the door and said: 'hello, ready to come through?' Bea began to walk ahead of her mum, or better – to march, through the door. Passing me, Bea stopped and glared up, her great, grey/green eyes fixing me intently. She asked frankly and firmly: 'where's your baby?' Then without waiting for an answer, marched directly on (as if she knew exactly where to go) … mum responded, with knowing amusement: 'here we go… she's started already'…*

It was affirming to rediscover vivid recollections, stored in my mind's eye as well as codified in typed copy. I noticed differences and continuities between the Bea from before and the Bea I continued to meet with three times weekly. I noticed differences and continuities in myself too.

Bea's therapy was coming to its end as I wrote my Clinical Case Study, this added to the challenge of writing and of parting. In retrospect I think this very live experience of ending added to the passion with which I wrote my paper, which I now recognize as curiously mirroring something of Bea's character (unconscious as I wrote). Re-reading the Clinical Case Study six months after its completion and after the ending of Bea's therapy, I observe things now which I was perhaps too close to see at the time.

Figures 23 & 24 offer a visual illustration to support my reflection upon the difference in the work of 'analysis' entailed in the Clinical Case Study and that of the Research Dissertation. Figure 23 pertains to my writing about Bea. It is a photograph of a poem by Rebecca Elson, which as I re-encountered my work with Bea through the analysis required of the Clinical Case Study, became an important part of my frame for understanding. I came to see Bea as a child who continued to *'dare to disturb the universe…'* (Elliot, 1915) despite the trauma that she had experienced. This, as I saw it, was both her strength and her vulnerability. I understood Bea as a little girl who's highly omnipotent defences were a balance to the proximity to death she had known (Bea had been physically harmed by her parents in earliest infancy and nearly died. There had been resulting injury to her brain with on-going sequalae).

Figure 23. *Image of a poem which came to provide a frame of reference to my writing for the Clinical Case Study*



Antidote to the Fear of Death

Sometimes as an antidote
To fear of death,
I eat the stars.

Those nights, lying on my back,
I suck them from the quenching dark
Till they are all, all inside me,
Pepper hot and sharp.

Sometimes, instead, I stir myself
Into a universe still young,
Still warm as blood:

No outer space, just space,
The light of all the not yet stars
Drifting like a bright mist,
And all of us, and everything
Already there
But unconstrained by form.

And sometimes it's enough
To lie down here on earth
Beside our long ancestral bones:

To walk across the cobble fields
Of our discarded skulls,
Each like a treasure, like a chrysalis,
Thinking: whatever left these husks
Flew off on bright wings.

REBECCA ELSON

'Antidote to the Fear of Death', by Rebecca Elson in Being Human (2011)

It is a point of curiosity to me, identified through reflecting upon the different elements of the Clinical Portfolio, that my choice of research project has been to create a study that looks to draw links between the discipline of neuroscience which predominantly considers 'brain' and that of psychoanalysis with its focus upon 'mind'. I wonder now about how my work with Bea, might have influenced this – knowing that the challenges she faced could be seen to relate to both.

Figure 24 is an image in marked contrast, it is a screenshot taken from my work with 'R' - shorthand for '*The R Project for Statistical Computing'. 'R'* is the statistical software that I have learned to operate in order to analyse the data arising from the experimental aspect of my Research Dissertation. 'R' is freely available online, it is constituted of statistical packages which can be downloaded for use with any given set of research data. In order to make downloaded packages work it is necessary to write code for 'R', incorporating within this code reference to the data you wish to examine. Analysis of my research data (at least that data pertaining to the Heartbeat Counting task which I had asked trainees to undertake) not only entailed grappling with statistics – figuring out what the appropriate tests to run would be – but also learning a new language, the language of R and of computer coding.

Gradually, I developed a repository of my own codes, a kind of vocabulary which allowed me to talk 'meaningfully' to the computer. This took time and patience, but

meant that gradually I was able to work through the numeric data which my study had generated.

