Development and Validation of the Mentalising Profile Q-sort (MQS)

Wilson Adolfo Gallego Hoyos

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Declaration

I, Wilson Adolfo Gallego Hoyos, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Abstract

The last couple of decades have seen a significant increase in the fields of research and clinical practice inspired by the theory of mentalising. Mentalisation, the capacity to understand one's own and others' behaviour in terms of mental states, is considered to be a "defining human social and psychological achievement" (Fonagy & Allison, 2014). The dialogue between mentalising theory and other fields such as developmental psychopathology or the neurosciences has added complexity and nuance to the understanding of this mental capacity.

However, there is a gap in the research literature concerning the assessment of mentalising during therapeutic sessions. This assessment has often been done at the beginning and end of the treatment, missing session-to-session variations and the possibility to inquire about a mentalising style and its outcome in psychotherapy.

This thesis describes the development and preliminary validation of the Mentalising Profile Q-set (MQS), an observer-rated measure that aims to bridge the gap between scientific research and clinical observations by describing the mentalising process of patients undergoing psychotherapy in a jargon-free language. The MQS focuses on the patient and provides a picture of the mentalising process in relation to its four polarities and pre-mentalising modes of experience.

The data used in this research was derived from the Randomised Evaluation Study of Dynamic Interpersonal Therapy (REDIT) and the Tavistock Adult Depression Study (TADS), two trials that worked with depressed patients, although with differences in clinical characteristics.

The preliminary results suggest that the MQS is an instrument that can differentiate groups of individual mentalising profiles and their likely effect on therapeutic outcomes, as assessed by the HRSD-17, at the beginning of treatment.

The MQS contributes to the extant literature on assessment instruments and, at the same time, expands on the role of the capacity to mentalise in the therapeutic outcome.

Impact Statement

Mentalisation, the implicit or explicit perception or interpretation of the actions of the other or oneself as intentional, i.e. mediated by mental processes (Bateman and Fonagy, 2018), is considered to be a breakthrough in the understanding of personality pathology in particular, and of mental disorders in general. Research has found that when social experiences are not considered in terms of mental states, an inhibition of the mentalising capacity due to stress or arousal may be occurring.

Given the spread of this approach within the academic and clinical community, instruments that can bridge what is being advanced in the research world with what is being found in the clinical practice are needed as ways to substantiate research findings and, at the same time, to improve the clinical approach to a specific patient or group of patients.

The Mentalising Profile Q-set (MQS) offers a double benefit for the mentalising community. First, as a research tool, the MQS can provide information about specific groups of patients and how their mentalising profiles are related to symptomatologic outcomes. This could develop into a means of studying different approaches to psychotherapy and the role that mentalising plays in each of them. More importantly, it could help to answer the question of whether mentalising is a common factor in all therapeutic modalities. It will also help to understand what kind of approach works better for whom, and conversely what does not work for whom. Understanding these questions would help policy makers to build a case for mentalisation-based approaches in the public sector, improving the use of resources from mental health providers, and offering a stronger evidence-based grounding to the delivery of this treatment approach.

Second, as a clinical instrument, the MQS allows us to assess a patient's preferred method of mentalising and also understand what aspects need to be supported in order to foster change, therefore tailoring the intervention to the specific need of a single patient and improving the chances of a better outcome.

The MQS can also be used in training programmes, as a way to understand the theoretical constructs behind the different components of mentalising, but in jargon-

free language. Once the concepts and clinical aspects are better understood, the MQS can be used in clinical supervision as a meta-cognitive instrument where the therapist mentalises about the mentalising capacity of the patient in order to tailor the clinical intervention to that specific patient.

In sum, the work presented in this thesis has many potential uses. On a macro-scale, there is policy making and research aspects that could be replicated across geographies and cultures, with the possibility of inter-institutional collaboration. On a microscale, the benefits of the approach could help enhance the wellbeing of the mental health community: both MBT clinicians and their patients.

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Not being a native English speaker, the issue of writing in a language that is not mine has imposed many anxieties. A special thank you to David Lucas who kindly read this thesis and made some comments on how to improve its presentation. The imperfections of the final draft are totally mine.

Having an ocean of distance between my family and myself has taught me too much: I have experienced vulnerability in many forms but I have also recognised my secure base in them. The emotional support provided from the distance by my mother and brother has reinforced in me the idea that what matters is the quality of the relationship and not the quantity of time spent together. The same can be said of all my many friends, who have stayed in touch with the help of technology.

Finally, my husband Tony has provided me with a place that I can call home here in London, an emotional and physical place without which I could have not completed this endeavour. To him I would like to dedicate this thesis.

Introduction

Since the early 1990's there has been a growing interest in the theory of mentalisation, as developed by Fonagy and collaborators and formalised in a more coherent form in their book, "Affect Regulation, Mentalisation and the Development of the Self" (Fonagy, Gergely, Jurist and Target, 2002). Mentalising, a form of imaginative mental activity about oneself and others, where behaviour is perceived and interpreted in terms of intentional mental states (Bateman and Fonagy, 2016), has been used to develop a specific type of treatment for people with borderline personality disorders (Fonagy, Bateman & Bateman, 2011) and is currently applied to different clinical settings and psychopathological conditions (Allen, Fonagy, & Bateman, 2008; Bateman & Fonagy, 2012).

The role of mentalisation in mental health was revealed in the context of the London Parent-Child Project research (Fonagy, Steele, Steele, Moran & Higgitt, 1991), the findings of which supported the idea that, as the relationship between infant and mother is the principal domain where intimate discussions and learning about emotions occur, the quality of their bond would predict the child's understanding of emotions at age 5, 6 and 11 (Steele & Steele, 2011). Therefore, it was hypothesised that the ability of caregivers to empathise with their children, seeing them as a separate individual in possession of their own mind and emotions, would have a direct impact on the understanding that the child acquires about themselves and other people and will influence their mental health for better or worse.

These results led Fonagy and colleagues to propose a developmental model grounded in the growing awareness and understanding that a child has about their mental and social world, and that is achieved through a process of mental maturation with its own specificities. This knowledge allowed a reformulation of borderline personality disorder in mentalisation terms which in time spread to other areas, leading to a view that the inhibition of mentalising capacity is the core of many other psychopathological entities (Bateman & Fonagy, 2018).

With the establishment of a mentalisation-based therapy (MBT), its field of application developed. Today we observe a myriad of treatments that are based on the conception that mentalisation is a multidimensional capacity, closely related to the quality of attachment relationships (Allison & Fonagy, 2016), and that the inhibition of such

capacity is related to psychopathology, as resilience cannot flourish in a mind that cancels mentalisation (Fonagy, Luyten, Allison & Campbell, 2017a and 2017b).

On the other hand, growing literature in psychotherapeutic process research has been suggesting that the approach a clinician uses is less important than the unfolding interaction between therapist and patient. It is in the more relational, interpersonal aspect of therapy that one finds the common factors that make the psychotherapeutic process effective. The "how" of treatment delivery has come to the fore as a prime determinant of whether or not therapy will be successful (Greenberg, 2018).

It has been suggested that mentalising, with its social and interpersonal implications in the clinical setting, is one such common factor in all psychotherapeutic approaches (Fonagy & Bateman, 2008; Jurist & Meehan, 2009; Allen, 2012; Goodman, Midgley, & Schneider, 2016). This claim is supported by four main arguments. First, when a person goes to psychotherapy they are required to exert a conscious, controlled reflection about themselves and others. Second, the attachment system is activated by the therapeutic relationship. Third, clinicians build and rebuild constantly in their own minds an image of the patient's mind, which they try to convey to the patient to help them sense of their mental states. Finally, and closely related to the last point, it is the dyadic nature of therapy that fosters the patient's ability to generate different perspectives in a safe environment (Bateman & Fonagy, 2018).

However, we are still awaiting responses from the research community that would enable us to substantiate such claims. One possibility to help in the construction of robust evidence on this matter is to find a way that allows us to assess the process of mentalising across the many psychotherapeutic approaches.

Q methodology (Stephenson, 1954; Block, 1961, 2008; Brown, 1980; Watts & Stenner, 2012), also known as by-person factor analysis, has been shown to produce useful and reliable measures in the assessment of personality pathology (Block, 1961; Westen and Shedler, 1999a; 1999b) and in the evaluation of the psychotherapeutic process (Jones, 2000). In a field where self-report questionnaires have been predominant (Block, 2008), despite their quite frequent contamination with response bias (Lance, Butts, & Michels, 2006), this approach offers an objective perspective by which an external examiner can to explore what is going on in the clinical setting.

Although calling it a "new" statistical method for conducting research would not be accurate, the fact that Q methodology does not fit properly into the qualitative or

quantitative domains has created some confusion in the research field, with the consequence that it is seldom acknowledged as a research method, and is therefore often misunderstood and underused (Watts, S., & Stenner, 2012).

Nevertheless, important developments in psychotherapy research have used Q methodology as a statistical method to understand the aspects of the clinical setting which seem to be key when considering clinical, social and interpersonal changes, as assessed by different measures. One such development is Enrico Jones' Psychotherapy Q sort (PQS) (2000), which greatly inspired us in our endeavour to devise a measure that enable researchers and clinicians to assess the process of mentalising in actual psychotherapeutic sessions, and to bridge the growing schism between practice and science in the field of psychology (Shedler & Westen, 2010).

The overall purpose of this research is to report on the development of the Mentalising Profile Q set (MQS), an observer-rated scale of mentalising using Q methodology, and to provide some preliminary validation. Q methodology, which will be described in chapter two, will be used as a conceptual and methodological framework to guide the development of the instrument. Our focus will be on patients with chronic depression who participated in the Tavistock Adult Depression Study (TADS) and the Randomised Evaluation Study of Dynamic Interpersonal Therapy (REDIT). The chapters of this thesis are divided into three parts: Part I (Chapters 1 and 2) provides a literature review regarding mentalisation theory and Q methodology; Part II (Chapters 3 and 4) describes the development of the MQS and its use in a by-person factor analysis to derive naturally occurring clusters of patients; Part III (chapters 5, 6 and 7) provides a description of the method used in the validity and reliability of the MQS, and the studies carried out to achieve that.

More specifically, the first part will set the theoretical and methodological grounding for this thesis. Chapter 1 provides a literature review regarding the theory of mentalisation. Following a historical perspective, the chapter presents a review of mentalising theory, including its origins in the attachment tradition and its overlap with other concepts such as mindfulness, psychological mindedness and empathy. Once we provide a clearer picture of the concept and its clinical application, we will discuss how the mentalising approach can inform our understanding of depression and its treatment, providing the background for the justification of the present work.

Chapter 2 presents and discusses the methodology used to develop the instrument presented in this thesis. We examine the concept of Q methodology and the

discussions that followed its presentation by William Stephenson in a letter published in *Nature* in 1935 (Stephenson, 1935a). As Q methodology was conceptualised in relation, but opposed to, traditional factor analysis, we will focus specifically on the difference between Q and R analysis. We then describe how the technique was developed by more contemporary researchers such as Jack Block (1961, 1970, 2008), Enrico Jones (2000) and Drew Westen and Jonathan Shedler (1999a; 1999b). Finally, we critically evaluate the methodology and present some of its limitations.

The second part of the thesis will follow the development of the MQS and its application to a sample of treatment-resistant patients. Chapter 3 reports the first study conducted in the development of the MQS in two parts. Part one follows the development of the items that made up the final Q set, and the testing of face validity through the rating of these items by expert researchers in mentalisation. At the end of this feedback and scoring process a total of 112 out of 134 items were selected. The second part of this study presents the piloting of these items through a study to assess the instrument's reliability and internal consistency using a random sample of patients from the Randomised Evaluation Study of Dynamic Interpersonal Therapy (REDIT). 15 sessions were double rated, with the assistance of a second observer, and an analysis of the Intraclass Correlation Coefficient (ICC) and Coefficient Alpha was carried out to test the internal consistency of the MQS. The results of this study led to a reduction in the number of items from 112 to 71. Those 71 items made up the final Q set, which we named the Mentalisation Profile Q set, or MQS for short.

Chapter 4 describes the rating process of the newly developed MQS with the participants of the Tavistock Adult Depression Study (TADS). We will describe the step-by-step analytic process of Q methodology as we opted for a more contemporary perspective, which will allow us to generate a measure with better psychometric properties. The analysis yielded the presence of three distinct group of patients, both at time 1 (near the beginning of treatment) and at time 2 (towards the end of treatment).

Part three of this research analyses some statistical properties of the MQS. Chapter 5 describes a correlational analysis devised to test the convergent and discriminant validity of the three MQS groups derived in the previous chapter at time 1 of the study: the Reflective, the Easily Overwhelmed Non-Mentalising and the Disconnected patient. Thanks to the robust data collected in the TADS, the MQS is compared with well-established clinical measures such as the Hamilton Depression Rating Scale (HDRS) and the Beck Depression Inventory (BDI); it is also compared with different indices of functioning and with the Global Assessment of functioning scale (GAF),

showing the meaningful statistical correlations obtained between these measures and the three groups of patients found with the MQS. This study ascribes preliminary construct validity to the MQS as a result of its convergent and discriminant correlations.

Chapter 6 inquiries into the relationship between the primary outcome of the TADS, depression severity as measured by the HRSD-17, and the three cluster groups from the MQS. A multi-level modelling (MLM) approach is adopted to capture between-individual and within-individual differences in growth curves over the treatment period and the 2-year follow-up. The results suggest that, in patients with treatment resistant depression, the mentalising capacities displayed at the beginning of treatment may affect the outcome of their symptomatology in a distinct manner.

Chapter 7 presents a summary of the studies reported in this thesis. We discuss these in the light of mentalisation theory and describe limitations, advantages and ideas for future research with the MQS. We suggest that, although some of its psychometric properties are still modest, the usefulness of the MQS in research and clinical practice seems promising.

Part I:

LITERATURE REVIEW

Chapter 1: Mentalising, Its Origins and Development

Chapter Overview

This chapter introduces the concept of mentalising and its origins in attachment theory. Although the concept of mentalisation is relatively new, it has attracted widespread attention within the research and clinical community on both sides of the Atlantic. We present the extent of its current development, concentrating on its clinical and developmental aspects, to gain a broader perspective of how mentalising develops and what happens when there is an inhibition of one or more of its four different, but related, polarities.

We follow this chapter with an exploration of how mentalisation has been traditionally assessed. We claim that a measure that relies on the patient's self-reported experience, by definition, appeals to the more controlled aspect of their mentalising capacity, and that a rater-based instrument could be a better alternative. We conclude with a brief presentation about depression and how it has been conceptualised from a mentalising viewpoint.

1.1 Attachment and the Origins of the Concept of Mentalising

Attachment theory was advanced as a response to classical Freudian psychoanalysis and Kleinian object relations theory (Mitchell, 1988). Congruent with the so-called middle group of psychoanalysts (Rayner, 1991), John Bowlby stated that there is an autonomous behavioural drive to attach to others that is not secondary to experiences of gratification, as claimed by Freud and his followers (Freud, 1911, 1915, 1920; Abraham, 1924). Building on ethological research – notably the observation of Konrad Lorenz that ducks and geese form an immediate bond (imprinting) with the first object they see after hatching – Bowlby (1969) concluded that we are "programmed" to attach to other humans because we are born immaturely, compared with other mammals, and depend on other people in order to survive (Eagle, 2013). Contrary to the psychoanalysis of his time, particularly the ideas advanced by Melanie Klein (1935, 1946) and her followers (i.e. Isaacs, 1948; Klein et al., 1956; Heimann, Klein and Money-Kyrle, 1955), Bowlby emphasised the role of the real relationship between the

baby and the mother and other caregivers, rather than unconscious phantasy (as did Meanie Klein and her followers) or psychical conflict (as emphasised by Anna Freud and more traditional analysts), in the shaping of the mind

In his ground-breaking three volume work on *Attachment and Loss*, he explored how "separation, threats of separation, and unavailability of the caregiver are anxiety-provoking to the infant, especially when he or she is already experiencing distress" (Eagle, 2013). From this observation came Bowlby's assertion that proximity to the mother and other caregivers provides the infant with affect regulation, while separation is affect-dysregulating. Hence, a primary objective of attachment is to provide a sense of psychological safety and survival. For this reason, attachment is sometimes referred to in the literature as the "psychological immune system" (Holmes, 2001; Eagle, 2013).

For Bowlby it is not just the satisfaction of physical needs and/or the conflict between repression and gratification of sex and aggressive drives that determine the course of psychological life. The experience of sensible mothering that is continuous through time sits at the base of mental health, while the disruption of this (by insensitive or neglectful behaviour) renders the person at risk of developing psychological problems. In short, attachment is at the centre of our emotional life throughout the lifecycle (Eagle, 2013).

It was in the context of research into the security of attachment of infants and their parents that Peter Fonagy and colleagues (Fonagy, Steele, Steele, Moran & Higgitt, 1991) came to propose that secure attachment was not just predicted by the quality of attachment style of the mother with her unborn baby during pregnancy, but could also be related to both parents' early relationship with their own parents in terms of states of mind. The sensitive caring by these caregivers was hypothesized to be based on their "mind-mindedness" or reflective function, entailing "the ability to empathize with their children and to see them as separate beings with feelings of their own" (Holmes, 2001, p. 4).

This observation led Fonagy and Target (1996) to propose that a key factor for self-organisation and affect regulation is an individual's capacity to understand interpersonal behaviour in terms of mental states. They hypothesised that this capacity is acquired through the recognition of mental states in the baby by the mother and other important attachment figures. Mental states involve cognitive and affective elements, but they are also composed of wishes, desires and so forth. Fonagy and

Target named this capacity “mentalisation” and operationalised it for research purposes as “reflective functioning” (RF) (Fonagy & Target, 2003).

At first, failures in mentalisation were mostly related to borderline states of psychopathology (Fonagy & Target, 1996; Target & Fonagy, 1996; Fonagy & Target, 2000). However ongoing research in neuroscience, developmental psychology and social cognition[1] has helped to bridge the gap between our understanding of normal development and the strategies individuals adopt when development follows a different path: this includes the impact of the child’s early environment on mentalising and vice versa. Against a background of normal development, children will often develop the capacity for affect regulation and the gradual understanding of the representational nature of minds (Fonagy & Target, 2003). These soon become embedded in social biofeedback, in affect mirroring by the environmental others that surround the infant and in the very nature of subjectivity.

According to these authors, this process develops when the mother or caregiver interacts with the infant[2], attributing intentions and needs to him, or more specifically addressing him as a mental agent. Consistency in this interpersonal relationship, which is mediated by language, helps the infant to build mentalising models of the caregivers and of himself, attributing beliefs, wishes, needs, ideas and feelings to the behaviour that he observes, which at the same time determine his own behaviour (Fonagy, Gergely, Jurist & Target, 2004). Furthermore, these researchers consider that this knowledge is then generalised to others, creating a safe milieu through the predictability of the minds of the self and other, and their accompanying behaviours, in attachment relationships. Other authors from different theoretical traditions have come to similar conclusions based on their own observations (e.g., Stern, 1985; Beebe & Lachmann, 2014).

This modification of psychodynamic developmental theory highlights the importance of early attachment relationships, not because of attachment per se but as an introduction to the social environment, allowing the possibility of achieving a

[1] Reviewing these contributions is beyond the scope of this research; however the work of Mayes, Fonagy & Target (2007); Sharp, Fonagy & Goodyer (2008); Bateman & Fonagy (2012); Fotopolou, Pfaff & Conway (2012) provides a good starting point for the reader.

[2] For the purpose of making this text more readable, we refer to the caregiver and psychotherapist using the feminine pronoun, while the baby, child and patient are described in masculine terms. We will make an obvious exception when referring specifically to a female baby or patient or a male caregiver or psychotherapist.

mentalising stance. Therefore, the characteristics of the immediate social environment (the family) of the child, "rather than the quality of attachments per se, may be the primary vehicle whereby vulnerability to the loss of mentalization under stress is generated" (Fonagy, Gergely & Target, 2007, quoted in Fonagy, Bateman & Bateman, 2011, p. 99).

From this perspective, mentalising is seen as a developmental achievement, not an innate given. The infant and the young child have limitations in the understanding of the world, due to their physical immaturity and their limited experience of interpersonal and social interactions. Based on meticulous analysis of video recordings of infant behaviour, it has been suggested (e.g., Stern, 1985; Gergely & Csibra, 2003; Beebe et al. 2010; Beebe & Lachmann, 2014) that, in the gradual unfolding of their relationship with the caregiver and the others that surround him, the infant's emotions start to make sense, and they begin to see the behaviours of others as actions with a purpose that is inside the mind of the other as an agentive individual.

But in order to get to that stage of psychological maturity, Fonagy, Gergely, Jurist and Target (2002) suggest that the infant has to traverse an interpersonal journey. Depending on how this journey is experienced both intersubjectivity and a sense of agency are established. Before the child understands that people have their own minds, and he has his own, he has a number of developmental tasks to achieve. Each of these help the infant to understand, generally speaking, two aspects of experience: what is happening inside himself and what is happening in his social world. Fonagy et al propose that these tasks take place in three developmental stages, known as psychic equivalence, teleological mode and pretend mode.

1.2 The Development of Mentalising: Integrating Pre-Mentalising Modes of Experiencing Intersubjectivity

Following their work on reflective functioning and mentalising – terms that have been used interchangeably – and a series of papers on "playing with reality" (Fonagy, 1995; Fonagy & Target, 1996, 2000; Target & Fonagy, 1996), Fonagy, Gergely, Jurist and Target, (2002) proposed a model of development based on a growing awareness and understanding of the mental world. In order to be capable of mentalising, they argued, the infant must go through stages of mental maturation, each with its own specific requirements and organisation. These pre-mentalising modes of functioning were called "psychic equivalence" and "pretend mode". Later on, influenced by the work of

developmental psychologists Gergely and Csibra (2003) and social cognition research, they introduced a third mode, the “teleological stance”.

More recently, with the advancement of mentalisation theory, it has been proposed that the backbone of this development is to be found in the theory of epistemic trust, the idea that the infant has an innate predisposition to be open to the reception of social communications from his primary caregivers, mainly within the context of his attachment relationships (Fonagy et al., 2017b). However,

> “We suggest that although attachment may be a key mechanism for mediating epistemic trust, it is secondary to an underlying biological process preserved by evolution. In other words, secure attachment is unlikely to be necessary for generating epistemic trust but it may be sufficient to do so, and, further, it is the most pervasive mechanism in early childhood because it is a highly evolutionarily effective indicator of trustworthiness. Given that the infant needs to overcome the barrier created by natural epistemic vigilance and open his/her mind to acquiring the many pieces of culturally relevant information on which their survival will ultimately depend, it makes sense for humans to have evolved a mechanism to facilitate knowledge transmission between the teacher and the learner, based normally on a shared genetic inheritance” (Fonagy & Allison, 2014, p. 374).

The authors consider that a sensitive caregiver, with her consistent and emotional responses, communicates to the child via ostensive cues (such as eye contact, accurate turn-taking and appropriate contingent reactivity – both in time, tone and content) a reliable knowledge about mental states occurring within the infant himself and in the mother as an external agentive person. This knowledge will eventually encompass the social environment and the whole of the child’s experiential world. Where the establishment of a reliable relationship is not achieved, a state of chronic lack of trust settles in, which has been conceptualised as epistemic hypervigilance (*Ibid;* Fonagy, Luyten & Allison, 2015). The same authors argue that, in therapy, mentalising works as a basic means of establishing epistemic trust: it transmits information about the patient that feels authentic and has personal relevance within a trusting, interpersonal setting.

But before we describe in more depth the clinical implications, let us resume the description of the theoretical and supporting evidence for these primitive modes of functioning, as its appreciation will help us to understand mentalising as a capacity that develops within attachment relationships, and the role of its various dimensions in normal as well as pathological states.

1.2.1 Pre-mentalising.

The basic assumption here is that for the necessary steps in development to take place, the infant needs healthy and consistent interactions with a caregiver who is able to recognise his needs (emotional and physical) and at the same time meet them: in other words, a caregiver that is predictable, reliable and benevolent in her interaction with the baby. We have in mind the kind of care conceptualised by Donald Winnicott (1965) as "good enough mothering", a person with a sensitive disposition towards the baby as someone with his own mind, as attachment theorists emphasise. There are several benefits to these interactions:

> "Reliable knowledge of the nature of mind, one's own mind in particular, and the mind of others, affords one an enduring sense of hope, control, resourcefulness in the face of distress (including the confidence you can rely on others for help), mastery (including the ready willingness to help others in distress), and often joy in relating to others and functioning in the world." (Steele, M., & Steele, H., 2011, p. 151).

These developmental steps are acquired gradually and integrated into mentalising at around four or five years of age. Nevertheless, later in the life cycle, we tend to process our experience in a pre-mentalising mode when we find ourselves in stress or under high levels of arousal. These early modes of functioning have been called "pre-mentalistic" or "non-mentalistic", meaning that they are not mentalising or reflective modes of functioning proper. Difficulties arise if they become a dominant mode, as this can impair the child's or adult's understanding of mental and affective states and severely disturb their interpersonal and intrapersonal world.

1.2.2 Psychic equivalence.

From this developmental perspective, the first theory of mind that the infant develops is that of *psychic equivalence*. In this pre-mentalising mode the child believes that what exists in the mind must exist in the outside world; therefore, people around him should and must see things in the same way he does. Thoughts and ideas are replicas of reality; consequently, they are always true, even if the child cannot fully understand them (Target, & Fonagy, 1996; Fonagy, Gergely, Jurist, & Target, 2002; Jurist, 2010). The child tends to put his mind in the external world, because for him there is no difference between the two: everything is real and readily perceived.

Although there is differentiation in terms of the physical separateness between the infant and the mother, the recognition and understanding that others have a mind of their own, different from that of oneself, is not yet established. The caregiver

approaches the infant, giving him agency, supposing intentions and wishes on his part, ascribing to him a mind of his own. She reflects and mirrors in a “marked” (exaggerated and slightly inexact) manner the psychological experience of the infant through her actions and gestures. These maternal behaviours help the infant to understand that she is showing him his own mental states through her distorted mimicking of them. The infant learns these re-presentations of mental states and starts making sense of his own feelings, needs and wishes. At the same time, this process lays the foundations for more symbolic thinking, usually referred to in psychoanalysis as representational thinking: the infant has his own understanding of what is happening, and can access that state of mind by recalling it. Being fed is a pleasurable experience that brings happiness, as does the cheerful interaction with the father or sibling. The same emotion makes sense in a different context, without the need for the other to mirror what he feels.

Psychic equivalence can be transformed through play, allowing the child to appreciate the likelihood of different motivations for the same thought, to entertain false beliefs due to the acquisition of information that is not available to others, or to understand different points of view (Target & Fonagy, 1996). In this way, the child begins to interpret what is “external”, instead of being certain and closed-minded about his own true beliefs. But play itself is not enough. It involves a setting characterised by the presence of another person with a mind of their own. This bi-personal situation breaks the equivalence maintained by the child, because the caregiver or playmate maintains – in the best case – contact with external reality. “In other words, the child, using the parent's mind, comes to be able to *play with reality*” (Target, & Fonagy, 1996, p. 472).

Developmentally, the capacity to consider different perspectives indicates how the child is able to think about the mind of others. But many difficulties arise when this kind of functioning dominates the life of a person. It was Freud (1913a, 1913b) who suggested that neurotic suffering derived mostly from psychical realities and not just factual ones. It is this kind of reality that Fonagy, Target and collaborators call psychic equivalence, a clinical phenomenon that is better known as concreteness of thought (Fonagy & Luyten, 2009; Fonagy, Bateman & Luyten, 2012).

This developmental state of psychic equivalence is reactivated, later in the life cycle, in moments when the self is overwhelmed by stress or arousal. In such circumstances, mentalising capacity cannot be used and the state of absolute certainty related to subjective experience is re-established, making perspective-taking a difficult or almost impossible task: what is thought is real, with no room for doubt. Although this kind of

functioning is characteristic of people with borderline personality and post-traumatic stress disorder (PTSD) (Fonagy, Bateman & Luyten, 2012), when confronted with a situation that defies a well-rooted belief it is likely that all of us will cope in a similar fashion, at least initially.

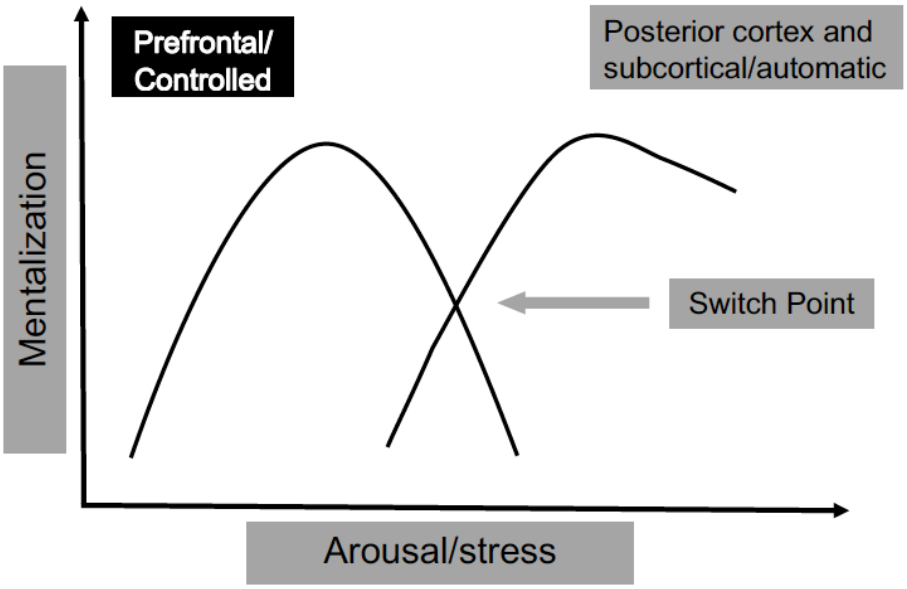

Figure 1. 1 Biobehavioural switch model of the relationship between stress/arousal and controlled/automatic mentalising. Taken from Luyten et al., 2012.

1.2.3 The teleological mode.

A second pre-mentalising mode has been conceptualised by Gergely and Csibra, who named it the "naïve theory of rational action" (Gergely & Csibra, 2003). According to these authors, at around nine months the infant starts thinking about the behaviour of others in terms of goal-directed actions, instead of causes. This mode of functioning can be considered non-mentalistic, as the child does not focus on the mind of the person or object in question, "rather, teleological action explanations make reference to the relevant aspects of reality as those are represented by the interpreting infant herself when observing the action unfold in its situational context" (Gergely & Csibra, 2003, p. 289). Still, it is a substantial developmental achievement, which has been called the nine-month social-cognitive revolution (Target & Fonagy, 1996; Fonagy, Gergely, Jurist & Target, 2002).

At first, the infant applies the teleological model to the whole environment, both animate and inanimate, but for this to become mentalising it has to be limited to human

behaviour. This model comprises three representational elements that help the infant to establish explanatory relations: “the action (A), the goal state (G), and the relevant constraints of physical reality (RC)” (Fonagy, Gergely, Jurist & Target, 2002, p. 224; Fonagy & Target, 1996). Following the principle of rational action, the infant assumes that others try to achieve their goals by the easiest and most efficient route available, taking into consideration the limitations of physical reality.

A growing mentalistic stance develops from the increasing awareness of others’ minds through the enhancement of the representational world. Once the infant can think of the wishes, constraints and desires for goal-oriented actions of the caregiver, and of his social environment, and how these can affect physical reality, a new mode of functioning starts to emerge.

As a clinical characteristic, a teleological mode of functioning is most often found in people who have particular difficulty establishing “second order representations of primary constitutional self-states” (Fonagy, Gergely, Jurist & Target, 2002, p.300; Fonagy & Target, 1996), leading to complications in the representation of an intentional stance, such as beliefs or desires, in others. Being unable to use such representations in attachment contexts, these people resort directly to naïve rationalism: this causes interpersonal difficulties, because for them what is not seen in external reality through concrete actions does not exist. To such individuals, abstract concepts like affect, emotional states or care depend on physical presence or bodily contact only. In other words, “states of mind are recognized and believed only if their outcomes are physically observable” (Bateman & Fonagy, 2016, p.17).

Teleological understanding translates a judgmental stance about the rationality of means into a judgment about efficacy. “To do something rational that is nevertheless not efficient in actual reality, one needs to act in a fictional or counterfactual world” (Gergely & Csibra, 2003, p. 290). Mental states, if they are to be considered, come into the picture only when they are observed through physical, tangible actions. Self-harm could be seen as a means of expressing internal pain (Choi-Kain, & Gunderson, 2008), or sexual intercourse as a manifestation of love and caring. People with borderline functioning, for instance, tend to feel that they are loved only when they are physically touched by the person who claims to love them (Fonagy & Luyten, 2009; Fonagy, Bateman & Luyten, 2012).

1.2.4 The pretend mode.

The pretend mode of functioning is characterised by a dissociation of mental states and reality. The child experiences ideas and thoughts "to be representational but their correspondence with reality is not examined" (Fonagy & Target, 1996, p. 219; Fonagy, Gergely, Jurist & Target, 2002, p. 257-258). It is a developmental step in which the child learns that he can have an "as if" stance that is not necessarily shared or compatible with the external world. The possibility it brings is for the child to be creative and imaginative. On the other hand, a withdrawal into fantasy or over-controlling behaviour can be observed if the child's mind functions exclusively in this mode (Holmes, 2005). A flexible attitude is needed from the adults or siblings in the child's world: if external reality is constantly brought into "pretend play", the possibility of imagination is extinguished (Fonagy & Target, 2007).

Attachment figures and the social environment play an important role here: sharing in pretend play without questioning it, allowing the infant a more flexible mode of relating to his thoughts and ideas through the other who is "playing along". As Astington put it (quoted in Fonagy, Gergely, Jurist & Target, 2002), these representations are now shared by the infant and his playmate (inter-mental), not just by the infant himself (intra-mental); the child – as well as the playmate – relate to a third object, which exists in the minds of both. In summary, "pretending requires a mental stance involving the symbolic transformation of reality in the presence of, and with a view to, the mind of the other" (Ibid, p.48). This statement has echoes in the psychoanalytic literature, mostly in the work of D.W. Winnicott (1971) and his concept of potential space (e.g. see Bram & Gabbard, 2001).

As a developmental step, the pretend mode allows the possibility to be creative and imaginative. It furthers a process of understanding the minds of others, while keeping one's own mind in perspective. This psychological acquisition can, however, turn into a disadvantage when used preponderantly in daily life. In psychotherapy it is most commonly seen in cases where the presentation of the patient's experiences lacks context (Fonagy & Luyten, 2009). This occurs because material reality is not kept in mind at the same time as representations of experience. The dissociation of these two ways of experience allows us to link pretend mode with what has been conceptualised as "pseudomentalising", a capacity to assume mental states in themselves and others as long as there are no connections between them and actual reality. In more severe

cases, this separation of reality and fantasy can lead to dissociative experiences, where the patient tends to intrude into other people's states of mind, or become overactive or destructively inaccurate (Bateman & Fonagy, 2016, p.127). The danger for therapists in such situations is that discussions about inner experience become inconsequential; because the patient is functioning in pretend mode they are not really linked to physical reality and the inaccuracy of their narrative is used in order to exert control over another person (Fonagy, Bateman & Luyten, 2012).

1.2.5 Beginning to mentalise.

Progressively, in normative development, the child is hypothesised to be able to integrate these pre-mentalising modes between the ages of four and five, giving rise to a mentalising or reflective mode. For this to happen he needs to experience three elements in his everyday interactions with others: his own mental states; his mental states reflected back to him by the caregiver and social environment; and a contact with reality that others bring to the relationship. Mental states are now representations; inner and outer realities are seen as different but at the same time linked. Mentalising brings with it some other key achievements:

1. Continuity in the experience of the psychological self. This allows the child to "change his mind" instead of changing himself and losing his continuity and cohesion, an aspect of mental life referred to in psychoanalysis as object constancy (Hartman, 1956; Mahler, 1968; Freud, A., 1965) of the m/other and the self as an object, and self-agency.
2. The possibility to understand others' actions as motivated by their own needs or wishes, in what Mahler and colleagues (1975) described as individuation. The child understands that, in the dyadic relationship, there are not only two physically separated bodies, but two different minds, each with their own needs and interests; this recognition increases the possibility of psychological independence.
3. The awareness that there are two realms of truth: internal and an external. This facilitates the understanding of pretend behaviours and actions by keeping in mind that when people do something such action does not necessarily represent how things really are. Psychic experience can be mitigated by self-regulation.
4. Communication in a broader sense can take place, as the child has the capacity to hold the other person's point of view in mind.

5. Most important, the capacity to mentalise allows a person to have deeper intersubjective experiences (Fonagy, 1996; Fonagy, Gergely, Jurist & Target, 2002).

Now that the child is able to mentalise, mental representations and perceptions of reality can be modified to his convenience. If this process of integration between the pre-mentalising modes fails, psychopathology would take place, giving mental contents the immediacy of external reality, and thwarting the accurate and balanced perception of the social world, as the attributions of feelings, thoughts or wishes become tinged with a biased perspective instead of an open one.

To sum up, the pre-mentalising modes of functioning are necessary steps in development, but they need to be open to interpersonal interactions in order for the infant to learn from social experiences. These modes are modified and then integrated in mentalising, but as suggested before, we tend to function predominantly in one way or another when in stress or arousal. Once the stress is gone or is successfully regulated we can find different ways to cope with the situation presented. It is this kind of event that puts the mentalising capacity to the test, as effective mentalising goes beyond keeping a balance between internal and external components to enabling appropriate emotional expression according to the context.

As noted, however, different strands of research have suggested that mentalising is not a unitary concept. This has led to a major modification of the theory, which will be central to this thesis. Indeed, confronted with increasing evidence that mentalising consists of different capacities, Fonagy, Luyten and colleagues (Fonagy, Bateman & Luyten, 2012; Luyten, Fonagy, Lowyck & Vermote, 2012; Luyten & Fonagy, 2015) have advanced a more nuanced theory of mentalising as consisting of several dimensions organised around four polarities of experience that come to the fore when making sense of our internal and social world.

1.3 The Polarities of Mentalising

The dialogue that mentalising research maintains with other disciplines, particularly neuroscience, has led to an understanding of mentalising as a multidimensional construct. Four discernible but interrelated polarities have been distinguished from brain imaging studies in social cognition (see figure 1.1). These polarities are hypothesised to be associated with relatively distinct neural systems (Fonagy,

Bateman & Luyten, 2012; Lieberman, 2013; Luyten & Fonagy, 2015). Given the centrality of these dimensions to the current thesis, we will discuss them in detail here.

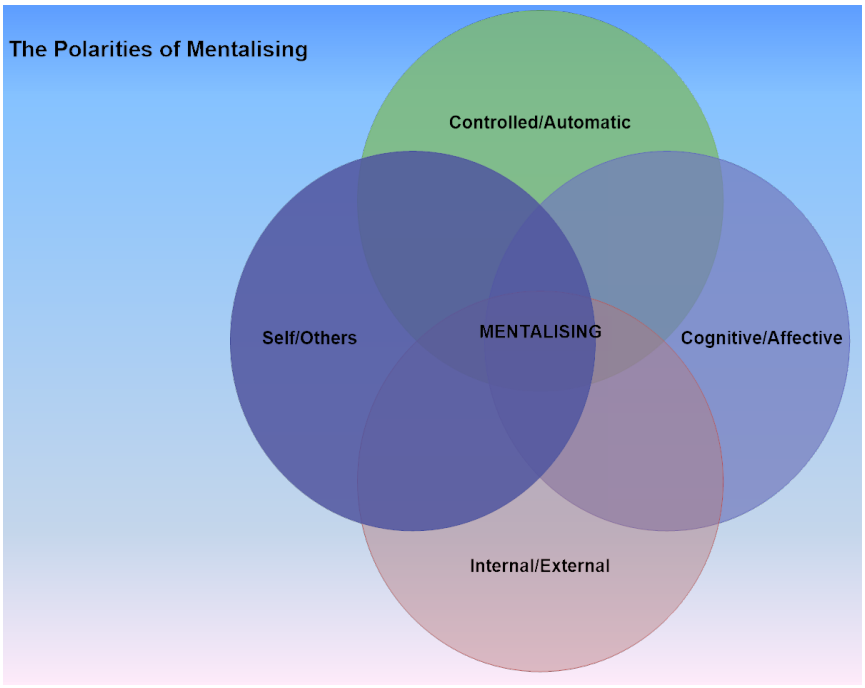

Figure 1. 2 Intercorrelations of the four mentalising polarities. Adapted from Choi-Kain & Gunderson (2008).

A first polarity is “automatic vs controlled” (or implicit vs explicit), relating to the mode of functioning and the awareness and effort that a person displays when processing mental states. The “internal vs the external” polarity focuses on whether mentalising is concerned with mental interiors versus external and observable features of self and others (“mental interiors” refers to elements such as thoughts or affects and “external” features to observable aspects such as gestures and behaviour). A third polarity is related to the content and process of mentalising, which can be cognitive or affective. Finally, the fourth polarity refers to the object of mentalising, described as “self vs others” (Choi-Kain & Gunderson, 2008; Fonagy & Luyten, 2009; Fonagy, Bateman & Luyten, 2012; Luyten & Fonagy, 2015).

1.3.1 Automatic vs Controlled.

This polarity has been described as the “most fundamental” (Fonagy, Bateman & Luyten, 2012, p. 20), as it describes the very basic feature of mentalisation: does a person mentalise in a reflective and conscious way or in an unreflective and unconscious manner?

Automatic mentalising, also referred to as implicit mentalising, denotes a means of reflecting upon mental states in a faster and unconscious way. It seems to use phylogenetically older brain circuits and depends mostly on sensory information. Because we need to pay attention to many different aspects of our self and others in daily life, we tend to do so without much awareness and effort in order to get on with our everyday activities. This kind of action is usually non-conscious and nonverbal. It is related to procedural operations because, generally speaking, in the majority of interpersonal situations we tend to trust "our assumptions about ourselves, others and ourselves in relation to others" (Fonagy, Bateman & Luyten, 2012, p. 20). Implicit mentalising is based mostly "on the external, observable features of nonverbal bodily actions that do not necessitate reflection" (Shai & Fonagy, 2014, p. 189). An instance of this is when we see a person with sunken eyes. We assume in general that this person is tired, but we also tend to automatically infer a reason for their tiredness: that person could have been working late in the evening, partying with her friends, or watching television.

On the other hand, controlled or explicit mentalising requires conscious and reflective functioning. It appears to rely on newer brain circuits and is more linguistic and symbolic (Fonagy, Bateman & Luyten, 2010). It is usually verbal and "requires reflection, attention, intention, awareness and effort" (Fonagy & Luyten, 2009, p. 1358). For this reason, controlled mentalising is slower than its automatic/implicit counterpart: instead of relying on our assumptions we try instead to understand what mental state might have triggered a specific action, feeling or thought in others or in ourselves. In short, explicit mentalising helps us in the process of explaining and predicting behaviour, but at the same time it plays a significant role in social interaction and the regulation of the interpersonal process. Following the example above, if we know that the person in question is concerned about the health of a family member, we might conclude that she is tired through worry and perhaps has not had enough sleep. Based on this inference, we might decide to approach her to offer support, or to avoid any such interaction.

It is important to clarify that the dimensions of these polarities are not mutually exclusive: we do not alternate continuously between distinct modes of functioning but rather move backwards and forwards along a flexible continuum. Moreover, if mentalisation relies exclusively on one of the polarities, the tendency to distort and oversimplify when our assumptions cannot be made conscious and are challenged (in the case of the automatic), or to over-reflect (hypermentalise/pseudomentalise) without much content (in the case of controlled) can cause problems in the way we

understand our self and others' minds, and impair our experience of ourselves in our relationships. As has been described more recently, "it is the balance of automatic and controlled mentalizing that is critical. Explicit reflection cannot feel real unless it is contextualized by an intuitive awareness of the mental states being reflected on" (Bateman & Fonagy, 2016, p. 10).

While psychotherapeutic interventions tend to call for controlled mentalising, in the form of clarification and elaboration, automatic mentalising will set in when we experience a state of stress or arousal. In such situations the possibility to reflect on our own and others' mental states becomes very limited. It is important, therefore, that therapists recognise the kind of psychological material that triggers automatic functioning, and are mindful of the feelings that the patient might be struggling with. If these feelings are intense, a more controlled and reflective capacity might be impaired and a more expressive and supportive stance by the therapist could be more helpful. Furthermore, if the patient has a predominantly automatic mode of functioning, and is highly sensitive to arousal and stress, the likely benefit of psychotherapy is reduced.

1.3.2 Internally vs Externally Focused.

Mentalisation that focuses on internal features of self and others (mental interiors) is characterised by a direct consideration of thoughts, feelings, desires, wishes and experiences, while externally focused mentalising emphasises the external characteristics (visible and physical attributes) of actions that are performed by oneself and others. The former polarity is correlated with activation of a medial frontoparietal network while the latter implies more lateral frontoparietal activity (Fonagy & Luyten, 2009; Fonagy Bateman & Luyten, 2012; Luyten & Fonagy, 2015).

The balance maintained in this mentalising polarity helps us to be creative in our readings of mental states in others and in ourselves, based on internal and external features. The assessment of this dimension allows the clinician to understand the impaired capacities a patient might have when reading others' minds and consider possible distortions in relating to significant others. For example, patients with borderline functioning tend to be hypersensitive to externally visible features, such as facial expressions, but find it very challenging to understand more internally focused aspects, such as intentions or motivations. On the other hand, narcissistic patients are usually concerned about the internal states of others, causing them to hypermentalise, but are unable to consider internal states based on external features, and certainly do not find it rewarding to elaborate on internal aspects of themselves (Fonagy, Bateman

& Luyten, 2012). While these patients can construct an apparently coherent picture of the person they are trying to reflect upon, this enterprise is futile, as it is very difficult for them to resonate with the emotional aspect of others or to recognise the context in which interactions happen.

These authors suggest that the therapist usually needs to start by assessing and developing the patient's understanding of others based on external features. If the patient has the capacity, they can then move on to exploring different possibilities for internal mental states. Sometimes the patient might have the bodily experience of an emotion which he struggles to define (a void, an oppression, a burden, just to name a few). Linking the emotion with this physical feeling is a necessary step in order to make sense of it; it also tells the therapist something about the mentalising potential of the patient.

1.3.3 Cognitive vs Affective Oriented.

Although affects are considered at length in mentalisation theory, cognitive mentalising is usually just designated as perspective-taking and rational consideration of mental states of self and others. Cognitive mentalising is an elementary dimension due to its basic implication of understanding the world, ourselves and others' minds in a consensual manner. It is perhaps what we mean when we refer to "theory of mind" (ToM), or "thinking about thinking".

By contrast, the affective dimension of mentalising involves reflecting about feelings and emotions. It could be considered the most archaic of the dimensions, as we first feel and then learn about those feelings. The understanding of affects and emotions has led to what has been conceptualised as "the feeling of feeling", affective empathy or mentalised affectivity (Fonagy, Gergely, Jurist & Target, 2002; Jurist, 2005, Fonagy & Luyten, 2009) or, in a different but related context, affect consciousness (Mohaupt, Holgersen, Binder & Nielsen, 2006).

The equilibrium between these two polarities requires the use of cognition to transform affect, allowing the creation of new meaning in the affective experience. This has been termed affect regulation and it plays an important role in the process of psychotherapy (Fonagy, Gergely, Jurist & Target, 2002; Jurist, 2005). Elliot Jurist has developed an understanding of a more refined form of affect regulation – or rather modulation – called mentalised affectivity (or just "affectivity"), stating that congruence in mentalising implies not just modulating, but revaluing, affects. In order for this to

happen, three elements or steps are needed: "identifying affects (naming, distinguishing), processing affects (modulating, refining), and expressing affects (outwardly, inwardly/communicating)" (Jurist, 2005, p. 426; 2010; 2018).

Naming an emotion is at the basis of identifying affects; it could involve just one affect or several feelings of differing intensities occurring at the same time. That is why mentalised affectivity is such an important feature, as is enables people to make sense and conceptualise an aspect of their emotional experience that is not necessarily obvious, that what they are experiencing can be confusing, complex but at the same time fluid (Jurist & Meehan, 2009).

This conceptualisation goes beyond mere labelling, as it involves reflecting on the relationship between different affects. Once recognised, an affect can be processed and therefore transformed. Qualitative aspects such as intensity or duration can be modulated and refined to reflect the nature of the perceived experience. A more complex process is the refining of affects, "as it brings out that one does not necessarily adopt new *affects* as much as engage in the process of reviewing the meaning of *affects*. This might or might not lead to the choice of making a subtle adjustment" (Jurist, 2005, p. 431, italics in the original). Finally, affects can be expressed or restrained. Their expression can occur in the mind of the person, in a discrete fashion akin to implicit reflective functioning, or outwardly, depending on the person's interest in letting others know what they are feeling. Moreover, in a more complex way, mentalised affectivity must consider how others might respond to the outward expression of affects, or their inhibition.

Jurist maintains that mentalised "affectivity serves to support *symptom* relief insofar as it helps patients to strive to have a perspective on, and not automatically act on, *affects*. In a higher instantiation, affectivity is about the creation of meaning, that is, crafting affective experience to be more consistent with one's deepest wishes" (2005, p. 430). He thinks that the final goal of therapy is not simply to promote affect that can be labelled as positive, but also to tolerate and cope with those that are considered negative (Jurist, 2018). It is important to keep in mind that the object of regulation is not simply the affect/emotion but ultimately the self (Fonagy, Gergely, Jurist & Target, 2002).

Impairments in this polarity could manifest themselves in a basic inability to identify emotions and distinguish between bodily sensations and emotional arousal (as is the

case in alexithymia) or, at the other dimension, in hypermentalising of an affect that dissociates the individual from any contact with their emotional state.

1.3.4 Self vs Other Oriented.

Finally, mental states are not entities that can be detached from daily life and explored in a naturalistic way. When we talk about wishes, intentions, thoughts, motives or affects we are doing so in relation to an object. This object of mentalising can be our own self or the self of others. As was explained earlier, the processes of knowing oneself and others are interconnected developmentally; changes in the interpersonal environment produce at the same time changes in mental states (Choi-Kain & Gunderson, 2008).

Neuroimaging studies (Lieberman, 2007) have suggested that the ability to reflect about others is closely related to the capacity that a person has to mentalise about themselves, as the two capacities rely on common neural substrates (Bateman & Fonagy, 2016). However, this does not mean that a person with an impairment in one of these polarities will always display similar difficulties in the other. For instance, individuals with antisocial personality disorder (ASPD) can be very capable of understanding the minds of others, but at the same time they usually lack a genuine understanding of their own inner world (*Ibid*).