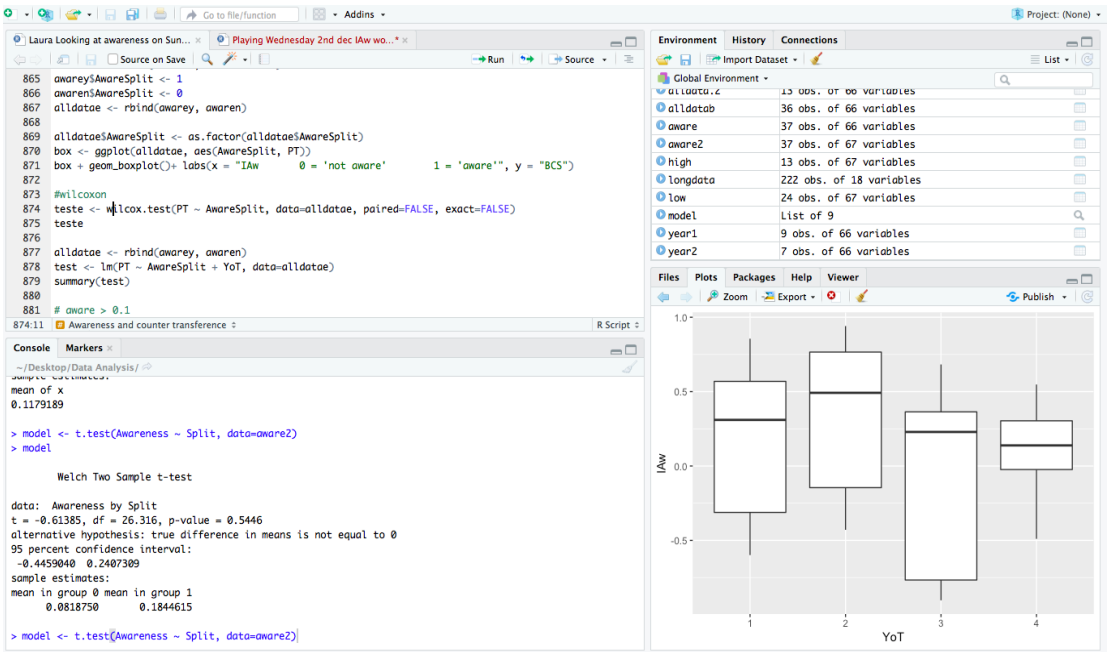


Figure 24. *An illustration from my statistical analysis using R*

Results

The results of my Clinical Case Study and Research Dissertation are, like the methodologies from which they are derived, markedly distinct. Indeed, I have wondered whether it makes sense to speak of 'results' at all when considering my work with Bea[15]. However, I do think that there were identifiable developments over the course of her therapy – which whilst they cannot be 'proved' as 'results'

[15] The generation of authentic 'results' or measurable 'outcomes' is a significant conundrum for Child Psychotherapy when set within contemporary CAMHS (Child and Adolescent Mental Health Service).

relating certainly and solely to the psychotherapeutic work, nonetheless merit consideration, and have potential use in understanding my future clinical work.

One example of Bea's development became evident to me in the context of a school meeting, three years after Bea began treatment and roughly a year into her intensive therapy. Bea's teaching assistant reflected: '*Bea can now be trusted with a glue stick – indeed can be trusted to hand them out to her class!* The teaching assistant spoke with warmth and affection; I recognized the child about which she spoke, the phenomena she was reporting – Bea could indeed now be trusted to use the glue stick for something creative, rather than eating it – or smearing it all over the walls; and the tone of her speech. The result was not just Bea's capacity to use the glue stick for its 'proper' purpose but also her capacity to build a relationship in which she could be known.

The results of my Research Dissertation, particularly those related to the Heartbeat Counting Task, report on more abstract relationships those measured between 'variables', for example: interoceptive accuracy and study participants' year of training. Results from the two countertransference questionnaires demonstrate between them: the frequency with which trainees experience symptoms of bodily countertransference and what symptoms are most common; and provide evidence of trainees' experience and understanding of the phenomena of countertransference in general. These questionnaires, whilst still considering the

conceptual, and trainees' relationship to an idea offer something more overtly relational in a subjective sense – in so far as the individual trainees are reporting upon their individual experience.

Summary

The two tasks of the Clinical Research Portfolio can be seen, with hindsight, to have coexisted from the start of the training. In the Clinical Case Study through the clinical work itself and the Research Dissertation as an overtly conceived academic undertaking.

These tasks have required an engagement with distinct disciplines of mind and practical methods of execution. The extent to which each task is considered a valid form of 'research' is determined by how we perceive, conceive of and value 'scientific method'. The concept of 'science' itself being governed by our philosophy, individual and societal (the two arguably, inextricably intertwined).

The strength of the Clinical Case Study lies in its inherently rich and reflexive nature in the depth and detail of the specific relationship and experience that it describes as occurring over time. These are also its limitation however, in so far as learning from a single case cannot necessarily be translated for a wider audience - although I would wish to argue that it might become a starting point from which to further explore learning that might be more widely applicable and valued.

By contrast the Research Dissertation, has employed methodological approaches that seek to establish more abstract and 'objective' understanding around the phenomenon under investigation – their strength lying in the potential for application beyond my individual learning. The potential weakness here lies in the challenge of conveying the profound intersubjective experiences of countertransference within an abstract (no longer relationship specific) form. Some attempt to mitigate for this was made in including a qualitative aspect to the project - providing trainees with the opportunity to reflect more subjectively about their experiences of countertransference – however the depth of detail provided in the limited subjective clinical vignettes returned highlights the challenge inherent in this element of the research.

Conclusion

My Research Dissertation is located at the axis of two distinct frames of reference: a neuroscientific discourse of empirical scientific method, grounded in observation and testing of the physical, and the psychoanalytic tradition, with its own language and methodology. Reflecting on my experience of writing for the Clinical Portfolio as a whole I notice how my Research Project and Clinical Case Study might be seen to run on parallel axes - reflecting the potential for splitting between objective and subjective, physical and psychical - but might also, by their inclusion together in one place, represent an attempt to draw distinct processes together as a whole.

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