Although the difference between the polarities is emphasised for research purposes, their interconnection in respect of an object is well observed. Mentalising is a capacity that develops in interpersonal interactions: the minds we are interested in understanding belong to other people and to ourselves. Therefore:

> "Understanding the mental interior of others implies recognition of the fact that others have minds with desires, thoughts and feelings that can be different from one's own. […] The other way of knowing others is more visceral, unmediated, and is typically studied in research on affective empathy and the mirror neuron system" (Fonagy, Bateman & Luyten, 2012, p. 26).

In the clinical setting, Fonagy, Bateman & Luyten (2012) recommend evaluating three key aspects of this polarity: how does the person mentalise about the self and others? Is there a general impairment of both or just one dimension? Once these questions are answered, the task is to find where the imbalance lies: does a person reflect easily on others' affective states, but find it more challenging to fathom the reasons for their actions?

1.4 Conceptual Overlaps

This understanding of mentalising in terms of four different polarities links the concept to other psychological constructs. In the hope of keeping this conceptualisation distinct from others, but at the same time understanding their inter-relationships, we describe some of these alternative notions, highlighting where they accord with mentalising and where they differ. This is also important given that the mentalising approach has been criticised for being unnecessarily broad and conceptually unclear (e.g. Choi-Kain & Gunderson, 2008; Holmes, 2006).

Perhaps the concept that is most easily confused with mentalising is that of mindfulness. Coming from Eastern philosophical and meditation traditions, mindfulness is generally described as "focusing one's attention in a non-judgmental or accepting way on the experience occurring in the present moment" (Baer, Smith & Allen, 2004, p. 191). Some authors (Kabat-Zinn, 1982; Linehan, 1993a, 1993, quoted *Ibid*) consider that the practice of mindfulness is akin to an exposure procedure: one is observing thoughts and feelings that might be unpleasant or even aversive, but as one accepts their transient manifestation they become just thoughts and feelings without any expected behaviour attached to them. This practice results in an enhanced self-observation that allows individuals to be in touch with their feelings and thoughts, and to respond to them in a more skilful manner.

As we can see, mindfulness shares with mentalising its emphasis on the integration of different aspects of mental states, such as cognitive and affective experiences. The observation, recognition and description of what is in one's mind is important to both concepts, but while in mindfulness it leads to "acting with awareness, and accepting without judgment" (Baer, Smith & Allen, 2004, p. 191), we could say that in mentalising it leads to what Jurist (2005, 2006) described as affectivity. In mentalising jargon, mindfulness emphasises the controlled or explicit mode of processing mental states, as well as the self as the object of that process.

Another difference is that while the main objective of mindfulness as a therapeutic approach is to come to terms with internal experience, the mentalising approach, by contrast, emphasises affect regulation and the co-construction of a representational world and meaning that comes with every inter and intrapersonal interaction. It is important to note that, unlike mentalising, mindfulness is considered to be an inherent capacity, therefore "we are all mindful to one degree or another, moment by moment" (Baer, Smith & Allen, 2004, p. 193; Kabat-Zinn, 2003). Mentalising, on the other hand,

is a developmental achievement that depends on the interaction with significant others and the shared creation of mental states with the aid of epistemic trust. Finally, mindfulness is very much focused on the present time, while mentalising can be carried out when referring to situations in the present, past and future (Choi-Kain & Gunderson, 2008).

Another concept, emerging from a psychoanalytic tradition, is that of psychological mindedness (PM). Stephen Appelbaum defined PM as "a person's ability to see relationships among thoughts, feelings, and actions, with the goal of learning the meanings and causes of his experiences and behaviour" (1973, p.36). Barry Farber (1985) broadened its scope when he added that the PM ability could also be used when reflecting about others, adding an interpersonal dimension that was missing in its inception (Choi-Kain & Gunderson, 2008).

Although, conceptually, PM and mentalising are very similar, PM focuses only on the controlled/explicit dimension of mentalising. Or as more contemporary authors write, "PM addresses two disparate personality domains: interest/ability as well as intellect/affect" (Shill & Lumley, 2002, p. 131). Mentalising, on the other hand, does not address personality but focuses instead on the ability to imagine and think in terms of mental states. Both concepts pay close attention to cognitive and affective elements, but even though an interpersonal aspect has been added to PM its emphasis is still on one's own mental states as opposed to others', stressing the individual's capacity to tolerate psychological conflict in a more psychologically organised manner or their need to regress and use more primitive mechanisms like somatisation. One more difference is that PM does not stress the differentiation between several mental states, while in mentalising this is a fundamental task of affectivity.

A third concept that overlaps with mentalising is empathy. This concept has been described by different authors from different traditions and backgrounds. According to Choi-Kain and Gunderson (2008, p.1131), the many definitions of empathy share three features: "1) an affective reaction that involves sharing of another person's emotional state, 2) a cognitive capacity to imagine other people's perspective ("perspective taking"), and 3) a stable ability to maintain a self-other distinction". Similarly, for neuroscientists such as Lieberman, there are three main features of empathy: understanding (the same as point two in the above description), affect matching and empathic motivation (2013).

These definitions make empathy a concept that is more other-oriented in relation to the mentalising polarities. And although it can be displayed in a controlled or automatic manner, it is usually seen as automatic. Congruent with the descriptions of mentalising polarities, affect matching requires one to understand aspects of the self (i.e. how the other's experience resonates within oneself) and aspects of others. But while cognitive and external aspects of empathy are acknowledged, the affective and internal parts are considered more important. This is in contrast to mentalising, where both aspects are equally significant.

"Insight", a concept widely used in psychoanalysis, refers to specific aspects of self-understanding (Holmes, 2006), a process whereby a person grasps a previously misunderstood or unknown aspect of their own mental dynamics in a different way (Mijolla, 2005). On the other hand, mentalising is a capacity and relies heavily on an intersubjective basis and social cognition.

Another overlapping concept is that of Affect Consciousness (AF). It refers to an individual's capacity to perceive, reflect and express affect. Monsen and Monsen, integrating psychoanalytic self-psychology and script theory to explain psychopathology, defined it as "degrees of awareness, tolerance, nonverbal expression, and conceptual expression of nine specific affects" (1999, p.288). A person with lower AF is expected to be unable to make sense of their own and others' feelings in the following aspects: a) interest/excitant; b) enjoyment/joy; c) fear/panic; d) anger/rage; e) humiliation/shame; f) sadness/despair; g) envy/jealousy; h) guilt/remorse; i) tenderness/devotion (Mohaupt, et al., 2006). Affect consciousness is more related to the affective polarity of mentalising, sharing an emphasis on the perception, reflection and expression of affects, but it does not consider explicitly any of the other domains.

Other concepts appear to be related to mentalising. "Introspection", for example, focuses on internal mental states that have the self as object, and is the product of an explicit/controlled process. Introspection is better described as a reflection on oneself, or "the application of the theory of mind to one's own mental states" (Fonagy, Gergely, Jurist, & Target, 2002). "Metacognition" also has an overlap with mentalising in that both involve meta-representational abilities; however, the former is more related to monitoring how one's mental apparatus is performing (Brent, et al, 2014). Moreover, metacognitive therapy focuses on the deficits that can be found in "thinking about thinking" in schizophrenia; it does not aim to inquire into the aspects of cognitive performance that characterise mentalising (*Ibid*). Other concepts that overlap with one

or more aspects of mentalisation theory are theory of mind (ToM), mindreading, social or emotional understanding, perspective taking, socio-cognitive and socio-emotional abilities, social or emotional intelligence (Vrouva, Target, & Ensink, 2013).

To summarise, mentalising is a broad concept that encompasses many related constructs. Recognising the conceptual overlaps described above helps us to understand the borders of mentalising as a construct and to look into the different measures that have been developed to assess conceptual overlaps in order to research their correlations and operationalisation. This brings us to the assessment of mentalising. While theoretically speaking mentalising may be more encompassing than its conceptual cousins, the assessment of the construct is still in its infancy. There is consequently a strong need to develop psychometrically sound and clinically useful measures of mentalising.

1.5 The Assessment of Mentalising

1.5.1 Why assess mentalising?

Clinically speaking, mentalising-based therapy aims to tailor therapeutic interventions based on the mentalising capacity of each patient (Fonagy, Bateman & Luyten, 2012). At every stage of the clinical process the therapist should re-assess the different mentalising dimensions in different interpersonal contexts and help the patient understand how and why he is mentalising in a certain way. This enhancement to the patient's sense of agency will then lead to intrapsychic change that is reflected in his encounters with the outside world[3].

The continuous assessment of the different mentalising dimensions can help the clinician to understand not just impairments to mentalising, but also the possible transferences that may appear during treatment. The patient will often try to obtain from the therapist the same experience he has been getting from important others, making the attainment of safety and epistemic trust a more complex task. If the therapist does not recognise this, a vicious cycle will be maintained and the possibilities for change thwarted due to an increase in epistemic vigilance on the part of the patient. Rather, through recognition of the roles the patient wants her to enact,

[3] We will not focus on the specifics of the treatment for different groups of diagnosis, as it would require a chapter of its own, and is far beyond the aims of this research. As we will be using data on the psychotherapeutic treatment of people with depression, we will describe our approach, and that of wider mentalising theory, to people with these characteristics.

she can monitor the therapeutic relationship, allowing the patient to feel understood and, through the bond that is formed between them, encourage the patient to find new ways of relating with himself and others and improve the quality of his mentalising (through strengthened resilience and learning to see things from a different perspective).

Therefore, an important issue to consider is the level of arousal and stress that sets in when the patient tries to mentalise the different relationships recounted in therapy – the therapeutic bond included. These levels of arousal demand the use of secondary attachment strategies by the patient, and the therapist must shape interventions to the mentalising failures associated with these strategies. An instance of this is a fluctuating sense of closeness and distance on the part of the patient. Continuous assessment of this will alert the therapist to impairments in the way patients process the self-other polarity, leading to confusion if the patient feels too close to the therapist, or to feelings of rejection and possible early termination of treatment if the patient's strategy is one of maintaining distance (Luyten, Fonagy, Lowyck & Vermote, 2012).

As mentioned before, continually assessing the dimensions of mentalisation and pre-mentalising states helps the therapist to keep the patient's mind in her own mind, ensuring that interventions are appropriate to the level of arousal and to the patient's openness to acquiring new knowledge about himself. Supportive strategies and psychological "holding" are certainly needed when arousal overwhelms mentalising capacities; more mentalistic understanding must wait until the patient can cope with this. The patient's ability or failure to co-regulate stress and arousal within the therapeutic bond, and the extent to which he recovers a mentalising capacity, are other factors to assess (*Ibid*, p.52). It is pertinent to mention here that the therapist, as a human being, will have a different way of experiencing and mentalising with each patient, and even across sessions with the same patient (Fonagy & Luyten, 2009). This is why a tool that can deliver a more systematic evaluation of patients' mentalising abilities is required. An additional tool to gauge the therapist's mentalising capacity is beyond the reach of this research, but also highly desirable.

1.5.2 Clinical assessment of mentalising.

As noted above, an important point to keep in mind when assessing mentalising is that this capacity is not static: it is influenced by arousal and stress and is always rooted in relationships with important others, so naturally changes from one relationship to the other.

Furthermore, Peter Fonagy and colleagues (Bateman & Fonagy, 2018; Fonagy, Luyten & Allison, 2015; Fonagy & Allison, 2014; Luyten, Fonagy, Lowyck & Vermote, 2012) have suggested in the last few years that mentalising can be conceptualised as a common factor in different forms of effective psychotherapy, regardless of their theoretical bases. They maintain that, as the therapeutic relationship becomes one of attachment, the capacity of the patient to understand behaviour as the expression of his own and others' mental states is reawakened. If the conditions provided by therapy (in the social world of the patient) are good enough this can be transformative, enabling the person to learn from experience. This occurs within the attachment bond between the patient and the therapist, thanks to the sense of safety it engenders and the patient's openness to new and different knowledge, which we described previously as epistemic trust. In short, "to simplify and demystify, the experience of feeling thought about in therapy makes us feel safe enough to think about ourselves in relation to our world" (Fonagy, Luyten & Allison, 2015, p. 594).

In the same vein it has been suggested that personality disorders – and other psychopathologies that are rooted mostly in personality – are heavily embedded within the imbalanced functioning of the four polarities, leading to pre-mentalising modes of functioning (Fonagy, Bateman & Luyten, 2012). These mentalising difficulties may, in our view, differ across patients and diagnostic groups, as they depend on interpersonal factors and the levels of stress and arousal.

More importantly, while reflective functioning (RF) has been measured in adults using the adult attachment interview (AAI), it tends to focus on thinking and reflecting about oneself rather than about others, in contrast to mentalising. Furthermore, its application is quite time consuming, as the AAI needs to be administered and then coded for RF using the Reflective Functioning Scale (RFS; Fonagy, Target, Steele & Steele, 1998). Also, the RFS yields only a single score (or a set of sub-scores on different topics), while, as we have seen, mentalising is considered to be a multidimensional construct. The paradox here is that, while the mentalising literature has grown considerably in the last years, new theoretical and empirical developments have not been incorporated into measurement approaches. The assessment of parental mentalising, for example, still relies heavily on RF as scored on the Parent Development Interview (PDI; Slade et al. 2005). Other measures or variants of the RFS follow much the same principles (e.g. Ekeblad, Falkenström, & Holmqvist; Talia, et al., 2018).

While a number of task-based protocols have been developed within the mentalising tradition to assess features of mentalising, these have focused mostly on one or more of the dimensions described above[4]. Furthermore, the majority look at the relationship between mentalising and psychopathology, with the emphasis on the cognitive-controlled aspect of mentalising. This tends to understate the influence of social interactions and representations on patients' attempts to make sense of situations in terms of mental states. Other tasks are developmentally oriented and assess the progression of theory of mind, mostly in children. But as Vrouva, Target and Ensink state: "Mentalization is a multifaceted ability which cannot be fully captured by a single task" (2013, p.69).

In 2016, Fonagy, Luyten et al. published an article reporting the development and initial validity of a self-report measure for mentalising, the "Reflective Functioning Questionnaire", a 46-item instrument that showed good preliminary reliability and validity. However, the authors were aware of some of the difficulties that developing such a measure involved. "The very capacity that we aim to assess is needed to complete a measure of the capacity: individuals need to rely on their capacity for mentalizing in responding to questions about mentalizing" (Fonagy, Luyten et al., 2016, p. 2-3). Therefore, they were confronted with the issue of "How can anyone self-reflect accurately and arrive at the conclusion that they are poor at self-reflection?" (*ibid, p. 3).* The authors seemed to agree that participants would be biased with regard to their own capacity for mentalising, and that people with inhibitions in their reflective abilities would be unaware that they experience difficulties in this area. However, more recent adaptations of the measure confirm that it has good psychometric properties (e.g. Badoud, et al., 2015).

Although these are positive advances, assessment of the different dimensions through self-report methods relies on the introspective capacity of the patient, which is sometimes impaired, leading to a distorted or unreliable evaluation. If assessment is to be performed by someone other than the therapist or patient, that person will be required to infer mentalising capacity based on verbal and non-verbal information, with no direct access to the patient's underlying mental states. Hence, both types of assessment have their limitations.

[4] See Vrouva, I., Target, M., and Ensink, K. (2013) for a good review of the different tasks and measures for children and adolescents used until 2013.

Summarising, the few currently-available measures of mentalising are based on either time-consuming interviews which only yield a single score, or relatively simple experimental procedures that focus on a single dimension (such as facial emotion recognition paradigms), or self-report questionnaires. Despite the obvious complexity of the task, the goal of this thesis is to advance the comprehension of mentalising by understanding its different components, having as a key objective the development of a multi-dimensional measure that tracks changes in the mentalising capacity of a given patient. Eventually, such an approach could also be used to assess changes in mentalising across a psychotherapeutic treatment, although this is not an aim of the current research. While recognising its potential limitations, we see this proposal as an opportunity for an external rater, a person outside the therapeutic relationship, to look closely at what is happening inside the sessions and give an objective appraisal of a patient's mentalising capacity, rather than the subjective assessment provided by the clinician. As mentioned at the beginning of this chapter, we will take advantage of two clinical trials that have taken place in London involving patients with depressive disorders, which is our next topic of discussion.

1.6 Depression

1.6.1 Prevalence of depression.

According to the World Health Organisation (WHO), depression is one of the most prevalent disorders globally. It is estimated to affect 350 million people worldwide (WHO, 2012) and is a big contributor to the global burden of disease. Depressive disorders usually start early in life (according to Eaton et al, 2008, 40 percent of depressed people experience their first episode by age 20), are recurrent and reduce the functioning of the person affected. Additionally, over one in three depressed people develop chronic depression over time (Kessler et al., 2003).

1.6.2 Mentalising and depression.

In the last decades, there has been a shift in psychoanalytic thinking concerning depression focusing on both the content of the dynamics involved in depression (i.e. distortion in representations of self and others, e.g. Blatt, 2004, 2008), but also on the process of mentalising or reflective functioning (Luyten, Fonagy, Lemma & Target, 2012; Luyten et al, 2012). This has led to the development of systematic, manualised treatment approaches within the psychoanalytic tradition for chronic depression, i.e. a

long-term psychoanalytic treatment for treatment resistant patients (Taylor et al., 2012; Beutel et al., 2012; Taylor, 2015; Leuzinger-Bohleber, Kallenbach & Schoett, 2016) and a brief focused treatment for less chronic types of depression (Lemma, Target & Fonagy, 2011).

Within this new approach, depressive symptoms are thought to reflect responses to threats to attachment relations and, thus, threats to the self caused by: (impending) separation, rejection, or loss; (impending) failure experiences; or a combination of these. This is then thought to result in impaired and/or distorted mentalising with regards to one's own and other people's motivations and desires (Lemma, Target & Fonagy, 2011; Luyten, Fonagy, Lemma & Target, 2012; Fischer-Kern, et al., 2013, Ekeblad, Falkenström & Holmqvist, 2016). This generalised distortion of mentalising is thought to further increase arousal and stress levels, impeding the person's ability to cope and resolve the issues at hand and causing further impairments and distortions in mentalising, leading to a vicious cycle (Luyten, Fonagy, Lemma & Target, 2012), as shown in Figure 1.3.

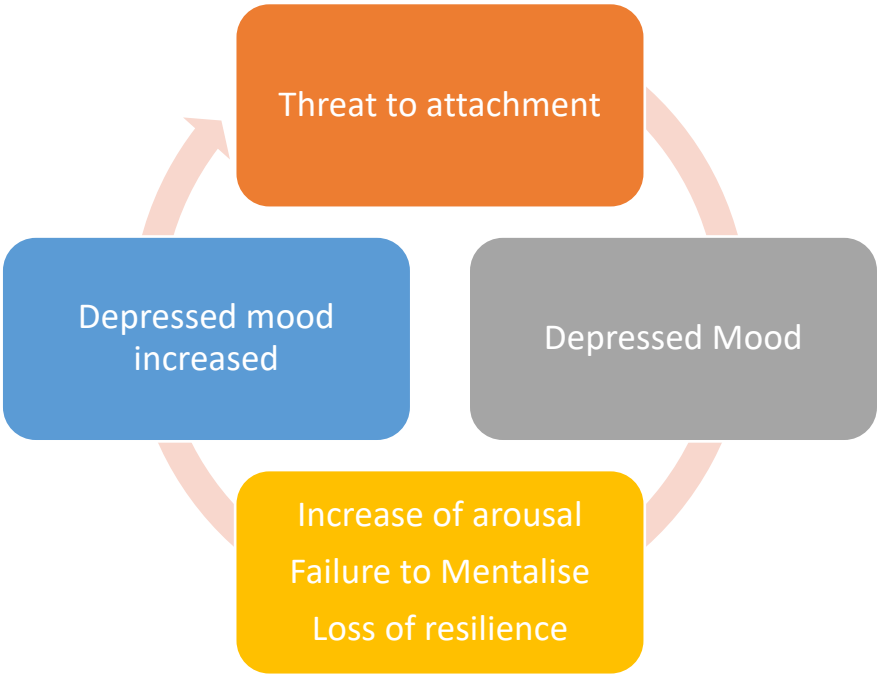

Figure 1. 3 The interpersonal cycle of depression (Adapted from Luyten et al., 2012)

It is considered that this distortion in mentalising leads to the re-emergence of pre-mentalising modes of functioning due to the rigid use of one polarity over the other. These fixations in the mentalising polarities may explain some of the typical features of depression, such as the negative rumination focused on aspects of the self, which tends to be extended to others. This influences the capacity to regulate the affective

state attached to both representations (the self and the other); as a consequence, the depressed mood is perpetuated and the cycle continues.

In a similar fashion, when a person with depressed mood is functioning in psychic equivalence mode, psychological and physical pain could be equated, leading to an embodiment of the emotional condition: feelings and emotions are not processed in the mind but rather find an anchor in the body, affecting everyday activities such as sleep pattern and appetite. Furthermore, it is thought, depression involves a generalisation of implicit and affective mentalising, due to the failure of their opposite polarities (i.e. controlled and cognitive). This failure impedes the reappraisal and suppression of negative affect and makes it impossible to reflect upon one's own affective states. Instead the individual takes a biased, non-reflective stance towards the self and others (Luyten et al., 2012).

Another pre-mentalising mode that can be detected in depressed persons is the teleological stance. In this mode of functioning, as we have seen, the person equates wishes and feelings with observable behaviour and/or material causes. This leads depressed individuals, for example, to excessively demand physical presence and contact as often the only means to feel loved or cared for. In therapy, this may be expressed as the patient seeking similar evidence of commitment, by asking for longer or additional sessions, sometimes leading, in the worst case, to boundary violations.

More research is needed to substantiate these hypotheses, as there are currently only a handful of studies on the role of mentalising in depression. Ekeblad, Falkenström & Holmqvist (2016), for instance, suggest that depression itself can affect mentalising capacities, and that impairments in mentalising pose a risk factor for depression. Furthermore, there might be a "general cognitive impairment due to depression severity that causes both worsening of the depression and impaired mentalization" (p.68). Also, it is not yet clear whether mentalising is indeed impaired in patients with depression, and whether impairments in this capacity are indeed related to the therapeutic process or outcome.

One of the few investigations into the link between depression and mentalising is that of Taubner et al. (2011). In a sample of 20 patients with chronic depression in long term psychoanalytic psychotherapy, they found that RF as measured on the Adult Attachment Interview did not differ significantly between depressed patients and controls, but that patients with chronic depression recorded lower RF scores when reflecting on loss specifically. Furthermore, RF was not related to severity of symptoms

as assessed with the Beck Depression Inventory (BDI). Yet, they did find that patients with higher RF established a therapeutic alliance more easily than those with lower RF.

Fisher-Kern, et al. (2015) researched mentalising within a sample of 46 female in-patients diagnosed with major depressive disorder (MDD). In contrast to Taubner et al (2011), they found that, compared to controls (n=20), patients had a lower mentalising capacity as assessed by the Reflective Functioning scale on the AAI, and that mentalising difficulties were not restricted to topics typically related to depression, such as loss. The polarity of self/other was affected most (in that depressed patients had the lowest levels of RF on this polarity). There also appeared to be a relationship between mentalising impairments and illness duration, number of admissions and cognitive impairment, in line with the speculations of Ekeblad et al. (2016) that depression impairs mentalising over time.

Ekeblad, Falkenström & Holmqvist (2016), in turn, compared 85 outpatients with MDD in cognitive-behavioural therapy and interpersonal psychotherapy. RF in this study was assessed using a shortened version of the AAI. The authors also developed a measure to assess mentalising about depressive symptoms, the Depression-Specific Reflective Functioning (DSRF) scale, scored through interviews where patients were asked questions related to depression. They found that depressed patients had lower scores on both general RF and DSRF, and that lower scores on both scales predicted worse outcomes in both treatment conditions.

Hence, although the above studies are instructive, it is clear that there is a dearth of research on the role of mentalising in depression and its treatment. It is as yet unclear whether depression is indeed associated with specific or more general mentalising impairments, and whether this capacity plays a role as a moderator or mediator of treatment outcome. More research is needed to elucidate the relationship between mentalising and depression, as well as between mentalising and therapeutic outcomes. It is also clear that to enable research in this domain, there is a need to develop more sophisticated measures of mentalising and its dimensions.

It is important to keep in mind, as mentioned before, that the current research is an attempt to validate a new measure through the use of the data provided by two clinical trials with depressed patients. The participants in one of these trials, the Tavistock Adult Depression Study (TADS), had particularly complex presentations as they were diagnosed with a severe form of treatment-resistant depression. The findings of our

research will therefore be particular to this specific group of patients, and not to psychotherapy patients in general.

1.7 Discussion

In the last decade, research and clinical practices inspired by mentalisation-based therapy have grown considerably. With the involvement of other researchers and clinicians the subject of mentalising has become, at the same time, more complex and better understood, not just in relation to therapeutic practice but also in areas of more general interest, such as psychopathology, developmental psychology and neuroscience.

It has even been suggested that mentalising is a common element in all effective psychotherapies, whatever their theoretical orientation. But despite the growing literature, research and clinical practices inspired by the topic, we are still missing an instrument that allows us to capture how mentalisation changes during and after a therapeutic intervention. More importantly, we need to test the assertion that mentalising is instrumental to therapeutic success by directing our attention to "effective psychotherapies" and measuring changes in mentalising, if they occur.

Additionally, interventions that claim to enhance mentalising by repairing its capacity cannot be thoroughly evaluated without assessing how patients actually change the way they reflect upon themselves and others. Similarly, the relationship between mentalising and outcome in depression is not clearly elucidated. Is the enhancement of the mentalising capacity the expected outcome of an effective psychotherapy focused on depression, or is it a mediating factor in helping depressed patients to improve their symptomatology?

This chapter set out the theoretical background for this research. It presented a general picture of the inception of mentalising within attachment theory, and reviewed its different dimensions. Because the focus of the current research is on depressed patients, we examined the extant literature that related mentalising and depression, and analysed some difficulties in establishing a causal connection between the two. We emphasised that some of the findings of this research (presented in the chapters of Part III) deal with a specific set of participants, hence their results may be atypical of psychotherapy patients in general.

Although mentalising seems to be a potentially important theoretical construct, we argue that recent developments in its understanding have to be brought to the fore when assessing it clinically. In the next chapter we will look at Q methodology, a research tradition that, despite having been developed in the 1930s, does not enjoy the popularity of other research methodologies. We consider that Q methodology offers an innovative approach to developing the kind of instrument we are advocating.

Chapter 2: Q Methodology, History and Development of Mixed Methods Approach

Chapter Overview

This chapter introduces Q methodological research. Tracing its historical origins to the factor analytic school in the UK, we focus on the development headed by William Stephenson regarding a new way to assess subjectivity which he named “abduction”. We consider how Stephenson’s discussions with Cyril Burt determined a specific way of doing Q methodological research for some decades, until Jack Block resurrected previous methodological propositions by mixing the data obtained from this type of analysis with more traditional “R” analysis.

We delineate the different steps that are usually taken in Q methodological research, and clarify the main phases and concepts of the approach. Following this, we present some new developments in this field of research and their use of a combination of by-person analysis and “R” factor analysis. Finally, we present an evaluation of some of the advantages and disadvantages of this methodological approach – both in its traditional and contemporary forms – and present our perspective on why the type of research that we are proposing belongs to the so called “mixed methods” approach.

2.1 Historical Notes

Most psychologists consider that factor analysis started with the publication of “General intelligence: objectively determined and measured” by Spearman in 1904. However, other research communities seem to understand that the inception of such techniques used in what is known as factor analysis were discovered (or at least published) three years before, in 1901, by Karl Pearson under the title “On lines and planes of closest fit to systems of points in space”. It appears that Spearman did not read Pearson’s paper but, as historians tell us, there was an ongoing dispute between the two authors, related to some criticism that Pearson made of Spearman’s paper, an acrimony that seemed to be irreconcilable (Blinkhorn, 1995). Nonetheless, despite Pearson being the first to use the technique it was Spearman who coined the term “factor” in its modern sense, and that is why he is considered to be the father of factor or factorial analysis (*Ibid*).

Pearson and Spearman were writing about a statistical technique that identifies "whether the correlations between a set of observed variables stem from their relationship to one or more latent variables in the data" (Field, 2015, p. 875). These variables are expressed in a few significant dimensions that could become constructs; these are the factors. The technique was traditionally applied to a group or cluster of variables, such as test outcomes, to determine if a significant correlation existed between them.

For many years, Spearman focused his work on the analysis of one specific factor, a general factor of intelligence which he called "g". He wanted to clarify its nature and to elaborate its importance as a psychological construct. Other researchers, some of them Spearman's collaborators, concerned themselves with the more general application of factor analysis. They included figures such as J.C. Maxwell Garnett, Godfrey Thomson, and Cyril Burt, the latter becoming Spearman's successor at University College London in 1932 (Good, 2010).

Mowrer (1953) tells us that Cyril Burt proposed the idea of factoring between individuals who have been given different tests, mostly in educational settings, which was his field of work[5]. Burt and Davies looked at the correlations between persons for "a study of imagery types among school children" (*Ibid, p. 328*). The former published some of his results as part of his report on mental and scholastic tests in 1921. This publication was followed, five years later, by Godfrey H. Thomson and Stella Bailes' study of patterns of correlation in teachers' marks for schoolwork.

Despite this modest beginning, Godfrey Thomson published in 1935 a paper "on complete families of correlation coefficients, and their tendency to zero tetrad-differences: Including a statement of the sampling theory of abilities", where he advanced the possibility of calculating correlations between people, rather than test results. He decided to call these correlations "Q" correlations so they would be easily

[5] In fact, Burt (1883-1971) is considered the first educational psychologist in Britain (Rushton, 2002). He accomplished many achievements, and was knighted in 1946 for his work on psychological testing. He was also editor of the British Journal of Statistical Psychology from 1947 to 1967, a few years before his death. Th decline of Burt's reputation came in 1974 when Kamin stated that the results of some studies that Burt conducted from 166 on, with monozygotic twins, was implausibly high, opening the scene for what is known as the "Burt affair" (Hearnshaw, 1979). Although these accusations, that proved to be real, are very serious in the scientific world, we consider that it diminished the methodological advances that Burt did (or at least to recognise them as his), being famous nowadays most for the misrepresentation of the data and not for his scientific discoveries (Rushton, 2002).

differentiated from the correlations established by Pearson as "R" (Brown, 1980). Thomson's approach was concerned with individual differences, based on the results of the different measures that were applied to participants, although his emphasis was very much on the variables used (i.e. tests). His Q analysis compared participants by assessing and associating their psychological traits, revealed by the battery of tests used.

That same year, and working independently, in a 28-line letter to the editors of *Nature*, William Stephenson (1902-1989) cemented the foundations of a new way of analysing data: inverted factor analysis. "We begin with a population of *n* different tests (or essays, pictures, traits or other measurable material), each of which is measured or scaled by *m* individuals. The (*m*) (*m* – 1)/2 intercorrelations are then factorised in the usual way". (Stephenson, W., 1935a, p. 297). His approach, as opposed to that of Thompson, focused on intra-individual differences, where the focus is on the participants and the variables that characterise each of them. Stephenson's Q analysis was more interested in the holistic comparison of groups of people, their similarities and differences, and the different clusters that they formed when compared (Calderon, A., 2014). Hence, what we know today as Q analysis is widely attributed to Stephenson, although Thomson's "Q" nomenclature is retained.

2.2 Stephenson and the Beginnings of Q Methodology

William Stephenson was born and raised in Chopwell, County Durham in the north-east of England (Good, 2010). After getting his doctorate in nuclear physics in 1926, from Durham University, he moved to London to undertake a second Ph.D. in psychology with Charles Spearman at University College London (UCL), where he would be Spearman's research assistant. He was 24 years-old (Good, 2010; Stephenson, 2010).

After graduating, Stephenson worked as a Clinical Psychologist at Epsom Mental Hospital (Stephenson, 2010). He published several papers related to this field but became increasingly discontented with Spearman's hypothetico-deductive method, a fact noticed by fellow academician J.C. Flugel. Although it is not clear if Flugel himself was behind this, a small committee of the Institute of Psychoanalysis, headed by Ernest Jones, proposed to Stephenson that he undergo psychoanalysis with Melanie Klein, but with the expectation that he would remain in academic research rather than entering clinical practice. This 5 day-a-week analysis was conducted between 1935

and 1936. It ended when Stephenson moved to Oxford, where he was entrusted with the development of an academic psychology department (Stephenson, 2010). He became its Director in 1945.

Stephenson resigned his position in 1948 after failing to be appointed to the newly created Chair in Psychology (Goodman, 2010). He and his family emigrated to Chicago, where he took up a post as a Visiting Professor in the department of Psychology at the University of Chicago. Some years later, he moved again – professionally and geographically – ending up as distinguished research Professor in Advertising at the University of Missouri and its School of Journalism (Brown, 2008).

It was whilst Stephenson was at UCL, in the mid 30s, that his letter to Nature was published. He considered that the method he was proposing would be "especially valuable in experimental aesthetics and in educational psychology, no less than in pure psychology" (Stephenson, W., 1935a, p. 297). He developed the methodology of his technique in a longer paper published in the same journal. He stated: "The technique is a complete inversion of all previous factor techniques" (Stephenson, W., 1935b, p. 17), where a large number of participants and a small number of tests are substituted for a small number of participants and a larger selection of tests or test items. There was a clear distinction between these two methods:

> "Previously individuals obtained scores; now the tests get them instead, due to the operation of the individuals upon them. By the present-day technique we obtain the factor saturations or loadings of tests, but by the new one we can obtain saturations for individuals. By the older technique we could estimate a person's g, or c, or w, or other factor; now we can obtain factor estimates for test-items" (Stephenson, W., 1935b, p. 18-19).

Once this inversion technique was used, the resulting correlations could be subjected to a factor analysis, "using Spearman's or anyone else's factor theorems." (Stephenson, W., 1935b, p. 24). His intention was to pay attention to more intimate aspects of the person; in truth Stephenson wanted to advance a "science for all that is subjective" (1993), one that would rival objectivism but not deny it. This goal was encapsulated in his concept of "concourse".

The notion of concourse is essential to Q methodology. Simply stated, it comprises the viewpoints of statements contained within items that need to be ranked. These transmit a subjective viewpoint relating to the specific subject of the research, revealing commonalities of perspective offered by the population. The concourse is presented as a Q set to participants who then rank the items according to the instructions given. These many points of view are factorised and then merged

according to the commonalities that make up a factor share. The end factor arrays "are composed of the scores associated with each statement within each of the factors, and these scores provide the basis for factor interpretation" (Brown, S.R., 2008, p. 706). The interpretation is led by what Stephenson called abduction (1956), a form of logic that takes an empirical finding and applies a theory-laden explanation or hypothesis to it. This was his alternative to what he saw as the dogma of the hypothetico-deductive method of some of his colleagues.

2.3 Q-Methodology and the Discussion with Burt (Q vs R)

It is clear that the first by-person analyses and Q correlations were brought to the fore by Burt and Thomson, before Stephenson. So why do researchers nowadays associate Q methodology with the latter? The answer is provided in a highly influential paper co-written by Burt and Stephenson, "Alternative views on correlations between persons" (1939), in which they outline the similarities and differences between their by-person approaches[6].

There were two main differences between their approaches. Burt, following a more positivist approach, considered that there was only one matrix that mattered in his analysis: one that was populated with the different scores obtained by objective tests such as those measuring academic abilities or intelligence. His approach had a more researcher-led objective (Watts & Stenner, 2005) in which the test results represented hard data, "R", due to their psychometric properties, which could be interpreted by the person collecting the information by contrasting the results of a specific participant against the standards for their population group. However, Burt claimed that Q and R were complementary in that the matrices they produced were dictated by the columns and rows of the same transposed data matrix.

Stephenson, on the other hand, claimed that there were two separate data matrices of interest to the Q methodologist: one obtained for objective measures, or "R" data, and the other containing the perceptions of the population, the subjective data or "Q", which reflected personal expressions and viewpoints. In Stephenson's view, Q methodology was an exploratory technique, offering no room for proving or disproving

[6] As it was expressed in the previous footnote, there is also a possibility that after "the Burt Affair" researchers did not want anything to do with Burt's legacy.

hypotheses. Stephenson was adamant that Q and R analyses could not be applied to the same matrix.

The other difference between these approaches is that Burt's technique, following more traditional lines, sought to derive its conclusions from a large number of cases producing generalisable results. Stephenson, by contrast, proposed that results from his Q technique could be obtained from a handful of participants, even from one person alone, and that these results were "independent of individual differences" (Burt & Stephenson, 1939, p. 273)

In other words, in Stephenson's approach it was the:

> "'*n* different tests or measurable materials', not the participant group, that become the study sample. Secondly, the 'variables' are no longer tests or hypothesized traits, but the various persons who take part in the study. In other words, persons become the variables of interest in an inverted (or 'Q') study" (Watts & Stenner, 2005, p. 71-72).

The objects of research are the "correlations between persons or whole aspects of persons" (Stephenson, 1935b, p. 19), and not just the correlations between the different tests, the latter being the focus of interest in traditional factor analysis. Hence, people themselves are the variables that load onto the emergent factors and not the results on the given tests. Burt was sticking with the familiar rules of the psychometric world, where objective tests formed the basis of correlation analysis. From his standpoint, there were no new notions or concepts to explore: he was simply offering a different perspective of accepted data practices. Stephenson was more interested in subjectivity and recognised that traditional factor analysis would not take him in the direction he wanted. We can say that the main difference between these two methodological approaches is not so much the mechanics of the analysis per se, but the perspective of what is to be measured, and how.

Many authors (including Brown, 1980, 1993; Watts & Stenner, 2005) agree that the difficulty Stephenson faced in establishing his Q technique on British soil, and his failure to get the Chair at Oxford, catalysed his move to the United States and may have influenced his later decision to look for posts outside psychology. This decision could have also influenced the proliferation of Q methodology, at the beginning, outside the field of psychology.

The discussion between these two researchers almost 80 years ago still reverberates in the Q methodological world. Certain partisans of Stephenson hold on to his

principles and consider the combination of Q and R to be a methodological anathema. But there is little doubt that Cyril Burt's perspective has had a wider influence, with some eminent researchers such as Raymond Cattell, Hans Eysenck and J.P. Guildford adopting his factor analysis technique. Nevertheless, in the last couple of decades the number of researchers following Stephenson's ideas has grown, to a point that some forget to credit Burt for advocating the complementarity of Q and R. Today, the International Society for the Scientific Study of Subjectivity (ISSSS) is the main Q methodological organisation worldwide. Its journal, Operant Subjectivity, is committed to the work of Stephenson, but is open to alternative perspectives.

2.4 Terminology: Q sort, Q Factor Analysis, Q Methodology

Some distinctions need to be made when discussing the terminology associated with this branch of data analysis. While they share certain similarities, "Q sort", "Q factor analysis" and "Q methodology" are not the same thing. The differences between them are subtle but nevertheless important. Despite this, only a few authors make a point of clearly defining the three concepts (e.g. Ozer, 1993; Newman & Ramlo, 2010).

The Q-sort technique is a scaling procedure for item sorting. Catell (1944) considered it an "ipsative" procedure when assessing personality, as the variables contained in a given set of items are ranked or sorted relative to each other, based on pre-determined criteria and a frame of reference. They are usually scaled according to their positive or negative salience compared with other items (Block, 1961).

Q-factor analysis is characterised as embracing one particular component of the procedure advanced by Stephenson, i.e. "the grouping of people with factor analysis. Yet this grouping is not based on participants' sorting of items as it is in Q methodology" (Newman & Ramlo, 2010, p. 517). As such, the information obtained from the study population could come from different sources, such as interviews or surveys. Q methodology, on the other hand, uses the subjective data provided by participants.

This same perspective is taken by other researchers in the field, such as Watts and Stenner (2005), who consider that Q methodology is based on two fundamental aspects: the collecting of the data via Q sorting and the by-person factor analysis or Q technique, as Stephenson called it to differentiate it from Spearman's "R" analysis.

2.5 The Qualitative vs Quantitative Debate

Although for many years there was a tacit acceptance that Q methodology was a qualitative method as opposed to the more quantitative R analysis, Q methodology is now increasingly thought of as a mixed methods strategy for the study of subjectivity. While it has often been presented in qualitative manuals, it has also featured in quantitative texts. Jack Block (1961, 1971, 2008) can be considered one of the pioneers of the latter position. His work has influenced many other researchers in a more contemporary use of Q analysis. We will talk in more depth about him when we explore his work soon.

Nowadays Q methodology tends to be seen as providing a systematic approach to the management of the data through the Q factor analysis, and allowing the exploration of subjectivity in an individual or the commonalities found in a group of people (Barker, 2008). This idea has developed as part of a mixed methods approach to Q methodology, although debate over what constitutes the quantitative and qualitative dimensions of the process continues (Creswell, 2010; Tashakkori & Teddlie, 2009; Newman, & Ramlo, 2010). One thing is clear in this ongoing discussion: whatever position a researcher identifies with, their goal will be to fulfil the aims of the research and provide answers to the questions raised.

2.6 Steps in a Q Methodological Analysis

There are at least six different steps needed to conduct a Q analysis (Calderon, 2014), but the first issue that needs to be established is the research question that the researcher wants to respond to. There are different possibilities here, and they all aim at elucidating subjective experience:

> "Curt (1994) suggests that research questions should be focused on either: (a) representations of a subject matter; (b) understandings of it; or (c) conduct in relation to it. An alternative categorization scheme involves causes/reasons; definitions; and reactions, responses or policies." (Watts, S., & Stenner, P., 2012, p. 67)

These authors also discourage attempts to combine different inquiries into a single study. As each of these inquiries could be seen as a distinct object of research, amalgamating them in the same analysis could lead to confusion or to a superficial investigation of the topics in question. Once the research question is agreed, the first step to follow is to ascertain the concourse.

2.6.1 The concourse.

As we mentioned before, this concept was considered by Stephenson as the one that differentiated Q methodology from other methodologies, and as such its centrality cannot be overlooked. It is the "universe" of viewpoints on a subject (Baker, 2006). The Latin etymology of this word, *concursus*, implies "a running together", like a train of thought; thus, the concourse is considered the means by which a topic is communicated (Brown, 1993). This universe of viewpoints is created from different sources: academic literature (which is usually the first port of call), where the topic of interest can be broken down into its main aspects; from interviews, discussions or even literary and popular texts (Watts & Stenner, 2005). The possibilities are not limited to the ones mentioned here; we can even find concourses that have been built around an extant test or scale items (i.e. Schneider, 2003; Calderon, 2014; Rost, 2016).

In practice, these are the statements from which the final Q set will emerge. Although Stephenson and other researchers considered that the concourse could include different manifestations of human subjectivity, such as pictures or music, it is usually composed of written statements presented as cards, a general "random collection of self-referable statements about something, of statistical dimensions" (Stephenson, 1993, p. 5). How the concourse is built is less important than the fact that the end product, the Q set, justifiably claims to represent broadly the relevant opinions of the topic to be researched and is tailored to the research question being asked (Watts & Stenner, 2012).

2.6.2 The Q set.

Once the concourse is determined, the next step is to reduce it to a more manageable size. The collection of items or statements that survive this decanting process is called the Q set or Q sample. The aim is to do more than simply cut the number of items: the final Q set should cover all the facets of the topic effectively, avoiding overlapping or redundant items, and ensuring balance, appropriateness, comprehensiveness and intelligibility (Stainton Rogers, 1995).

Although there is no such thing as a perfect Q set, there are certain characteristics that make a collection of items fit for the task. One is the wording of the statements. This should be concise and clear, expressing a single element and avoiding "double-

barrelled" phrasing (Block, 1961). A Q set can be developed in two ways: the unstructured Q set approaches the subject matter as a whole, with all items representing this "wholeness". A structured Q set, by contrast, is developed so that individual items address sub-topics or sub-themes of the subject matter. In this case the number of items composing each sub-topic tends to be roughly the same (Watts & Stenner, 2012).

It is generally agreed that the size of the final Q set will vary according to the research question. Some authors recommend that it should contain between 40 and 80 items or statements (Stainton Rogers, 1995; Watts & Stenner, 2012), although there is little evidence to substantiate such a claim. Instead, we find Q methodological research with Q sets of as few as 20 items or statements (Barbosa et al., 1998) and as many as 200 (see the bibliography for Westen and Shedler for examples). Either extreme poses a difficulty: a small Q sample would lead to a very restricted perspective of the subject matter, endangering the comprehensive analysis that Q methodology aims to deliver. A large Q sample, on the other hand, can make the process of item-sorting demanding and tiresome.

The last stage of this methodological step is the piloting of the Q sample. This process helps to improve the final Q set by ensuring that items are not duplicated; that the statements are expressed in a straightforward rather than technical way; that they express just one idea or proposition; and that they cover the vast majority of relevant issues. Piloting can also offer a general idea of the time that it will take to sort the set, and allow one final check of the use of language. Jargon-free wording is always best, as it makes items easier to understand and less subject to interpretation.

2.6.3 The sample or P-sample selection.

A characteristic of Q methodological research is that it does not require a large number of participants; even one would suffice. Contrary to what would be expected from an R factor analysis, where the number of participants is at least double the number of variables (Kline, 1994), in the Q domain the goal is to explore the subjectivity of a person, so the number of participants is less of a concern. Watts and Stenner (2005) recommend, nonetheless, that an item-to-participant ratio of 1:1 should be maintained if the goal is to have the study published in a mainstream journal, although later on, in 2012, they suggested using twice as many items as participants. The reason for this change of heart was the discovery that certain journals were rejecting papers based

on the “large” number of participants. In conclusion, as a rule of thumb, the number of participants should be less than the number of items in the Q set.

A separate consideration is the recruitment of the participants for a Q analysis. Opportunity sampling is not recommended, as the analysis entails the inversion of traditional factor analytic techniques. This inversion means that the Q set and its items, instead of the participants, constitute the study or person sample (referred to as P sample or P set by McKeown and Thomas, 1988). At the same time, each participant becomes a variable (Watts & Stenner, 2012), therefore similar characteristics in the population would help to identify nuances in the subjective viewpoints amongst them. Furthermore, a large number of participants could be troublesome, as the subtle complexities of subjective perspective can be lost.

The limitation imposed by the usually small samples in Q methodology is that the results obtained are seldom used to make generalisations, in the statistical sense, or to find external validity. Then again, that is not the main goal of this kind of research. As with many studies using small numbers of participants, a Q analysis takes a different look at generalisation and instead centres its attention on concepts, theoretical propositions or models of practice. After Stephenson, there have been different perspectives on this issue and, as we shall see later, there seem to be different branches of Q methodology based on this and other points of view.

To conclude, we would mention that McKeown and Thomas (1988) have two different categories to describe Q methodological studies based on the size of the P set, “intensive” and “extensive”. The first tends to use fewer participants and focuses on intrasubjectivity, whereas the second has a somewhat larger P sample and is interested in the group and clusters that are found and their intersubjectiviy.

2.6.4 The procedure of Q sorting.

As its name suggests, Q sorting is the process of ordering the Q set. This takes place according to the “condition of instructions”. In a more traditional approach the P sample receive their own Q set with a score sheet so that they can write down their preferred ranking. At the foot of the sheet are some questions relating to the sorting task and to the items that were sorted in the extremes of the distribution, and sometimes about participants’ emotional reaction to the topic and Q sort. If the Q sorting takes place in a research facility, one of the members of the research team may conduct a short interview instead, for example questioning participants about their experience of the

sorting, their understanding of the statements and if they would have liked to add more items to the "more salient" category. In cases where a Q set has been standardised (more about this later) or requires external raters, a manual describing each item will be compiled, and some training provided for the raters.

2.6.4.1 Self-report vs observer report Q sorts. There has been a wide, ongoing discussion in Q methodological research regarding self-reports vs observer-rating scores (Block, 1961, 2008; Westen & Shedler, 1999a; Westen & Weinberger, 2004; Westen & Shedler, 2007; Shedler & Westen, 2010; Watts & Stenner, 2012).

It is clear that, when investigating subjective viewpoints, people are best source of data. Westen and Weinberger offer four advantages of self-reports:

> "First, for many questions, people are the most obvious source of data about themselves because they have the widest observational base. If we want to know how much someone thinks about suicide or enjoys interacting with people, we do well to start at the source. Second and related, if we want to know people's explicit beliefs or memories for a particular event or set of events (their conscious phenomenology), we should ask them. Third, from a pragmatic view, self-reports are easy to obtain, and to the extent that they account for a substantial percentage of variance in assessing a given construct, their benefit-to-cost ratio will be high. Fourth, empirically, self-reports have paid off" (2004, p. 599).

On the other hand, there are some disadvantages to the use of self-reports. A well-known limitation is that of self-representational bias, where a person tends to think of themselves as being different to how they behave or feel. They may also like to present themselves in a specific light to the researchers, for better or for worse. A second difficulty is that people do not necessarily have good access to both explicit and implicit cognitive processes. This can affect their reports considerably (i.e. if they focus on the former at the expense of the latter) (Westen, D., & Weinberger, J., 2004, p. 601-602).

If the Q set aims to be objective and standardised, the issue of validity comes to the fore, as this is notably weak in self-report tests (Westen & Shedler, 1999a). Finally, it has been a tendency within psychology to measure skills or aptitudes instead of asking people about them; for instance, we do not ask people how intelligent they consider themselves to be, but instead apply a test that assesses this cognitive ability and then compare the results with those of other people (*Ibid*).

Regarding observer-rated instruments, these have many advantages if the study in question is concerned with psychological constructs. They would, however, require that the individual perspectives of raters be controlled through training in the meaning of Q

set items or statements and how they are assessed (through interviews, recording, etc.) and subsequently ranked. In practice, the raters must provide justification for why they ranked a specific item at a particular point in the distribution and not another. This approach also requires a degree of familiarity with the person who is going to be part of the sample, but at the same time it demands a certain detachment from the "defensive and self-representational biases – biases that can be particularly problematic when patients are asked to describe socially undesirable or embarrassing symptoms or traits" (Westen & Weinberger, 2004, p. 601).

The downside of observer-rated Q sorts occurs where they are based on short communications or non-structured interviews, described by Westen and Weinberger as "unknown and variable data acquisition strategies" (*Ibid, p. 601*). The other difficulty is that these Q sorts must be valid and reliable, the mere idea of which goes against the traditional principle of Q methodology. We will discuss this further when we present the development of the methodology by more contemporary researchers.

2.6.4.2 Distribution. The distribution used in the Q sorting process is a matter that has received special attention from researchers. There are three aspects to consider for a Q set: whether the distribution should be forced (fixed) or free; the number of categories needed to rank the items; and the shape of the distribution (i.e. symmetrical or asymmetrical).

Free vs fixed distribution. Although the use of a free distribution, where participants order the different items without following a specific end pattern, is not unheard of in the Q methodological world, a prearranged or fixed distribution (also known as a forced distribution) is usually preferred (Asendorpf, 2015; Watts & Stenner, 2012; Block, 1961). There are different reasons for following one route or another; below we present the three main differences that Block (1961, 2008) identified in his long career.

Table 2. 1 Main aspects of free vs fixed distribution

Free Distribution	Fixed Distribution
• Obscures recognition of the correspondences present among the evaluations of personality or subjective views.	• Allows a clear, unambiguous assessment of the degree of agreement among Q-sorts.
• Provides fewer discriminations.	• Provides larger and more complex discriminations.
• Provides data which is unwieldly and at times impossible to work with.	• Provides data in a convenient and readily processed form.

Block also concludes that working with a free distribution does not offer more reliability than a fixed approach, although the latter requires participants or raters to discriminate more often between items. Finally, the difficulty with the free distribution is that it is susceptible to the Barnum effect (Meehl, 1956), where, due to the clustering of items at both ends of the salience continuum, a very general description of a person is obtained instead of the more subjective, individualistic picture that Q methodology is looking for (Block, 2008).

Authors such as Westen and Shedler (1999a) consider that the main advantage of a fixed distribution is that it minimises measurement error, as each value must be used by raters the same number of times. “The method maximizes the opportunity to observe statistical relations where they exist but does not, as some incorrectly believe, artifactually inflate reliability or validity coefficients” (Shedler & Westen, 2010, p. 131). If the Q set is to be used by external raters it ensures that they follow the same criteria for placing items in a specific category. The authors consider that, analogous to language, the use of a fixed distribution provides raters with a shared grammar, while the standardised Q set – when ranked by external raters – provides a common vocabulary.

Nevertheless, one notices that even in a fixed distribution scenario there are a great many possible options for arranging the Q set in relation to the methodological aim. It appears that the implementation of a fixed distribution, besides the aforementioned advantages, also owes its preference to its “convenient and pragmatic means of facilitating the item ranking process, both for us as researchers and for our participants” (Watts & Stenner, 2012, p.17).

A final advantage of the fixed distribution is that the correlations found provide a measure of profile similarity. The data can therefore be used to run a Q factor analysis in order to find prototypical profiles – or Q types – “that together efficiently describe the interindividual variation of these patterns” (Asendorpf, 2015, p. 412).

Number of categories. The second aspect of the distribution to be decided is the number of categories to be used in the ordering range. Predictably, the more categories that are included, the greater the number of available discriminations. However, this would present issues when making decisions about categories in the centre of the distribution, as well as increasing the possibility of randomness (Block, 2008).

While Brown (1980), in his detailed work on Q methodology, recommends a nine-category (–4 to +4) distribution for Q sets of up to 40 items, an 11-category (–5 to +5) distribution for Q sets whose items range from 40 to 60, and a 13-point (–6 to +6) for Q sets that have 60 or more items, the final choice of distribution should be practical and easy to use (Watts & Stenner, 2012).

Symmetrical vs asymmetrical distributions. The third and final aspect of the distribution is its shape, which can be either symmetrical or asymmetrical. As these names suggest, the former maintains a regular shape in which a symmetrical number of items are positioned across the categories (except for the "zero" category). The asymmetrical shape, in which this balance is disrupted, has been less studied, but features significantly in the more recent literature.

Traditionally, there are three possible shapes for a symmetrical distribution. The first is a unimodal distribution, where there are a few items at the extreme, an increasing number towards the middle and the greatest number in the "zero" category. The second is a rectangular or uniform distribution, where all the items are sorted in equal number in each of the categories. The third is the U-shaped distribution, where the mid categories have the fewest items and the extremes of the distribution have the most.

More recent studies using standardised Q sets with a fixed distribution have explored the value of the asymmetric shape (Westen & Shedler, 1999a; Blagov, Bi, Shedler & Westen, 2002; Rost, 2014). In these cases, the resultant shape is asymptotic, taking the form of the right half of an Ebbinghaus bell – albeit inverted. In this scenario, the majority of items are assigned to the lowest category, and just a few are categorised at the other extreme of the continuum.

Westen and Shedler have argued that this shape is the best alternative to their specific tool, The Shedler-Westen Assessment Procedure (SWAP) for evaluating personality psychopathology, because it measures characteristics that are not present in most people. Moreover, a similar shape is obtained when measuring general psychopathology with other instruments, as evidenced by the Beck Depression inventory (BDI), where the number of people with a particular score reduces as one moves forward along the continuum. Their final argument is that an asymmetric shape emerged naturally when they asked expert clinicians to rate the SWAP without ordering items in a fixed distribution (Westen & Shedler, 2007).

Figures 2.1 and 2.2 provide instances of two rating sheets for a Q set with a fixed distribution, one with a unimodal shape and the other with an asymmetrical (asymptotic) shape. The figures in parenthesis are the number of items to be allocated in each column or category. For figure 2.1 the hypothetical Q set contains 47 items, whilst for figure 2.2 it contains 61.

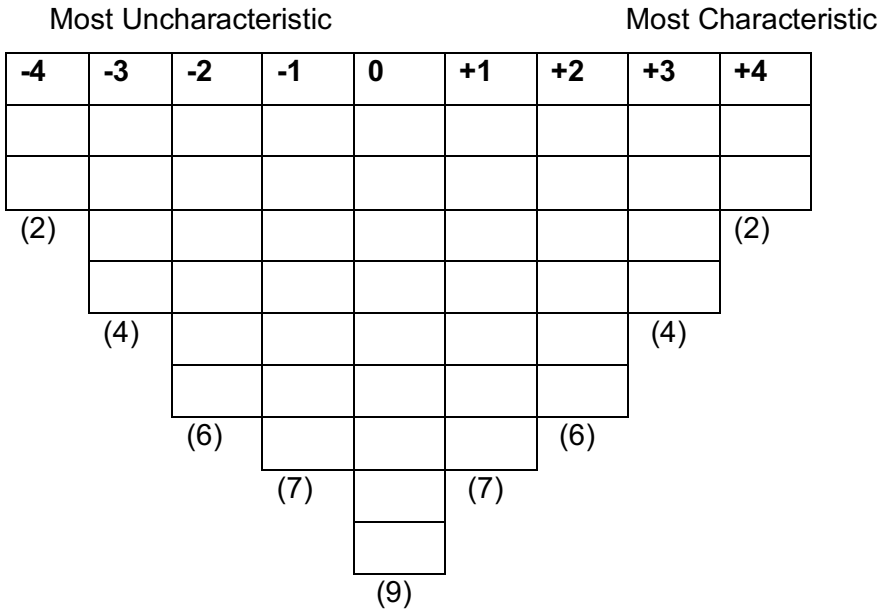

Figure 2. 1 symmetric unimodal distribution

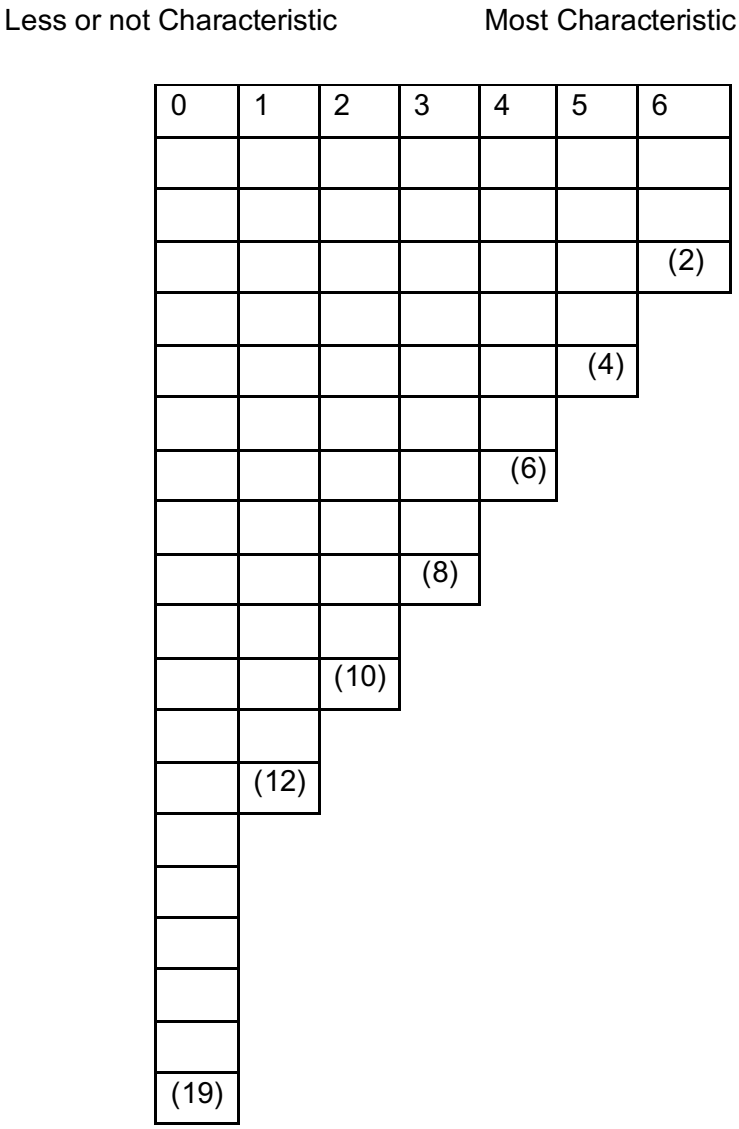

Figure 2. 2 Asymmetric, asymptotic distribution

As we can see, there are many choices regarding the distribution shape. The main recommendation from the literature is to be pragmatic, taking account of the utility of a specific approach to participants or raters and its relevance to the subject matter of research. As a final recommendation, Block (2008) advises that the shape of the distribution should not be bizarre – implying that keeping within the realm of the examples presented here is preferable – while Westen and Shedler recommend that paying attention to the wording of the items (i.e. whether they are meant to be bipolar or unipolar) will also help to determine the optimal shape of the distribution.

2.6.4.3 The sorting procedure. Finally, after the Q set and its distribution have been determined, the Q set is given or posted to respondents, along with instructions on how to rate the items. In the case of Q sets concerned with personality profiling, items are sorted by a participant or by a knowledgeable (or expert) informant "who sorts attributes, such as trait descriptions, according to how well they fit the individual's personality. The resulting Q-sort describes the relative salience of the attributes for that individual and thus a person-centered personality profile" (Asendorpf, 2015, p. 412). Participants are usually advised to make separate, preliminary piles of items that have positive salience, negative salience or are somewhere in the middle. Although this technique works better with a symmetrical distribution, it could also be applied to the asymmetrical approach by grouping the items deemed "more characteristic" and those considered "less or not characteristic", leaving a third pile for the in-between or undecided items. Once these preliminary piles are decided the rater can move to sorting items according to the shape and number of statements per category. This process continues until the rater is satisfied with the result.

2.6.5 Data analysis

Although there are several ways of interpreting data collected through Q sorts, we will focus here on Q factor analysis, as it is the most traditional method and is still commonly used in the field. It is also the approach taken by the present research.

Briefly, the Q analysis comprises three sequential procedures: first, the correlation of Q sorts to identify patterns across participants; second, the identification of clusters of similar viewpoints; and third, the calculation of the factor scores (Barker, 2008). Watts and Stenner (2005, 2012) describe the same process using different terms: they refer to the first step as "factor extraction", which is followed by the "rotation procedure", and finally the "estimation of the factors". Software packages are available to conduct all or part of the data analysis, but understanding the intricacies of the method can help decision-making at each step of the process, as we shall see.

2.6.5.1 Factor extraction. Factor extraction is the first step in the process. As stated before, Q methodology correlates persons instead of tests, so an inversion of the usual method by which a data matrix is analysed or entered into the software package takes place. The intercorrelations of interest here are the ones produced by the participants and their general configurations; the resultant matrix offers a

perspective of how Q sorts are related, and not how individual items relate to each other. This correlation "provides a measure of the nature and extent of the relationship between any two Q sorts and hence a measure of their similarity or otherwise" (Watts & Stenner, 2012, p. 97).

With the intercorrelation of the Q sorts comes an estimate of the variance, that is, the average variability of the data in the study (Field, 2013). According to Kline (1994) there are three types of variance: the first, known as common variance, is "the proportion of the meaning and variability in a Q sort or study that is held in common with, or by, the group" (Watts & Stenner, 2012, p. 98). The second, called the specific variance, is, as its name suggests, the variance that pertains to a particular group of Q sorts, or to a specific person. The third, called the error variance, is produced by the error and imperfections of any given data collection.

With regards to variance Watts & Stenner explain that:

> "The basic function of a factor analysis is to account for as much of this study variance as is possible – i.e. to explain as much as we can about the relationships that hold between the many Q sorts in the group – through the identification of, and by reference to, any sizeable portions of common or shared meaning that are present in the data. These portions or dimensions of shared meaning are our factors" (2012, p. 98).

As factor extraction initially involves the identification and then the removal of the portions of common variance from the correlation matrix, the end products are often called common factors, which represent a shared piece of information that is held in common by its components. The next step in this process requires the assessment of the most adequate technique for data reduction.

There are different options for this procedure, of which Principal Component Analysis (PCA) and the Centroid or simple summation method are the most commonly used (Watts & Stenner, 2005, p. 80, Watts & Stenner, 2012, p. 99). The main difference between these two techniques is that Centroid factor analysis is more flexible and allows the researcher to engage actively in the process of factor rotation from a theoretical perspective (what Stephenson, 1953, referred to as abduction). Brown (1980) agrees with this point, but like other authors is quick to add that this solution is more appropriate for a seasoned researcher who has an idea of what they are looking for in the data. The other method, the PCA, is less popular among Q methodological researchers as it offers a single "mathematically *best* solution" (Watts & Stenner, 2012, p. 99, authors' italics), which many regard as technically coercive.

However, more traditional Q methodological researchers, such as Watts and Stenner (2005), have made use of PCA and report that the results are "equally" satisfying to those produced by the summation technique. The choice of method, they claim, should ultimately be down to the researcher's personal judgement, guided by the type of investigation she or he intends to pursue.

2.6.5.2 Factor rotation. The second step in the analysis of data is factor rotation. This technique is described as identifying relationships among the Q sorts, represented in a factor space or coordinates, which can then be examined from different angles to find the solution that contains most of the Q sorts (Baker, 2006). It involves the transposition of the factors into a configuration that is more interpretable by means of different mathematical transformations.

In other words, factors are conceived as vectors that can be rotated relative to one another: "In so doing the loadings are changed but remain mathematically equivalent. There is thus an infinity of solutions but the simple structure solution is usually chosen" (Kline, 1993, p. 577). The rotation is deemed to be *orthogonal* if the factors are at right angles to each other and can be assumed to be statistically independent and zero-correlated. The other possible rotation, described as o*blique*, assumes that factors are in fact correlated: "their correlation being the cosine of the angle between them" (*Ibid, p. 577*).

Q methodological researchers tend to favour the use of *varimax*, an orthogonal factor rotation that maximises the chances of a mathematically superior solution and "is dependent on the topographical features of the correlation matrix" (Brown, 1980, p. 238), allowing the prioritisation in the emergent factor structure of the participant group (Watts & Stenner, 2005). Reflecting on the work of Thompson (1962), Brown points out that the use of oblique or orthogonal rotation depends heavily on the specific aims of the researcher and on the nature of the data she or he has collected. He considers that neither approach is "correct" and that a judgement based on research aims is needed.

2.6.5.3 Estimation of the extracted factors. Once the rotation is completed the researcher is faced with a decision of how many factors to select for interpretation. A generally agreed approach is to choose factors with an eigenvalue of at least 1.00, although this is recognised to be an arbitrary criterion, as even random data can contain patterns with this value (Brown, 1980, p. 40; Watts & Stenner, 2012, p. 105).

On the other hand, factors with eigenvalues less than 1.00 tend to explain less of the study variance than would a single Q sort. A second requirement is that the extracted factors have at least two different Q sorts (also called factor exemplars) that load significantly to them (Watts & Stenner, 2005), where loading represents the level of similarity between a specific Q sort and the extracted factor. These factor exemplars are Q sorts that bear considerable similarity to the pattern or configuration found in a specific factor, and are therefore examples of it (hence the name).

These factor exemplars are then merged to produce factor scores for each statement. Merging calculates the average of the scores given by raters in the Q sorts associated with a factor. The resulting configuration represents the best estimate of the pattern found in the different Q sorts that make up that factor. The Q sorts that load significantly to more than one factor are called confounders and are not included in this process. Obviously, the Q sorts that do not load significantly to any of the factors are excluded from the process as well. At the end of this procedure, factor arrays are constructed which summarise the predominant view of each factor. It is these arrays that are subjected to the interpretation process (Barker, 2008).

2.6.6 Interpretation.

Some Q methodological researchers tend to favour an interpretation process based on an analysis of items with the most salience, both negative and positive. Nevertheless, information is lost in this approach, as it does not take account of the whole picture offered by the re-established factor arrays, missing, for example, the narrative provided by items in the middle of the distribution. Stephenson aimed to give holistic descriptions of the subjective points contained in the factor exemplar, an approach that still prevails in the work of researchers such as Watts and Stenner.

Broadly speaking, the interpretation phase of Q methodology offers a comparison of the factors extracted in the form of a series of summarising narratives. Each narrative has to be viewed in context: differences in item placement are not interpreted in isolation, but rather the item configuration is seen as a whole in a way that could be supported by the participants' own narrative, if possible. To achieve this wholeness, analysis takes account of items that are consensual between factors – the items that are representative of the most characteristic or most uncharacteristic categories – and any discrepancies within those items, as well (Bryant et al., 2006; Watts & Stenner, 2012).

In order to maintain this holistic perspective, Watts introduced a method called “the crib sheet”, which has two main aims: “(a) [to] be applied consistently in the context of each and every factor; and (b) [to] help the researcher to deliver genuinely holistic factor interpretations” (Watts & Stenner, 2012). The crib sheet contains the items in the Q sort that are salient from different perspectives, as indicated by figure 2.3.

Items Ranked at +4

-
-

Items Ranked Higher in Factor 1 Array than in Other Factor Arrays

-

Items Ranked Lower in Factor 1 Array than in Other Factor Arrays

-
-

Items Ranked at -4

Figure 2. 3 Example of a crib sheet for a hypothetical factor 1 obtained from the unimodal distribution Q sort, as proposed in figure 2.1. Adapted from Watts & Stenner, 2012.

The researcher should give a name to each factor, based on his or her interpretation of the item configuration. The purpose of this is to communicate to the reader in a “precise and catchy” (Watts & Stenner, 2012, p. 160) manner the essence of the viewpoints put forward in the factor arrays. A short demographic description of the participants whose Q sort loaded significantly to the factor is also encouraged, as is information regarding the eigenvalue, the percentage of the variance that it explains and how many participants’ perspectives form the factor (*Ibid*).

2.7 Contemporary developments in Q Methodological Research

2.7.1 The combination of Q and R.

At the beginning of this chapter we referred to the discussion between Burt and Stephenson regarding their perspectives on R and Q factor analyses. We re-introduce the topic here in a variation where the "either/or" is absent and instead we want to emphasise that there is enough evidence to support the possible combination of both approaches. We consider this step to be crucial as contemporary variations of Q methodology seem to have specific thoughts on this issue, leading to disagreements and to research publications taking different stances.

Although many researchers have considered Q methodology to be a simple transposition of R data that is analysed in a by-person fashion, the reality is that Stephenson (1936) seemed to have a more complex idea about what could be done with the data. He differentiated and described four factor systems. In System 1, different tests are applied to a sample of participants, after which an R factor analysis is carried out, using an R matrix. In System 2, "Correlations are calculated between columns, for persons or whole aspects of persons as variables, and factorized by way of inverted factor theorems, that is, obverses of the theorems used in system 1" (*Ibid, p. 191*); this system uses a Q matrix. Systems 3 and 4 involve the transposition of the R matrix and Q matrix respectively. Stephenson himself stated that his interest was focused on what he described as his system 2, but other researchers have made use of the other systems as well.

In her study on the uses of the different systems advanced by Stephenson, Calderon states that:

> "Researchers that utilize standardized Q-sets in psychology, on the other hand, have frequently arranged data as in Stephenson's system 4, analysing data with tests developed for R-matrices (Stephenson's system 1), and with aims that are closer to R-methodology than to Q-methodology. Researchers in this tradition have, for example, aimed to test their Q-sets' validity and reliability (see for example Buckley et al., 2002; Cassibba & Van Ijzendoorn, 2000; Shields & Cicchetti, 1997; Westen, Muderrisoglu, Fowler, Shedler, & Koren, 1997; Westen & Shedler, 1999a); they have used factor analysis of items, a priori scale construction analysis, and item analysis (Buckley et al., 2002; Caspi et al., 1992); and have analysed the behaviour of specific items instead of the entire Q-set item configuration (see for example Ablon & Jones, 1999; Block & Gjerde, 1986; Caspi et al., 1992; Coombs, Coleman, & Jones, 2002; Goodman, Edwards, & Chung, 2012; Jones & Pulos, 1993; Karlsson & Kermott, 2006; Lingiardi, Colli, Gentile, & Tanzilli, 2011; Price & Jones, 1998; Shedler & Block, 1990)" (2014, p. 79-80)

Researchers who develop Q sets with the aim of standardising these for use in a by-person factor analysis are concerned with three aspects of the validity of the instrument. The first, construct validity, examines the capacity of the instrument or measurement tool to really measure the psychological construct it is supposed to measure. The second, convergent validity, assesses the degree to which the results of a measure correlate with those of other measures or tools that were intended to assess a similar construct. Discriminant validity, on the other hand, specifies the degree to which the results of the new measure do not correlate with the scores from other instruments that were not designed to assess the same construct.

There is, however, a recognised difficulty with the validation of Q sets produced by Q methodological research, in that they may be a product of a different system to those used for discriminant and convergent validity purposes. In Stephenson's nomenclature, Q methodological research tends to arrange the data to make it compatible with systems 2 or 4, while the measures that would provide the correlations needed for the two types of validity belong, usually, to systems 1 or 3, making the task of comparison impossible.

Block's perspective is that once groups have been identified as loading significantly to the extracted factors "it then becomes feasible to study the independent correlates of subgroup membership or the relationship among variables as a function of subgroup" (Block, 1961, P. 17). He was aware that the data acquired in an ipsative procedure would be treated as normative, in an R fashion, for this purpose. Transposition of the data is a mandatory step, so that comparison is then possible: "R variables should be viewed as Q persons, the R-person sample should be viewed as the set of Q descriptors. Transposition is easily accomplished once and for all on a computer but is often verbally confusing in speech, whether inner or interpersonal. Attention is required here" (Block, 2008, p. 88).

A further point of discussion about the standardisation of Q sets is the issue of reliability, or "the ability of a measure to produce consistent results when the same entities are measured under different conditions" (Field, 2013, p. 882). More specifically, researchers tend to study inter-rater reliability, the level of agreement amongst at least two raters regarding the same measure. Another method used to estimate inter-rater reliability is the Intraclass Correlation Coefficient (or ICC), which is the degree of "relative homogeneity of the scores within the classes in relation to the total variation of all the scores" (Calderon, 2014, p. 83).

To conclude, some researchers have tried to take advantage of the data offered by Q analysis in order to go beyond Stephenson's aim of producing holistic descriptions of subjective viewpoints. This has not happened without argument, not least from those who regard the introduction of reliability and validity as anathema. Nevertheless, since Block's (1961) attempt to use Q analysis in areas more often associated with R methodological research, such as in studying correlations with other measures and the production of Q-types, a new branch of research has been developed where R and Q are closely linked and used to obtain a type of information that could not be gathered using one technique alone.

2.7.2 Jack Block's approach.

Jack Block (1924-2010) was a researcher based in Berkeley, California, who devoted his professional life to using Q methodology in order to come up with data that could be used in R-like studies. He was explicit about his use of Q:

> "In this approach, Q-methodology is considered as a scaling technique used to organize data to describe in a systematic way particular configurations of themes of the topic under study with the aim of finding common factors between or within *people […]* the application of the Q-sort scaling procedure is viewed as an appropriate, useful, and simple method for a person-centred description of the topic under study in a form suitable for statistical evaluation and comparison" (Block, 1961, quoted in Calderon, 2014, p. 61).

His work was certainly not in the more prototypical realm of Q methodology advanced by Stephenson. From the beginning Block's interest was in giving a defined meaning to items that conformed to the California Q sort (CQ), an observer-rated measure that generated standardised Q types of people's personalities, using psychodynamic constructs. His aim was to offer a quantifiable and explicit personality configuration based on the judgment of several raters, as opposed to what he considered the more informal and subjective evaluation offered by traditional Q methodology (Block, 2008).

Block wanted to develop a standard language for describing a person's individuality in relation to other people. He considered that the CQ was flexible enough to allow the comparison of two CQ sortings, to relate this data to other variables and independent categories, to find prototypes, and to differentiate among the emergent personality types from the Q set (*Ibid*). Brown (1980) considered that Block's 1961 book had more influence on the scientific world than that of Stephenson (1953). As a consequence, researchers using Q techniques have relied more on the work of Block, who like Burt considered that the combination of Q and R methodologies was possible and that it provided an empirical perspective on the study of subjective aspects of personality, as

mentioned previously. This approach has been used to study the process of psychotherapy, for example through the PQS method developed by Enrico Jones (2000).

2.7.3 Enrico Jones.

Enrico Edison Jones (1947-2003) was a psychoanalyst and researcher at University of California in Berkeley. At a time when researchers were directing their efforts at establishing whether therapy worked or not, Jones was more interested in understanding how it worked and which of its elements could facilitate the wellbeing of the patient. For over 10 years, starting in the 1980s, Jones invested his time in developing the Psychotherapy Process Q-set (PQS), a 100-item ipsative, observer-rated instrument that describes a psychotherapeutic session in three main areas: 1) the attitudes, behaviours and experiences of the patient; 2) the attitudes and actions of the therapist; and 3) the nature of the interaction between patient and therapist during the treatment.

The PQS was pioneering in the field of psychotherapy process research and was considered to provide a basic language for what happens in the clinical setting and a way for it to be measured using a quantitative analysis. The instrument captures what is unique to each treatment hour and at the same time allows for comparisons between hours to find similarities and differences within a patient's treatment or a group of patients, or even treatment modalities (Katzenstein, Fonagy & Ablon, 2010).

Jones also changed the perspective of research in this area. He decided to look at the therapeutic session as a unit of inquiry, instead of talking separately about the individuals (patient or therapist) that participate in it. His Q set implemented a language to talk about each member of the therapeutic dyad and the interactions between them. He called this approach an interaction structure theory, and it looked mainly at two complementary dimensions: insight and the relationship. He considered that neither of these dimensions on its own could bring change to the patient, but rather change is facilitated "by the mutual exploration and shared understandings of patterns in the therapy relationship" (Katzenstein, Fonagy, & Ablon, 2010, p. 266), or in his own words, "Therapeutic action is located in the experience, recognition, and understanding by patient and therapist of these repetitive interactions" (Jones, 2000, p. 4)". These repetitive factors in the therapeutic relationship shed light on the psychological motivations of both participants. The psychometric properties of the PQS have been discussed amply (Jones, 2000; Smith-Hansen, et al., 2011).

2.7.4 Jonathan Shedler and Drew Westen.

Between 1989 and 1990 Jonathan Shedler collaborated in an ongoing longitudinal study that Block was directing. They used the California Q Sort and it seems that Shedler became interested in the "empirical generativity of the method" (Block, 2008, p. 112). Later in the 90s, in a series of scientific publications, Shedler and his colleague Drew Westen presented the first results of a new measure to assess personality pathology, the Shedler-Westen Assessment Procedure or SWAP.

The two followed closely the procedure that Block had established with the CQ. For example, their instrument adopted a standard language and used a fixed distribution to achieve commensurateness. It also performed an aggregation of Q sorts in order to enhance the reliability of the composites, thus relying heavily on the idea of Q types or prototypes. Finally, following sorting by a clinical expert, the factor analysis used Q sort correlations (*Ibid*). The overall aim of the research was to "develop dimensional prototype models for personality diagnosis as an alternative to the categorical approach of Diagnostic and Statistical Manual of Mental Disorders, fourth edition" (Blagov, Shedler & Westen, 2012, p. 371).

One of the innovations introduced in their approach was the use of items or statements as unipolar dimensions. As mentioned before, Q methodological research seems to prefer the use of items that can be ranked on a bipolar continuum (most uncharacteristic to most characteristic). The items in the SWAP, by contrast, represent a unipolar construct, and therefore the fixed distribution is asymmetric. Half of the total items are ranked in the zero category, meaning they are not applicable to the person being measured, and progressively fewer items are ranked in the higher categories.

The academic community has been more critical of aspects of this method, concerning validity and psychometric soundness, than of the Q analysis itself. As might be expected, the same reservations held toward Block applied in this instance. The authors, who have been publishing extensively over the past two decades, tackled these concerns in a 2012 paper co-written with Blagov, where a reservation held by Block himself was also addressed.

2.8 Limitations of Q Methodological Research

The more contemporary perspectives on Q methodological research could be said to have the same difficulties associated with the approach taken by Stephenson but, at

the same time, their own shortfalls. To conclude this chapter, we would like to refer to the most prominent difficulties and advantages of both methods in the hope that it will help to clarify the approach that we have taken.

Since the appearance of Stephenson's paper in 1935 there has been widespread misunderstanding of his idea of correlating individuals instead of tests (Brown, 1980). In Stephenson's time, the controversy with Burt and Thomson, and the fact that all three authors used the letter "Q" to signify a departure from the traditional R analysis, merely complicated matters, as there was not always a clear distinction between their perspectives. As mentioned earlier, this led to misconceptions about Q methodology in the research textbooks, both in the quantitative and qualitative domain.

Another criticism levelled at Q methodology is that, increasingly, the preparation of items in a Q set reflects the individuality of the researcher rather than the viewpoint of the P set. Researchers have tried to overcome this by having all the items reviewed by different people and by piloting items ahead of the intended research. Instances of such an approach are the work of Block, Jones and others, who have worked for the establishment of a reliable way to use the items. They have also championed the idea that Q and R can be mixed[7]. In the case of standard Q sets, attempts have also been made to use reliability tests to ensure that items are well understood by the use of clear non-technical language.

In the case of traditional Q methodology, McKeown and Thomas (1986) consider that at times the P sample will find the task of Q sorting too mentally taxing. An added difficulty is that, as some researchers still prefer to send instructions and score sheets by post, there is no guarantee that the task will be carried out as it is supposed to be. Furthermore, the time needed to complete a Q sort can cause participants to lose interest, while the wish to finish the task quickly can interfere with the process of category discrimination. Even where raters are experts in sorting, the task of completing several Q sets in a row can be demanding. Although in this final case familiarity with the process and with the Q sort can facilitate the procedure, the risk is that the rater will conduct the task in a mechanical fashion, such that the aim of evaluating each item in relation to all the others in the Q set is lost.

[7] More contemporary examples of this approach are those of Calderon, 2014 or Rost, Luyten & Fonagy,2017)

A closely related objection, addressed by Watts and Stenner (2005), is that some researchers consider the process of Q sorting to be a passive task. But as we have seen, this statement shows a misunderstanding of what the process of Q sorting entails. In the case of expert or observer-rated Q sorts, the ranking needs to be justified by the rater's observations, making the task quite onerous at times. In the more traditional Q methodology "the self is always and intimately involved, for they are always a person's own thoughts, *his* evaluations and *his* interpretations, which contribute to the final ordering of statements" (Brown, 1980, p. 44, author's italics). Furthermore, the use of interviews or questions in the response sheet encourages the participant to reflect on the task as a whole, and to provide more information if they choose to.

One final objection and limitation to Q methodological research comes from the fact that the traditional approach tends to use a discrete number of participants, placing emphasis on the interpretation of the extracted factors, while more contemporary perspectives prefer to have as many participants as possible, with the aim of using the Q set as a standard measure. As Watts and Stenner commented, this lack of consensus can be problematic when a researcher seeks to publish their findings: some journals are not even aware of the optimum P sample, while more specialised journals tend to stick rigidly to a perceived norm.

Despite these difficulties, we found an innovative and statistically sound methodology in the work of Stephenson, followed by Block, Jones and Westen and Shedler. Our purpose in this research was to continue in the tradition of Q methodological research in the implementation of a person-centred approach, but to then go further and use the data produced in an R-oriented analysis, as first proposed by Burt. This combination of Q and R is by no means a novelty, as we have seen in the studies quoted in this chapter. We therefore feel justified in describing our investigative method as a "mixed methods" approach.

2.9 Conclusion

Stephenson's interest in finding an empirical way to capture and study subjectivity led him to challenge established methodological practice and push forward continually "the possibilities and fruitfulness of quantifying the individual case" (Block, 1961, p. 125). The shift from a variable-centred to a person-centred approach formed the basis of a new kind of research that only later became known as "mixed methods research" (Ramlo & Newman, 2011). Stephenson (1953) was very clear that "the purpose of Q

methodology studies is to measure subjectivity although it does so objectively because subjectivity is made operant through factor structure" (quoted *Ibid*, p. 183).

In an exciting new approach, contemporary researchers have embraced Stephenson's idea and expanded its applicability: in the case of Block, by promoting better integration with the quantitative dimension of research, instead of rejecting this completely. His Q sort method, however, remains a person-centred approach, as it is characterised by "the judges' subjective impressions of the person qua person while also possessing the objective methodology and quantitative yield of trait-rating procedures" (Ozer, 1993, p. 151). New difficulties that have emerged, such as bias among raters, have been dealt with through the use of composite Q sorts and a process of standardisation of multiple clinical raters. It is this special characteristic of Q methodology in providing both narrative and quantitative data that allowed researchers such as Enrico Jones (2000) and Westen and Shedler (1999a) to claim that it bridges the gap between research and clinical perspectives. This proposition is central to the current research, as will be seen in the following chapters.

We believe it is important to recognise that, while many researchers consider that they are using Q methodology, this does not mean that they all are doing the same thing, or that some of them are wrong and others are right. Perhaps there is no longer a core essence to Q methodology, as Stainton Rogers and Stainton Rogers (1990) argue. What matters most, in the context of the current research, is that the same rigour and effort put into finding common subjective viewpoints of clinical participants is employed in delivering sound interpretations of sound data, as the work of the above-mentioned researchers shows.

Having reviewed the literature on mentalising and Q methodology, our next step is to describe the process of developing a new instrument for assessing mentalising in a therapeutic context. This instrument was intended from the outset to be an observer-rated measure, therefore placing us in the Q methodological tradition begun by Block and continued by others; this link will become clearer in the following chapters. After following the steps described here for the creation of a standardised Q sort, we performed a Q methodological analysis using this instrument, which we will describe in detail in the next two chapters.

PART II:

DEVELOPMENT, PILOTING AND TRIALLING OF THE MQS

Chapter 3: Study 1, Development of the Mentalising Profile Q Sort (MQS)

Chapter Overview

This chapter describes the development and results of two closely linked sub-studies for the development of a Q set to assess mentalising and its different components. Participants included experts in mentalising theory and clinical practice (for the first sub-study, in order to evaluate content validity), and a random selection of participants from the Randomised Evaluation Study of Dynamic Interpersonal Therapy (REDIT) (for the Q set pilot, to assess the instrument's reliability and internal consistency). Based on the current literature on mentalising and its conceptual overlaps, a set of 134 items were sent to experts in Europe and the USA. 112 of the items were considered to have an acceptable content validity. After piloting, the 71 items with the highest statistical significance were used to create the Mentalising Profile Q Set (MQS). The initial psychometric characteristics of the Q sort are presented and discussed below.

Introduction

In the present study, we aimed to develop a Q sort that would assess the process of mentalising of a patient, or group of patients, during a therapeutic session. Based on Q methodology – described in detail in the previous chapter – we followed the necessary steps in order to obtain first a concourse and then the required Q set. As we were looking to create a standardised instrument, we adopted a well-established methodological approach recommended by Block (1960, 2008), Westen and Shedler (1999a, 1999b) and Jones (2000).

3.1. The Gathering of the Concourse

The creation of the concourse, or the set of viewpoints or statements contained within items to be ranked, is the first step in any Q methodological research. Representing as it does the universe of viewpoints on a subject, the concourse holds a central place in any Q methodological analysis, and is one of its most distinctive features. Watts and Stenner (2012), in their review of the literature on this topic, showed how different researchers have their own way of constructing a Q set. This variability led the authors

to conclude that there is no single or correct way to generate a Q set. However, a common feature of the methodologies reviewed – which Watts and Stenner strongly endorse – is that a Q set should always be tailored to the main objective of a research question. As our research aimed from the beginning to create a new instrument that would allow clinically-trained observers to assess the mentalising capacity of patients in a specific psychotherapeutic session, our approach to developing Q set statements was rooted in and inspired by the academic literature. Therefore, we considered that a detailed literature review would be beneficial to our goal, as the topic of mentalising has many components (polarities), which can be viewed in different ways (i.e. section 1.3 and 1.4).

Based on this literature review, we considered that the best approach to building a universe of viewpoints to be sorted was through the use of written statements that could be placed on cards. Although Stephenson (1953) considered the inclusion of other manifestations of human subjectivity, such as pictures or music, we deemed these unsuitable, given the nature of the data that we had at our disposal, i.e. audio recordings of mostly verbal communication between patients and psychotherapists. We aimed instead to construct a final Q set which would represent, in a broad way, relevant perspectives in relation to the different aspects of mentalising.

As mentioned in chapter one, although other measures are available for assessing mentalisation, the difficulty we have found with these is that they assess specific elements linked to different polarities of mentalising, or rely solely on guided self-reports[8], providing only partial information about the patient's mentalising capacity. Our preferred approach followed Watts & Stenner's (2005) advice and aimed to generate the broadest possible range of statements, which would be refined in the process of establishing the Q set at the heart of this study.

We turned first to the mentalising literature to explore the possible use of existing scales that come close to measuring aspects of mentalising; in other words, we examined the theoretical overlaps (Choi-Kain & Gunderson 2008; Vrouva, Target &

[8] Over the course of the present research at least two new measures that assess mentalising, or aspects of it, were developed from within the mentalising research community in the United Kingdom and in The United States of America. They include the Reflective Functioning Questionnaire (RFQ), developed by Fonagy, Luyten, Moulton-Perkins, et al, (2016) and the Mentalized Affectivity Scale (MAS) (Greenberg, Kolasi, et. al., 2017; Jurist, 2018). Both of these are self-rating measures, where the patient or participant gives responses based on instructions. They therefore have the limitations we discussed in chapter one. That being said, we consider both tools to be welcome additions to the mentalisation literature.

Ensink, 2013) such as mindfulness, empathy and theory of mind, among many others. This evaluation of other scales in order to develop a concourse is a common step in Q methodological research (Watts & Stenner, 2012). Recent instances of this approach can be found in the work of Schneider (2004) and Calderon (2014), who both took Jones' PQS as a template (Calderon also relied on Schneider) for Q-sets to assess the psychotherapeutic process with children and adolescents, and Rost, Luyten and Fonagy (2017), who turned to the SWAP-200 method of Westen and Shedler (1999a) to assess the introjective and anaclitic aspects of personality (Blatt, 2008). More classical references take us back to the research of Jack Block and colleagues, who regularly used their own established descriptions of personality to finesse their psychometric scales (Block, 2008).

Therefore, our concourse was populated with items that were adapted from many different scales, such as the Cognitive Affective Mindfulness Scale-Revised (CAMS-R – Feldman et al., 2007), the Empathy Quotient (Lawrence et al., 2004), the Freiburg Mindfulness Inventory (FMI – Walach et al., 2006), the Interpersonal Interactivity Index (IRI – Davis, 1983), the Kentucky Inventory of Mindfulness Skills (KIMS – Baer et al., 2004; 2006), the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT – Mayer, Salovey & Carusso, 2002), the Mental States Task (MST – Beaulieu-Pelletier, Bouchard & Philippe, 2012), the Mindful Attention Awareness Scale (MAAS – Carlson & Brown, 2005), the Reflective Function Scale (RFS – Fonagy et al., 1998), the Shedler and Westen Assessment Procedure (SWAP – Shedler & Westen, 2007), the Object Relations Inventory (ORI – Blatt & Auerbach, 2003), the Psychological Mindedness Scale (PMS – Shill & Lumley, 2002), the Psychotherapy Process Q-Set (PQS – Jones, 2000; Ablon & Jones, 2005) and the Toronto Alexithymia Scale (TAS-20 – Bagby et al., 1994).

We also reviewed the literature relating to mentalising and its polarities, and to its conceptual overlaps, such as psychological mindedness (Appelbaum, 1973), among others. At the end of this process, we arrived at 138 items for our concourse which, in our view, broadly covered our topic of interest.

3.2 The first Q set samples

The statements we selected were re-examined and re-written so that they could be used by an observer-rater. As some of the scales we adopted were originally devised as self-report tools, we changed aspects of their wording to match our research

purposes. For example, item 32 of the PMS, “I really enjoy trying to figure other people out”, was re-written as “Patient enjoys trying to figure other people out”, while item 4 of the TAS, “I am able to describe my feelings easily”, became “Patient describes his/her feelings easily”.

The adopted and adapted items were also organised according to the aspect of mentalising we considered they were addressing. For instance, using the two examples from above, item 32 of the PMS was assigned to the “other-oriented” polarity of mentalising, whilst item 4 from the TAS was matched with both the “affective” polarity and the “self-oriented” polarity (the topic of the polarities in mentalising was explored in chapter 1). We ended up with eight categories that represented each of the four dimensions of mentalising (automatic vs controlled, internally focused vs externally focused, self-oriented vs other-oriented, cognitive vs affective), together with a further group of items relating to the therapist’s mentalising process when interacting with the patient[9]. These item clusters were then reviewed and individual items deleted if they were considered redundant or irrelevant to the aims of the research. At the end of this process we agreed on a total of 110 items, which were put forward for initial testing.

The selected items were presented to a group of nine researchers (3 females, 6 males), each of whom was familiar with the literature on mentalising and were part of the Psychoanalysis Unit of University College London. An accompanying booklet provided a generic description of mentalising and of each polarity. We asked participants to review each item and to assess its appropriateness to the subject matter and research goals. This involved a judgement of (a) the suitability of the item in relation to the category that it represented, (b) the clarity and conciseness of the wording (c) whether items expressed a specific (i.e. just one) aspect of mentalisation (we wanted to avoid double-barrelled or indeterminate phrasing – Block, 2008) and (d) whether items were “neutral”, i.e. did not suggest that the characteristic represented was preferable or undesirable in comparison to the others (in order to minimise the possibility of suggestion, or of bias on the part of the sorter).

The feedback we received helped us to condense and remove ambiguity from several items. For instance, the wording of an item intended to assess explicit process,

[9] Examples of this group of items are: “The therapist asks for more information and elaboration”, “Therapist intervenes linking cognition with emotional states”, “Therapist seems engaged in the clinical relationship” or “Therapist differentiates real vs. fantasised meanings of experience”.

“Patient reflects on his losing his mentalising capacity when in stress”, was considered unclear with regards to timing: did it refer to the “here and now” or some past incident? In the case of the other-oriented polarity, an item from SWAP II, “Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices”, was considered to be the same as one item from the PQS, “Patient blames others, or external forces for difficulties”.

The comments of the feedback group allowed us to refine and reduce the number of items to 94 of the original set. As well as being clearer in their wording, the surviving statements better represented the global dimensions of mentalising. However, an issue emerged at this stage which was discussed in depth with the project’s supervisors: although the Q set seemed to have improved, the need to include a group of items relating to the therapist’s mentalising ability had been questioned by ourselves. We considered that, as the Q set’s wording aimed to assess mentalising performance at the level of the individual (and not the particular influence of the interaction between patient and therapist), the small number of items relating to the mentalising capacity of the therapist should be discarded. We were aware that this decision could be considered, eventually, a limitation of the assessment tool but it also gave more specificity to the Q set.

A further issue raised by colleagues was that, while we had included items that described each of the mentalising polarities in line with our research goals, the draft Q set lacked any explicit reference to difficulties in mentalising relating to pre-mentalising modes of experience. How would a session in which a patient showed serious limitations in mentalising ability – evidenced, for example, by heavy silences punctuated by brief periods of dialogue in which the patient was unable to convey much of a reflective process – be recognised in an item sorting? With this in mind, we opted to make a further distinction between items by dividing them into new categories covering pre-mentalising modes (psychic equivalence, teleological stance and pretend mode), non-mentalising and mentalising proper. To accommodate these new theoretical dimensions, we also increased the overall number of items to 134, after going back to the literature and adding more statements related to the additional categories.

In reviewing and enhancing the items which made up the concourse, we aimed to achieve a balance between the various dimensions of mentalising as a theoretical construct. We tried to include a roughly equal number of items in all the categories

that formed part of the assessment scale. We followed a theoretical approach in order to guarantee that these dimensions were represented by the revised set of 134 items. Once we had established the concourse, we needed to test it to ensure that the final Q set had statistical rigour and provided an objective appraisal of mentalising capacity.

In the following sections of this chapter, we describe two sub-studies for the initial validation of the developed Q set. The first examines the content validity of the items, and the second assesses the Q set's internal consistency and inter-rater reliability.

3.3 First Sub-Study: Face Validity of the MQS Items

3.3.1 Participants.

To assess the content validity of the proposed Q set we asked specialists in mentalising research and practice to rate the accuracy of individual items. Starting in the spring of 2016, we sent a series of e-mails to 39 (16 females, 23 males) expert researchers and clinicians in the area of mentalising in Europe and the USA. Participants were asked to rate on a Likert scale, from 0 (not at all prototypical) to 7 (highly prototypical), how well each of the items captured the characteristics and features of the various mentalising polarities, pre-mentalising modes, effective mentalising and ineffective mentalising categories (see Appendix 1 for the instruction letter that was sent and Appendix 2 for the list of items per category).

To make this task less burdensome, we divided participants into three different groups as follows: group A was asked to rate items in the mentalising, internally focused, externally focused and teleological mode categories; group B was asked to rate items in the controlled, automatic, non-mentalising and psychic equivalence categories; and group C was asked to rate items in the cognitive, affective, self-oriented, other-oriented and pretend mode categories. We invited all the experts to provide comments relating to the items themselves and the task of rating, and to give a percentage of agreement – from their perspective – of how well the items as a whole represented the aspect of mentalising they were assessing.

3.3.2 Results and Discussion.

We received 19 (48%) responses from our chosen experts (10 females, 9 males), which we used to select the final items for the Q set. One respondent did not follow

the instructions and instead of using the Likert scale provided written comments only. In the case of the remaining 18 mentalising experts, we considered statements with a median Likert rating of 5 or above to be suitable for inclusion in the final Q set. However, this cut-off point proved challenging for categories with relatively few items, such as the externally and internally-focused categories. We decided, therefore, to retain seven items with a median rating of less than 5 (see table 3.1 below) in order to balance the number of statements between categories. Other items that did not achieve this cut-off value were deleted (see Appendix 3 for the list of all the items and the medians obtained).

Table 3. 1 Items that received a median expert rating below 5 but were maintained as part of the Q set.

Category	**Item**	**Median**
Automatic	Patient tends to perceive things in broad and generic ways (e.g., he/she misses details and/or glosses over inconsistencies).	4.5
Internally Focused	Patient tends to be easily affected by his/her beliefs about others' states of mind.	3
	Patient seems to have difficulties understanding non-verbal indicators of others' states of mind (e.g., facial expressions, use of eye contact, body posture and movements, etc.).	3
Externally Focused	Patient is overly sensitive to how others look or behave.	4
	Patient tends to talk about or describe others mainly in 'concrete' terms, such as their physical attributes (handsome, sexy, ugly) or in terms of their activities or social status.	4
	Patient has a tendency to attribute how he/she feels to external or environmental factors (e.g., the weather, fate, other people's actions).	4
Cognitive	Patient tends to consider the advantages and disadvantages of a specific situation and take them into account when making decisions about the situation.	4

The mean percentage of agreement regarding how well items represented their particular category was 82% for group A (range 70% - 95%), 79% for group B (range 60% - 91%) and 84% for group C (range 73% - 95%). With the elimination of 22 of the 134[10] items that did not reach the desired score (with the exception of the seven items in table 3.1), the Q set was left with 112 items. This is still a considerable number by the standard of traditional Q methodology (Watts & Stenner, 2012; Brown, 1980).

Overall, we found that experts embraced their task with interest and were very supportive of the project. They reported that most of the items were clear and represented the aspect of mentalising they were intended to represent. However, some issues arose with aspects of the Q set. For example, respondents noted that certain item descriptions in the automatic and externalising polarities were related to the use of body language and non-verbal communication. As we expected to test the final Q set using audio-recorded sessions, these would be challenging to assess. Based on this and other feedback, a number of items were subsequently reworded, so that the non-verbal communications were picked up by their narrative. Such was the case of the externally-focused item "Patient tends to describe other's intentions/states of mind based on gestural/behavioural cues", which was reworded as "Patient notices and responds to non-verbal cues (e.g., facial expressions, use of eye contact, body posture and movements, etc.) from other people". Another such item was the other-oriented item "Patient seems willing to be liked by the therapist (fears to be rejected but don't know it)". This was deleted as it required too much interpretation on the part of the sorter.

Having selected the items of the concourse that met statistical significance for the creation of a Q set, our next step was to pilot these with actual psychotherapeutic sessions to test the reliability of the Q set as a whole.

3.4 Second Sub-Study: Piloting of the Q set and Establishment of the final Q Set

After changing the wording of certain items, as suggested by the experts, we set about determining the scope of our second sub-study. The aim of this was to pilot the 112 items that described the different categories of mentalising, pre-mentalising and non-

[10] See Appendix 2 for a complete list of the items.

mentalising in recorded psychotherapeutic sessions, using two independent raters, to calculate the internal consistency of the Q set and scale correlations. These measurements would allow us to identify items with strong statistical significance and the highest Intraclass Correlation Coefficient (ICC) value (Shrout & Fleiss, 1979; Kline, 1994; Field, 2015). At the end of this study we expected to have a final set of items for the concourse which would become the Q set for our Q analysis.

Methods

3.4.1 Participants.

For the piloting of the Q sort items we used data from the "Improving Psychodynamic Psychotherapy in Primary Care: An Evaluation Study of Dynamic Interpersonal Therapy (DIT)" (REDIT) study, a randomised evaluation of the effectiveness of DIT for individuals diagnosed with moderate to severe depression (Fonagy & Lemma, 2013). The inclusion criteria for this study required participants to be 18 years old or above, to have been diagnosed with Major Depressive Disorder (MDD), with or without dysthymic disorder (according to DSM-IV criteria), to have scored above 14 (in the moderately depressed range) on the Hamilton Depression Rating Scale (HSRS-17) (Hamilton, 1967), a widely used observer rating scale for depression with proven psychometric properties (Bagby et al., 2004), to have scored above 10 on the Patient Health Questionnaire (PHQ) (Kroenke, Spitzer & Williams 2001), and to have a confirmed need for high-intensity treatment, determined either at triage, following referral or by a low-intensity worker or supervisor. Participants were excluded from the study if they had current psychotic symptoms or bipolar disorder, were on antipsychotic medication, had a diagnosis of complex personality disorder, reported historic or current self-injury/parasuicide, had a historic or current eating disorder, were excessive users of drugs/alcohol, were non-English speakers, had participated in another depression clinical trial within the last year that involved CBT, had received previous unsuccessful CBT treatment, were identified has having a clinical contra-indication to short-term psychotherapy (e.g. an attachment history of multiple separations, serious ongoing trauma in childhood or multiple caregivers, suggesting the need for longer-term psychotherapy), showed evidence of pervasive use of help, or were highly unstable or insecure in their life arrangements (e.g. with a history of domestic violence) (Fonagy & Lemma, 2013).

DIT is an integrative, brief (16 sessions) psychodynamically and interpersonally-oriented intervention, developed from the work of an Expert Reference Group in identifying the key clinical competences of manualised psychoanalytically-oriented psychotherapies (Lemma, Roth & Pilling, 2008). The approach focuses on the patient's relationships, both internal and external, in the context of current life difficulties which have caused symptoms of depression and/or anxiety (Lemma, Target & Fonagy, 2010). DIT is currently offered as a treatment for depressed patients within the NHS and is one of the few evidence-based psychodynamic treatments.

For the present sub-study, we took a random sample of 20 (15 female, 5 male) individuals who were receiving DIT. Thirteen participants were white, two were Asian/Asian British, two were Black/Black British, one was mixed race, and one was Brazilian. Their ages ranged from 19 to 58 years (M = 33.5, SD = 11.3).

3.4.2 Procedure.

The observer raters for this study were a clinical psychologist (the author) and a psychiatrist. They listened to and rated the sample of the randomly selected sessions from the course of the DIT treatment. Blinding to the phase of treatment was impossible, as there were certain recognisable elements in the structure of a DIT treatment that gave away the stage of the patients' treatment (such as when the therapist talks about the goodbye letter at the end of treatment, or when the therapist and patient formulate goals for the treatment in an early session). The unit of observation was the entire session, which usually lasted 50 minutes.

We followed Block's advice on increasing the Q sort reliability among different raters:

> "A fruitful practice in these instances is to have the several appraisers calibrate themselves by describing the same person. Discrepant observers then can come to identify the basis of their disagreements; they can separate disagreement due to genuine differences in evaluation from unwanted discrepancies due to differing interpretations of descriptors. A series of calibration sessions can do much to converge the verbal understandings of observers initially not attuned to the CAQ descriptors. In preliminaries to research in which the CAQ-set is to be used, such calibration sessions can be helpful to the appraisers involved." (Block, 2008, p. 42)

The 112-item Q-set was edited in Microsoft Word so that each item could be printed on cards measuring 9 x 4 centimetres (another recommendation by Block, 2008). We also prepared a spreadsheet in Microsoft Excel to be filled in over time with the completed Q sorts from all the rated sessions. Each rated Q sort would be identified by the patient's code and the number of the session for which the Q set was sorted.

The author delivered a training-like presentation of the Q set to the second rater, covering topics such as how the concourse was created, the basics of Q methodological research as a by-person approach and how we intended to use the Q set in our ongoing research. We read the items of the Q set together and clarified aspects that were not immediately obvious or needed further elaboration. Throughout this process we took notes that could be used eventually for the final Q set and possible manual.

Once we agreed on the meaning of each statement contained in the Q set, we listened to an audio recorded session together and, based on the notes we had both made, rated items using a 1 (less characteristic or absent) to 7 (most characteristic of the session) Likert scale, with a non-fixed distribution. We analysed our scores for all the items and their rankings, making sure that we were using the same data from the session (referring to our notes where necessary) in order to arrive at a conclusion.

When we considered that an initial agreement about how to rate the items had been reached, we listened to two further sessions together but this time we rated them separately. Once this process was finished, we discussed, as before, the rankings provided for each of the items and continued to clarify descriptions where needed. Finally, we listened to and rated two other sessions separately. As Block suggested, we wanted check the degree of "calibration", but this time only the items that had more than one point of difference in our ratings were discussed. This process took two days.

When the "calibration" process was completed we had a better common understanding of how to use the items reliably, and had developed a short explanation or definition of items we thought might be problematic, either because they were not specific enough or they could be open to interpretation, something we wanted to avoid. For example, the item "Patient keeps track of his/her own thoughts and feelings" was thought to be too generic: a clarification that we considered would help in its assessment in the sessions was therefore added to the bottom of the statement, "Patient names and distinguishes the mental states and thoughts that they are experiencing and is able to link them with events in their everyday life". This extra specificity was intended to make clear the required parameters to assess this item in the psychotherapeutic sessions.

A final step in this process was to rate the remaining 15 sessions. This time, each of us listened to and rated the same seven sessions separately, after which we met again

to “recalibrate” our perspectives by rating together one last session. Finally, we listened to and rated individually the final seven randomly selected sessions.

3.4.3 Results and discussion.

There are several statistical criteria that can be used in order to identify poor items. Once a Q set has been piloted, the statements with low rater agreement, or with low standard deviation, among other criteria, may be deleted depending on the intentions of the researchers (Ozer, 1993). One such criterion, Coefficient Alpha (or Cronbach’s alpha), is an important element in research in that it measures the reliability of a scale, more specifically its internal consistency (see Cortina, 1993 for a detailed study of this construct and its use in psychometrics). Another criterion is the Intraclass Correlation Coefficient (ICC), which is used widely in the assessment of consistency between different judges’ rating of a set of data (items or objects); this correlation evaluates the congruence between measures of the same type (Field, 2015).

For this research, the agreement between the raters was examined using the two-way random absolute agreement ICC provided by IBM SPSS version 24. The mean ICC for the 15 sessions rated was 0.583, considered to be an acceptable agreement[11] (Landis & Koch, 1977). Coefficient Alpha was calculated and item total and inter-item correlations were examined.

Four items[12] (25, 35, 37, 38) showed no variation at all and were discarded from the analysis and deleted from the Q set. The items with the lowest item-scale correlations

[11] Although is it claimed that Nunnally (1967) advocated higher levels of reliability, the truth is that he stated that the level of reliability depends on how the measure is being used. For instance, he wrote that “In those applied settings where important decisions are made with respect to specific test scores, a reliability of .90 is the minimum that should be tolerated, and a reliability of .95 should be considered the desirable standard”, but at the same time he recognised that in the early stages of research one can save time and energy working with instruments that have just a modest reliability (quoted in Lance, Butts, & Michels, 2006, p. 205-206). Such an approach was taken by this study.

[12] 25) “Patient talks about thoughts and feelings in an incoherent way: the observable affect does not match what he/she says, and vice versa (e.g. description of loss not accompanied by negative affect, or something positive reported in a neutral tone)”. 35) “Patient asks for more sessions with the therapist.” 37) “Patient responds badly at the end of the session indicating they feel abandoned, uncared about or not of sufficient interest.” 38) “Patient threatens to harm (or acts upon it) him/herself in response to emotional/psychic pain in order to avoid reflecting on what upset him/her”.

were eliminated, and the items with high inter-item correlation were reviewed to ensure they did not duplicate other items. This process continued and the Coefficient Alpha was repeatedly recalculated until we had roughly the same number of items per sub-category so that the final Q set would represent all the different polarities of mentalising in a balanced way. This led to a Q set with 71 items (see tables 3.3 to 3.11) and an overall Coefficient Alpha of 0.955, which is considered to be excellent.

The final Q set was named the Mentalising Profile Q Set (and given the acronym MQS). It is composed of 71 items that describe 9 sub-categories of mentalising, including its four polarities, the three pre-mentalising modes, non-mentalising and proper mentalising items. The complete MQS manual can be found in Appendix 4.

Table 3. 2 Final Coefficient Alphas for each subcategory/subscale, and total of items.

Subcategory	**Coefficient Alpha**	**Number of Items**
Controlled vs Automatic	0.75	13
Internal vs External	0.87	10
Cognitive vs Affective	0.87	8
Self vs Other	0.93	12
Mentalising	0.95	8
Psychic Equivalence	0.91	5
Pretend Mode	0.8	5
Teleological Mode	0.6	4
Ineffective Mentalising	0.92	6

Table 3. 3 Coefficient Alphas for the Mentalising Sub-scale if Item was deleted.

Mentalising, Coefficient Alpha: 0.95	
Statement	**Cronbach's Alpha if Item Deleted**
Patient is open to exploring experiences and memories even if they are painful.	.941
Patient acknowledges that people (including him/herself) can have somewhat incompatible emotions and thoughts, even contradictory ones, at the same time.	.946
Patient shows realistic expectations and accurately anticipates the extent to which their own and others' emotions, thoughts and behaviour may be adequately controlled or regulated under challenging circumstances.	.934

Patient shows the ability to be relaxed and flexible in relation to the views held by others and can readily move between perspectives adopted about the issue under discussion even when they have fairly firm views of their own.	.934
Patient shows genuine curiosity about his/her and other people's perspectives, motivations and expectations.	.932
Patient understands that there is a difference in thinking and feeling related to development, and that processing thoughts and feelings in adulthood varies depending on current psychological states including changes that occur between childhood and adolescence.	.941
Patient easily finds the words to describe his/her feelings (this includes identifying, naming and distinguishing among feelings).	.937
When patient communicates his/her affects, he/she is aware of and has concern for others in the way they are expressed	.944

Table 3. 4. Coefficient Alphas for the Equivalence Sub-scale if Item was deleted.

Psychic Equivalence, Coefficient Alpha: 0.911	
Statement	**Cronbach's Alpha if Item Deleted**
Patient sticks to an explanation of his/her behaviour, even when there are clear alternative explanations.	.898
Patient seems intolerant of alternative perspectives on situations he/she is involved in.	.891
Patient assumes that he/she knows what other people, including the therapist, are likely to be thinking.	.880
Patient shows an unjustified certainty about the mental states of him/herself and/or others.	.890
Patient's language is dominated by statements of absolutes (always, never, totally, absolutely, etc)	.898

Table 3. 5 Coefficient Alphas for the Pretend Mode Sub-scale if Item was deleted.

Pretend Mode, Coefficient Alpha: 0.81	
Statement	**Cronbach's Alpha if Item Deleted**
Patient has a flowing discourse but it lacks information about the patient him/herself.	.739
Patient tends to use most of his/her time reporting on issues and events that appear unimportant that fill space in the session (e.g., how a person in his/her workplace looked at him/her; a movie he/she watched; the order of the universe).	.666
There is a distinct loss of connection between the communication of patient and therapist.	.703
The patient's narrative is confusing and quite difficult to follow.	.826
There is a great deal of jargon in the patient's narrative reflecting the language of therapy rather than the patient's experience.	.838

Table 3. 6 Coefficient Alphas for the Teleological Mode Subscale if Item was deleted.

Teleological Mode, Coefficient Alpha: 0.6	
Statement	**Cronbach's Alpha if Item Deleted**
Patient tends to demand attention from others in a way that is verifiable for him/her, such as phone calls or visits. These interactions serve his/her personal needs/interests more than the other person's.	.593
Patient asks for constant reassurance in relation to their thoughts and feelings being acceptable and/or being generally liked as a person.	.368
When experiencing stress and/or distress, patient favours the use of activity (e.g. exercise), inactivity (e.g. sleep) or medication rather than engaging with possible psychological causes.	.526
Patient exclusively focuses on the significance of actions by others in terms of their practical implications rather than what they imply about the patient's or others' mental states.	.570

Table 3. 7 Coefficient Alphas for the Ineffective Mentalising Subscale if Item was deleted.

Ineffective Mentalising, Coefficient Alpha: 0.924	
Statement	**Cronbach's Alpha if Item Deleted**
Patient's narrative is dominated by non-reflective, naive, seriously distorted, and/or unwarranted assumptions about thoughts and feelings of others.	.915
Patient seems to be 'stuck' in one point of view, is repetitive and his/her train of thought does not seem to flow freely.	.907
When considering the reasons for problems or difficult situations, patient focuses on external social factors (e.g., his/her employer, the local council, the neighbours, etc.), avoiding thinking about reasons in terms of people's feelings, thoughts or wishes.	.897
Patient has limited insight into his/her own limitations.	.919
Patient focuses on stereotypes or general categories or superficial descriptions when explaining people's actions (e.g. descriptors such as 'tired', 'lazy' or diagnoses such as, 'I have ADHD and that explains why I am so difficult').	.907
Patients' beliefs and expectations seem clichéd or 'canned', as if taken from storybooks or movies.	.916

Table 3. 8. Coefficient Alphas for the Controlled vs Automatic Sub-scale if Item was deleted.

Controlled vs Automatic, Coefficient Alpha: 0.75	
Statement	**Cronbach's Alpha if Item Deleted**
Patient is able to reflect, after the event, on what he or she felt or thought.	.738
Patient has the ability to correct his/her opinion about other people's thoughts or feelings when challenged by others.	.739
Patient is capable of listening and/or elaborate to and taking in information that is emotionally difficult (i.e., information that challenges cherished beliefs, perceptions, and self-perceptions).	.738
Patient is capable of considering alternative viewpoints, even in topics that stir up strong feelings in him/her.	.730
Patient reflects on what made him/her act in a certain way in a given situation.	.733
Patient keeps track of his/her own thoughts and feelings.	.722
Patient is introspective – that is, he/she allows him/herself to explore his/her inner thoughts and feelings.	.741
Patient tends to quickly come up with explanations about his/her own behaviour and/or the behaviour of other people without giving much thought to it.	.716
Patient becomes easily stressed and then readily loses the capacity to reflect on his/her mental states.	.729
Patient seems unable or unwilling to modify his/her behaviour in response to feedback.	.751
Patient tends to respond to others in stereotypical ways, without giving much consideration to the reasons why others behave in a particular way.	.756
Patient tends to easily 'jump to conclusions' about the mental states of others.	.710
Patient has a tendency to think of his/her own choices or feelings as being 'natural', self-evident or obvious.	.745

Table 3. 9. Coefficient Alphas for the Internal vs External Sub-scale if Item was deleted.

Internal vs External, Coefficient Alpha: 0.87	
Statement	**Cronbach's Alpha if Item Deleted**
Patient tends to talk about other people in psychological terms – that is, as being motivated by feelings, thoughts, desires, and beliefs.	.873
Patient tends to be easily affected by his/her beliefs about others' states of mind.	.842
Patient changes easily his states of mind and/or behaviour in relation to what other people think or feel about the patient.	.866
Patient seems to have difficulties understanding non-verbal indicators of others' states of mind (e.g., facial expressions, use of eye contact, body posture and movements, etc.).	.850

Patient tends to be in touch with his/her own bodily states (e.g., physical sensations, emotions) and their influence on how he/she feels.	.846
Patient notices and responds to non-verbal cues (e.g., facial expressions, use of eye contact, body posture and movements, etc.) from other people.	.837
Patient is able to understand and empathise with others' feelings.	.859
Patient is overly sensitive to how others look or behave.	.859
Externally, not necessarily focusing on mental states.	.863
Patient tends to talk about or describe others mainly in 'concrete' terms, such as their physical attributes (handsome, sexy, ugly) or in terms of their activities or social status.	.883

Table 3. 10 Coefficient Alphas for the Cognitive vs Affective Sub-scale if Item was deleted.

Cognitive vs Affective, Coefficient Alpha: 0.87	
Statement	**Cronbach's Alpha if Item Deleted**
Patient tends to give thoughtful explanations of his/her own and/or other people's behaviours, thoughts and feelings.	.833
Patient tends to consider the advantages and disadvantages of a specific situation and take them into account when making decisions about the situation.	.855
Patient seems to easily grasp the meaning of mental states in him/herself and others, and focuses on the understanding and implications of these mental states.	.831
Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest.	.873
Patient tends to explain his/her behaviour and the behaviour of other people in terms of emotions and feelings.	.838
Patient tends to be easily overwhelmed by his/her own feelings or the apparent feelings of others.	.904
Patient is in touch with his/her own feelings.	.837
Patient tends to be empathic, sensitive and responsive to other people's feelings and needs.	.831

Table 3. 11. Coefficient Alphas for the Self vs Other Sub-scale if Item was deleted.

Self vs Other, Coefficient Alpha: 0.94	
Statement	**Cronbach's Alpha if Item Deleted**
Patient tends to reflect spontaneously about the motives for his/her own actions and the reasons for his/her mental states.	.933
Patient tends to describe his/her mental states with a correlated physical experience (e.g., 'I was shocked and got sick'; 'When I am depressed I feel tired and want to sleep all day').	.936
Patient is curious about the motives behind his/her actions and the reasons for his/her mental states.	.933

Patient is aware of bodily changes when experiencing certain emotions or thoughts (e.g. blushing, speed of breathing, etc.)	.935
Patient takes responsibility for his/her own actions.	.934
Patient tends to spontaneously express verbally his/her own feelings and thoughts.	.940
Patient tends to focus on others' mental states, actions or behaviour.	.926
Even when talking about him/herself, patient tends to put others' mental states as the prominent feature of the narrative.	.930
Patient tends to reflect spontaneously about the possible motives for other people's actions and the reasons for their mental states.	.929
Patient can perceive other people's emotions and thoughts without having to react to them.	.929
Patient tends to express his/her vision of others' emotional experiences and thinking processes.	.930

3.5 Materials and Methods

A Q methodological study is commonly characterised by two main features: "(1) the collection of data in the form of Q sorts; and (2) the subsequent intercorrelation and by-person factor analysis of those Q sorts" (Watts & Stenner, 2012, p. 178). The MQS consists of 71 items that describe the mentalising abilities of patients during psychotherapeutic sessions. It follows a fixed distribution pattern that ranges from category 1, "not characteristic or absent", to category 5, "most characteristic".

Traditional Q studies use Q-sorts with items that are treated as bipolar dimensions of a characteristic. This means that an item can be rated on a "most characteristic – most uncharacteristic" continuum, with those in the middle considered to be neutral. The MQS follows the approach introduced by Westen and Shedler in their development of the SWAP (this approach was presented in chapter 2, section 2.7.4), where the set of items assesses unipolar constructs, producing, at the end of the process, an asymmetric fixed score distribution instead of a quasi-normal, bell-shaped one (Westen, & Shedler, 2007). As mentioned in chapter 2, there are psychometric benefits to the use of a fixed distribution, as it reduces much of the error measurement that is usually present in standard rating scales (Shedler, & Westen, 2007).
The distribution of the MQS items can be summarised as shown in table 3.12:

Table 3.12 Frequency distribution of the MQS

Forced-choice frequency distribution					
Ranking Value	1	2	3	4	5
Number of Items	28	18	12	8	5

At the end of the Q-sorting process, a grid following the above-mentioned forced distribution for each session is assessed. As the table shows, the majority of items receive scores of 1 (not characteristic or absent). Higher scores are given to progressively fewer items, with just 5 items receiving a score of 5 (most characteristic). We chose this distribution for two methodological reasons: 1) we intended the measure to assess the most salient aspects of mentalising capacity; therefore we created items for opposing aspects of mentalising dimensions, as we considered that both might be deemed important or unimportant in a particular session. For instance, item 62, "Patient is curious about the motives behind his/her actions and the reasons for his/her mental states", indicates a self-oriented perspective that can be highly characteristic of a session, whereas item 68, "Patient tends to reflect spontaneously about the possible motives for other people's actions and the reasons of their mental states", focuses on "the other" dimension of the self vs other polarity of mentalising. One item could be highly characteristic while the other is absent or present without much importance. The asymmetric distribution allows raters to perform careful categorisation of items that are descriptive of the patient's mentalising capacity in the session in various degrees (categories) but not those that lack descriptiveness or are absent. 2) This distribution was closely related to the one that emerged naturally when we trialled the measure for its reliability without a fixed distribution in study 1 (an aspect that was a characteristic of the SWAP – Westen & Shedler, 1999a, p. 262), therefore suggesting the trend in the Q sort process. A further benefit of this approach is that the coder does not spend time assessing the correct placement of an item with little or no relevance to the session, assigning them a score of 1. The more detailed process occur in the items in the other categories (2 to 5) as there has to be a fine discrimination about how prominent those items were in the session compared with one another (Blagov, Bi, Shedler & Westen, 2012, p. 371-2).

Table 3.13 provides an example of a sorted MQS:

Table 3.13 sorted MQS, with a fixed asymptotic distribution

1. Not characteristic or Absent (28)	2. Slightly Characteristic (18)	3. Mildly Characteristic (12)	4. Quite Characteristic (8)	5. Most Characteristic (5)
2	1	5	21	25
3	20	7	29	40
4	22	11	33	49
6	23	12	36	55
8	31	34	43	57
9	38	35	60	
10	42	37	65	
13	46	39	70	
14	48	51		
15	52	53		
16	54	63		
17	56	64		
18	58			
19	59			
24	61			
26	62			
27	66			
28	68			
30				
32				
41				
44				
45				
47				
50				
67				
69				
71				

3.6 Discussion of the Chapter

The purpose of this study was to develop an observer-rated Q set of the different polarities of mentalising and of pre-mentalising modes of thinking and relating in patients undergoing treatment. The initial psychometric evidence suggests that the Q set may be a useful tool for the assessment of the different mentalising abilities that a given patient displays in a psychotherapeutic session. Although the Mentalising Profile Q set (MQS) is grounded largely in recent research on the theory and practice of mentalisation and mentalisation-based therapy, we made the effort during the construction of the concourse (i.e. in the development of items) to be consistent with the descriptions provided by other empirically supported scales that were considered to have an overlap with mentalising theory.

The first sub-study, a content validity evaluation by experts, researchers and clinicians in MBT, yielded good-to-high ratings of item clarity and representation of the different mentalising categories. The items that did not reach an acceptable median score were eliminated, except for seven items that were kept in order to maintain a similar average number within the different categories.

The second sub-study piloted 112 items in actual psychotherapeutic sessions for reliability and internal consistency. The mean ICC for the 15 sessions was 0.583, and the overall Coefficient Alpha was 0.955, allowing us to regard the Q set as a promising measure for the study of mentalising. We ended up with a 71-item Q set, which we named the Mentalising Profile Q set (MQS). Following the work of Westen and Shedler (1999a, also Blagov, Bi, Shedler & Westen, 2012) we set this to have an asymmetric fixed score distribution. We will discuss its usefulness in the following chapters, after we present some of its psychometric properties.

3.7 Limitations

A limitation of the present study was the level of response we received from MBT experts in assessing the items in the first phase of concourse development. Although almost 50% of the experts we contacted provided us with item ratings, a higher number of assessments would have given us stronger face validity.

A further limitation arises from the decision to include in the final Q set items with a low median expert rating and those that did not perform very well in the Coefficient Alpha. We considered that there had to be some equilibrium in the number of items within the different categories or sub-scales. However, we see the final MQS as a work in progress rather than a complete instrument.

Two further studies that will be presented in this research, in chapters 5 and 6, will explore further the psychometric properties of this instrument, the validity and reliability of the MQS.

3.8 Conclusion

Following Block (1961), Westen and Shedler (1999a, 1999b) and Jones (2000), we described a methodological path for the construction of the MQS that differs considerably from the method advocated by Stephenson (1953, see also Brown, 1980) and more traditional Q methodologists. Although Q sets can be created using elaborate, or sometimes improvised, techniques, the present research opted for a more systematic, though imperfect, method that provides a strong base for the MQS and its use in the assessment of psychotherapeutic sessions.

This preliminary step was needed before proceeding with the intended Q analysis to test the effectiveness of the MQS in finding naturally-occurring clusters of patients based on their mentalising capacities, even in therapeutic interventions that are not based on mentalisation per se. This topic is addressed in the next chapter.

Chapter 4: Mentalising Profiles in the Tavistock Adult Depression Study: A Q analytic Approach

Chapter Overview

This chapter describes, step by step, the Q analytic methodology used to assess the psychometric properties of the newly developed Mentalising Profile Q-Sort (MQS) and provide evidence for its validation. A group of patients diagnosed with treatment-resistant chronic depression was assessed using the MQS by an external rater at the beginning and end of treatment. Q factor analysis was employed to identify naturally occurring clusters. Three such groups were derived at each assessment time: details of these are presented and interpreted. Finally, we discuss the findings and describe some of the limitations found.

Introduction

This chapter reports on a preliminary study to provide evidence for the validation of the MQS in a sample of chronically depressed patients. Specifically, the aim of the study was to evaluate the psychometric properties of the new tool by investigating if it could be usefully applied to actual psychotherapy sessions in order to find naturally occurring clusters of patients based on their mentalising style. For this purpose, we assessed patients in the long-term psychoanalytic psychotherapy (LTPP) group (*N*=67) of the Tavistock Adult Depression Study (TADS), a pragmatic randomised controlled trial for patients diagnosed with treatment-resistant depression. More detailed information on this study can be found in the recommended bibliography (Taylor, Carlyle, McPherson et al, 2012; Taylor, 2015; Fonagy, Rost, Carlyle, et al., 2015).

4.1. Participants

The Tavistock Adult Depression Study (TADS) (Taylor, Carlyle et al., 2012) is the first randomised controlled trial in the NHS to establish the efficacy of long-term psychoanalytic psychotherapy (LTPP) compared with Treatment as Usual (TAU) of patients with treatment-resistant depression. The LTPP group attended once-a-week sessions of about 50 minutes each, carried out by 22 senior British Psychoanalytic

Council-approved psychotherapists at the Adult Department of the Tavistock Clinic with an average working experience of 17.45 years. The treatment approach was primarily based on object relations theory as developed by Melanie Klein and post-Kleininan authors such as Wilfred Bion, Betty Joseph and Hanna Segal. The approach was manualised and aimed at delivering a psychoanalytic time-limited perspective for people diagnosed with treatment-resistant depression (Taylor, 2015).

The TADS population consisted of 129 chronically depressed patients, aged between 22 and 66 (*M*= 44, *SD* = 10.31). The majority (66%) were female and 82% were white Caucasian. All had been diagnosed with current major depression disorder (MDD), and 76% had a further diagnosis of early-onset dysthymia. The inclusion criteria required participants to be aged between 18 and 65 years and to have been diagnosed for at least two years with MDD according to DSM IV (as assessed by the Structured Clinical Interview for DSM-IV Axis I Disorders or SCID-I). Additionally, participants should have had at least two failed attempts at treatment (elicited at interview and verified from medical records). One of these treatments must have included antidepressant medication; the other (s) could have involved another antidepressant medication or a psychological intervention. Finally, patients should have received a minimum score of 14 (moderate depression) on the 17-item version of the Hamilton Depression Rating Scale (HDRS-17), as assessed by two external raters, and a score of 21 (moderate depression) on the Beck Depression Inventory (BDI-II), a self-report measure of depression. Participants were excluded if they had met the DMS-IV criteria for bipolar I disorder or psychotic disorder within the past five years, had received psychodynamic psychotherapy in the past two years or had received psychiatric help for substance dependence in the past two years. The study also excluded individuals who suffered from moderate or severe learning disability or showed evidence of organic brain disorder. No assessment for presumed suitability or unsuitability for psychoanalytic-based therapy was performed (Taylor et al, 2012; Fonagy et al., 2015).

It is important to note that most patients in the study also met the DSM-IV criteria for a comorbid Axis-II diagnosis relating to personality disorders. Such assessments were carried out using the SCID-I assessment interview, based on DSM-IV criteria, and the Tavistock Dynamic Interview (TDI), an instrument for assessing self-representations and interpersonal relationships, among others[13]. Additionally, 76% of the participants had a further diagnosis of early-onset dysthymia.

[13] We will describe the assessment measures in detail in chapter 5.

The participants were randomised to either LTPP (*N*=67) or treatment as usual (TAU) (*N*=62). The LTPP was envisioned to last for 60 sessions over an 18-month period, with each session audio-recorded for research purposes (Taylor et al, 2012; Fonagy et al., 2015).

4.2 Procedure

For the present study, the author rated the MQS for participants assigned to the LTPP treatment group.

A session towards the beginning of treatment (*M* = 7.6, *SD* = 3.3) and the end of treatment (*M* = 55.5, *SD* = 7.4) was listened to and subsequently Q-sorted in order to identify naturally occurring clusters of patients with similar mentalising profiles. The rationale for assessing these two phases of the psychotherapeutic process was to compare the clusters derived from the analysis to gain a better idea of how mentalising capacity varies, if at all, at the beginning and end of the therapeutic process.

We encountered an immediate difficulty in selecting recordings for the first group (the early phase of treatment), as 5 patients did not have enough sessions to be rated and one had withdrawn completely from the trial. For this reason, 61 patients (39 females, 22 males) were rated with the MQS at the beginning of their treatment (T1). A further 10 patients dropped out in the course of treatment[14], meaning the number of participants at the end of treatment (T2) was 51 (32 females and 19 males).

4.3 Statistical analysis

In line with the process recommended by Watts and Stenner (2012), Block (1960, 1971, 2008) and Brown (1980, 1993), by-person or Q data analysis was performed on the completed Q sets. We followed the steps defined by Watts and Stenner (2005, 2012) as they are, in our view, the most rigorously explained in the extant Q methodological literature. Although comparable steps are followed by most Q methodological researchers, the quoted authors present these in a comprehensive,

[14] In this study, treatment drop out was defined as patients who had less than 35 sessions of the 60 that were considered for the treatment to be finished.

integrated and accessible manner, providing different examples and suggesting the use of a diverse set tools (such as software packages) to simplify the analysis.

The numerical data from the Q-sort for each patient at T1 and T2 was entered into the software package SPSS version 24. This required a transposition of the data, as SPSS is set to run R methodological factor analysis. Thereafter, SPSS recognised the items of the MQS as the sample and the TADS patients as variables, allowing a by-person factor analysis. Principal Component Analysis (PCA), a multivariate technique that identifies linear components of a set or variables, was used, as SPSS does not allow the recommended and more flexible Centroid Factor Analysis (Watts & Stenner, 2012). Nevertheless, PCA has the benefit of producing a "single, mathematically *best* solution" which strengthens the statistical prediction, albeit at the expense of a more theoretically-abductive approach to extraction (Ibid, p. 99). This is more in tune with the branch of Q methodology advanced by Block, Jones and Westen and Shedler (see section 2.7 for a more detailed account).

The rotation of factors was performed using Promax with Kaiser Normalisation, as there was no reason to assume that characteristics would be independent of each other, as Varimax rotation supposes[15] (this issue was discussed in section 2.6). It is important to keep in mind that the dimensions or polarities of mentalising and pre-mentalising modes are on a flexible continuum; therefore, as theoretical constructs, they are correlated with each other. The initial communalities for each MQS, which describe how representative of a group each Q-sort is, ranged from 0.66 to 0.89 at T1 (Table 4.1) and from 0.58 to 0.89 at T2 (Table 4.2), indicating good-to-high representativeness.

Table 4. 1 Communalities at T1

Communalities	T1	
	Initial	Extraction
PT103	1	0.71
PT104	1	0.794
PT106	1	0.87
PT110	1	0.844
PT114	1	0.836
PT117	1	0.831

[15] Nevertheless, similar results were obtained using Varimax rotation.

PT126	1	0.707
PT127	1	0.86
PT129	1	0.796
PT131	1	0.852
PT134	1	0.799
PT140	1	0.797
PT147	1	0.854
PT150	1	0.758
PT154	1	0.824
PT159	1	0.699
PT164	1	0.744
PT169	1	0.821
PT171	1	0.778
PT175	1	0.657
PT178	1	0.871
PT183	1	0.849
PT185	1	0.824
PT194	1	0.84
PT198	1	0.839
PT210	1	0.758
PT217	1	0.848
PT223	1	0.768
PT236	1	0.753
PT237	1	0.688
PT251	1	0.8
PT255	1	0.882
PT265	1	0.823
PT272	1	0.831
PT274	1	0.84
PT279	1	0.809
PT282	1	0.749
PT296	1	0.675
PT299	1	0.799
PT301	1	0.835
PT302	1	0.754
PT305	1	0.738
PT314	1	0.868
PT315	1	0.757

PT319	1	0.857
PT321	1	0.777
PT324	1	0.811
PT325	1	0.891
PT329	1	0.822
PT345	1	0.857
PT350	1	0.714
PT351	1	0.803
PT352	1	0.842
PT354	1	0.793
PT370	1	0.81
PT380	1	0.659
PT384	1	0.804
PT389	1	0.827
PT406	1	0.724
PT500	1	0.783
PT600	1	0.826

Extraction Method: Principal Component Analysis.

Table 4. 2 Communalities at T2

Communalities	T2	
	Initial	Extraction
PT103	1	0.797
PT104	1	0.751
PT106	1	0.813
PT110	1	0.806
PT114	1	0.767
PT117	1	0.843
PT126	1	0.767
PT129	1	0.784
PT131	1	0.812
PT140	1	0.787
PT147	1	0.794
PT150	1	0.749
PT154	1	0.754

PT164	1	0.866
PT169	1	0.759
PT171	1	0.841
PT175	1	0.817
PT178	1	0.703
PT194	1	0.665
PT198	1	0.784
PT210	1	0.716
PT217	1	0.745
PT223	1	0.799
PT236	1	0.638
PT237	1	0.597
PT251	1	0.718
PT255	1	0.737
PT265	1	0.625
PT272	1	0.827
PT274	1	0.679
PT282	1	0.805
PT296	1	0.578
PT299	1	0.703
PT301	1	0.787
PT305	1	0.835
PT314	1	0.712
PT315	1	0.797
PT319	1	0.891
PT321	1	0.769
PT324	1	0.855
PT325	1	0.819
PT329	1	0.68
PT351	1	0.854
PT352	1	0.757
PT354	1	0.772
PT370	1	0.744
PT380	1	0.717
PT384	1	0.85
PT389	1	0.75
PT500	1	0.678
PT600	1	0.824

Extraction Method: Principal Component Analysis.

The identification of factors through the Q-sorts allowed us to move to the second phase of analysis: uncovering the factors needed to create factor arrays. For this we needed a weighted average of significant loading Q-sorts. But before determining the number of factors to extract, and in order to ensure the data was as rigorous as possible, we adopted a number of statistical procedures:

1. The exploration of the scree plot (figures 4.1 and 4.2) revealed three distinct factors for both time points. The scree plot is a graph that results from the plotting of each factor after the factor analysis has taken place (indicated in the X axis) against its eigenvalue (indicated in the Y axis). This graph shows the importance of each factor and the point of inflection of its curve is usually suggestive of the factors to extract (Field, 2015).
2. Each of these extracted factors had eigenvalues[16] of greater than 1. In factor analysis, it is "the amount (not percentage) of variance accounted for in the variables on a factor" (Cramer & Howitt, 2004, p. 56).
3. The percentage of variance explained by the three-factor solution, which Kline (1994) suggests should be at least 35-40%, was 57.7% for T1 and 68.2% for T2, which can be considered satisfactory in statistical terms.
4. Finally, randomly splitting the dataset in two (Newman, I., & Ramlo, S., 2010, p. 522) and running the same analysis yielded similar results.

As an extra measure to determine whether the three-factor solution was reliable, we made sure that all the extracted factors had a minimum of 4 significant factor loadings for statistical significance[17], doubling the minimum of two recommended by Watts & Stenner (2012). In this instance, a factor loading represents how each of the assessed patient's Q-sorts is associated with each identified factor on a range from -1.0 to +1.0. The closer the loading is to these numbers, the more significant it becomes to the

[16] Although this has been a traditionally accepted parameter, researchers such as Watts and Stenner (2012) consider that its importance is not really that prominent. Other authors have dismissed this criterion due to its tendency to retain too many factors, and advise to discard it completely, although based on results provided by R methodological analyses (Lance, Butts & Michels, 2006).

[17] A factor loading expresses the extent to which each Q sort is associated with each factor (Nicholas, 2011)

analysis. According to Brown (1980, p.222-23) and Watts & Stenner (2012, p. 107), a significant factor loading at the 0.01 level can be calculated using the following equation:

- 2.58 x (1 ÷ $\sqrt{no.of\ items\ in\ Q-set}$)
- Thus, in this case, 2.58 x (1÷ $\sqrt{71}$)= ±0.31.

To sum up, individual Q sorts which loaded above this number could be considered significant for the factor in question.

The other way to calculate the significance of a factor loading is Humphrey's rule, which states that "a factor is significant if the cross-product of its two highest loadings (ignoring the sign) exceeds twice the standard error" (Watts & Stenner, 2015, p. 107). If this criterion is satisfied, then a factor should be extracted.

- To find the standard error we used the equation SE = $1 \div \sqrt{no.of\ items\ in\ Q-set}$.
- In this case, 1 ÷ $\sqrt{71}$ = 0.12.
- Therefore, twice the standard error = 2 x 0.12= 0.24. If the multiplication of the two highest factor loadings exceeds 0.24, they should be extracted. If it does not, they should be set aside.
- As we are using the same Q set for the two time points, the SE is the same for both. Thus, for T1, Factor 1 = 0.915; Factor 2 = 0.587; Factor 3 = 0.549. For T2, Factor 1 = 0.825; Factor 2 = 0.650; factor 3 = 0.673 (this result indicates that all of the factors should be extracted, as they exceed twice the standard error, 0.24).

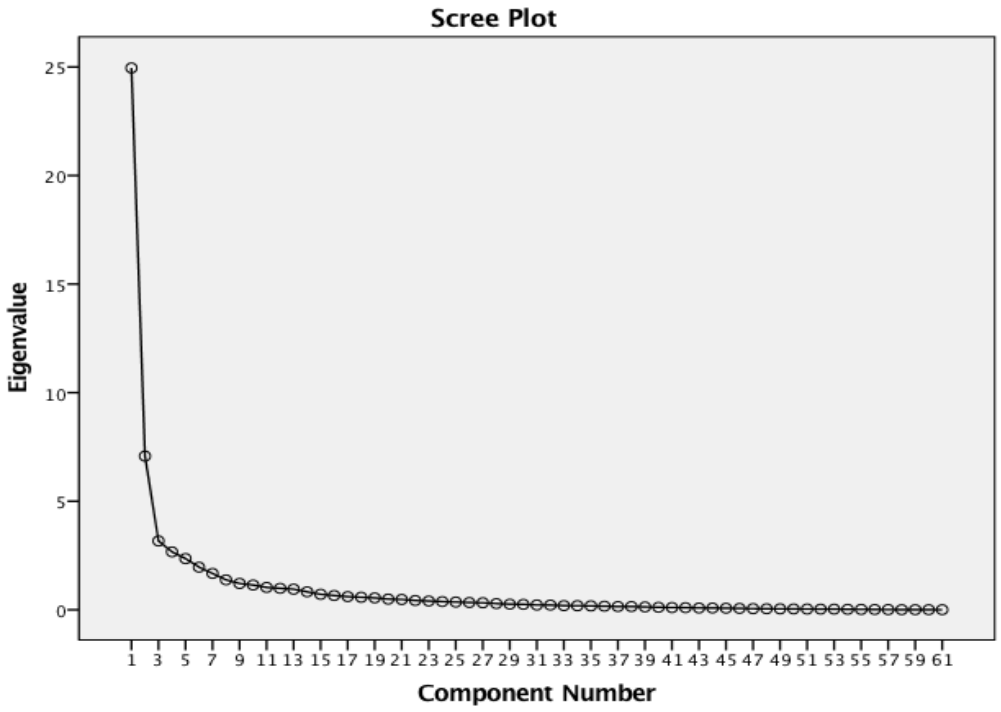

Figure 4. 1 Scree plot for T1

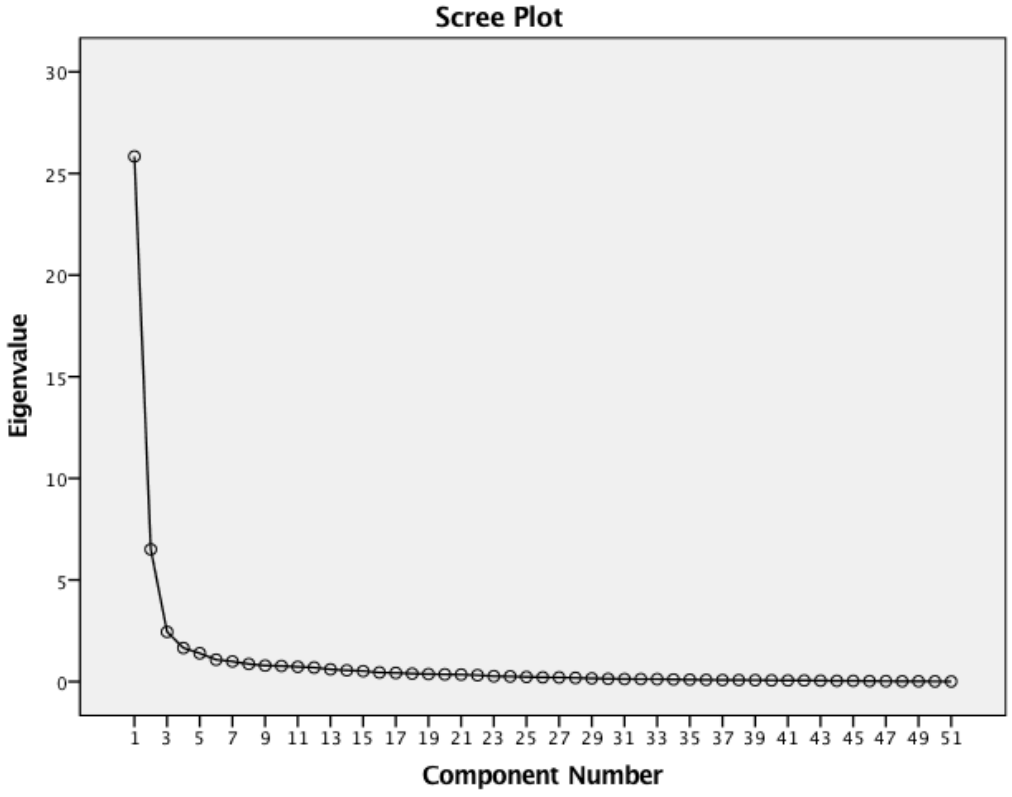

Figure 4. 2 Scree plot for T2

Variance Explained

Table 4. 3 Variance explained at T1

Total Variance Explained							
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	24.955	40.910	40.910	24.95	40.910	40.910	23.878
2	7.077	11.601	52.511	7.077	11.601	52.511	12.851
3	3.171	5.199	57.710	3.171	5.199	57.710	5.522

Table 4. 4 Variance explained at T2

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	25.84	50.666	50.666	25.84	50.666	50.666	24.413
2	6.506	12.756	63.423	6.506	12.756	63.423	15.205
3	2.446	4.795	68.218	2.446	4.795	68.218	5.913

Factor Loadings

T1

Table 4. 5 Pattern Matrix for a three-factor solution at Time 1

Pattern Matrix			
	Component		
	Factor 1	Factor 2	Factor 3
PT103	-0.061	0.702	0.048
PT104	0.031	0.45	0.471
PT106	0.747	0.304	0.048
PT110	0.739	-0.025	0.111
PT114	0.531	0.517	-0.106

PT117	0.67	0.389	-0.131
PT126	0.511	-0.117	0.49
PT127	-0.363	0.764	0.242
PT129	-0.323	0.021	0.554
PT131	0.943	-0.38	0.172
PT134	0.486	0.228	0.362
PT140	-0.006	0.326	0.477
PT147	0.722	0.3	0.076
PT150	0.553	0.085	0.062
PT154	0.429	0.522	0.06
PT159	0.312	0.38	0.105
PT164	-0.202	0.064	0.759
PT169	0.742	0.139	-0.128
PT171	0.048	0.401	0.492
PT175	0.497	0.265	0.111
PT178	0.913	-0.091	-0.004
PT183	0.923	-0.133	0.002
PT185	0.779	-0.143	-0.098
PT194	-0.39	0.711	0.283
PT198	0.911	-0.175	-0.093
PT210	-0.107	0.533	0.19
PT217	0.965	-0.262	-0.024
PT223	0.565	0.205	0.158
PT236	-0.022	0.15	0.723
PT237	-0.231	0.706	0.013
PT251	0.173	0.24	0.319
PT255	0.513	0.309	-0.084
PT265	0.164	-0.017	0.571
PT272	0.901	-0.394	-0.082
PT274	0.671	0.257	0.142
PT279	-0.513	0.769	0.148
PT282	0.555	0.353	-0.049
PT296	0.414	0.485	-0.041
PT299	0.084	0.535	0.007
PT301	0.604	0.408	-0.164
PT302	0.507	0.359	-0.178
PT305	0.906	-0.252	0.024
PT314	0.781	0.193	0.002

PT315	0.34	0.558	-0.208
PT319	0.678	0.043	0.158
PT321	0.19	0.104	0.518
PT324	0.588	0.191	0.132
PT325	0.948	-0.185	-0.014
PT329	0.515	-0.248	0.253
PT345	0.637	0.294	-0.068
PT350	0.729	-0.132	-0.128
PT351	0.823	0.061	-0.205
PT352	0.592	-0.42	0.511
PT354	0.784	0.01	0.111
PT370	0.899	-0.103	-0.023
PT380	0.648	0.219	0.042
PT384	0.534	0.147	0.141
PT389	0.479	0.482	-0.059
PT406	0.394	0.434	-0.142
PT500	0.306	0.624	-0.081
PT600	0.8	0.028	0.121

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.

T2

Table 4. 6 Pattern Matrix for a three-factor solution at Time 2

Pattern Matrix			
	Component		
Patient ID	Factor 1	Factor 2	Factor 3
PT103	0.513	0.505	-0.016
PT104	0.856	0.005	-0.007
PT106	-0.667	0.823	0.02
PT110	0.758	-0.147	0.239
PT114	-0.125	0.636	0.537
PT117	0.239	-0.207	0.783
PT126	0.366	0.608	-0.028
PT129	0.053	-0.228	0.86
PT131	0.871	0.104	-0.354

PT140	0.748	-0.166	0.237
PT147	0.077	0.735	-0.301
PT150	0.756	-0.033	-0.204
PT154	0.313	0.706	-0.16
PT164	0.594	-0.028	0.45
PT169	0.737	0.088	0.126
PT171	0.633	0.332	0.175
PT175	0.786	-0.158	0.209
PT178	0.736	0.204	0
PT194	0.625	0.408	-0.08
PT198	0.698	0.124	0.151
PT210	0.415	0.189	0.424
PT217	0.832	-0.01	0.035
PT223	0.228	0.754	-0.225
PT236	0.555	0.171	0.223
PT237	0.474	0.196	0.252
PT251	0.695	0.177	0.089
PT255	0.077	0.59	0.254
PT265	-0.694	0.632	0.195
PT272	0.56	-0.147	0.477
PT274	-0.003	0.376	0.57
PT282	0.607	0.011	0.385
PT296	0.312	0.387	-0.175
PT299	-0.346	0.591	0.22
PT301	0.7	0.04	0.243
PT305	0.661	-0.103	0.373
PT314	-0.373	0.731	0.409
PT315	0.522	0.021	0.462
PT319	0.881	0.26	-0.101
PT321	0.219	-0.215	0.709
PT324	0.937	-0.01	-0.107
PT325	0.799	0.071	0.12
PT329	0.162	0.449	0.24
PT351	0.735	-0.171	0.316
PT352	0.763	0.146	0.066
PT354	0.839	-0.016	0.052
PT370	0.288	0.673	0.027
PT380	0.416	0.598	-0.158

PT384	0.816	-0.086	0.177
PT389	0.004	0.79	-0.364
PT500	0.106	0.248	0.579
PT600	0.775	-0.091	0.213

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.

Once the factor loadings were reviewed, we identified the Q-sort values that defined a factor. We accepted values that were above ±0.31, but deemed as confounders the Q-sorts that loaded to more than one factor, excluding them from the analysis. A non-significant Q-sort is one which does not load significantly onto any of the extracted factors. In this study all Q-sorts loaded onto at least one factor, therefore the number of non-significant Q-sorts for T1 and T2 were both zero, as tables 4.7 and 4.8 below show.

Table 4. 7 Defining, Confounding and Non-significant Factor-exemplifying Q-Sorts for time 1.

Time 1			
Loading	Patient's Q-Sort	Total	Cumulative Total
Factor 1	106, 110, 131, 147, 150, 169, 175, 178, 183, 185, 198, 217, 223, 255, 272, 274, 305, 314, 319, 324, 325, 329, 345, 350, 351, 354, 370, 380, 384, 600	30	30
Factor 2	103, 127, 194, 210, 237, 279, 299, 500	8	38
Factor 3	129, 164, 236, 251, 265, 321	6	44
Confounders	104, 114, 117, 126, 134, 140, 154, 159, 171, 282, 296, 301, 302, 315, 352, 389, 406	17	61
Non-significant		0	61

Table 4. 8 Defining, Confounding and Non-significant Factor-exemplifying Q-Sorts for time 2.

Time 2			
Loading	Patient's Q-Sort	Total	Cumulative Total
Factor 1	104, 110, 131, 140, 150, 169, 175, 178, 198, 217, 236, 237, 251, 301, 319, 324, 325, 352, 354, 384, 600	21	21
Factor 2	106, 147, 223, 255, 265, 299, 329, 370, 389	9	30
Factor 3	117, 129, 321, 500	4	34
Confounders	103, 114, 126, 154, 164, 171, 194, 210, 272, 274, 282, 296, 305, 314, 315, 351, 380,	17	51
Non-significant		0	51

From here, we calculated the initial factor weight using the Spearman (1927) formula for each of the significant factor loadings:

Initial factor weight = factor loading $\div (1 - Factor\ loading^2)$.

Then, we took the absolute value of the reciprocal of the largest initial factor weight, using the formula 1/Wt (Brown, 1980, p. 242) or 1 ÷ largest initial factor weight from the prior step. For instance, for factor 1 in the T1 group, the Q-sort of participant 217 had the highest factor loading, 0.965. This value was given an initial weight following the Spearman formula:

= 0.965 $\div (1 - 0.965^2)$

= 14.031.

The reciprocal for factor 1 T1 would be:

= 1 ÷ 14.031

=0.071.

The final factor weight is calculated by multiplying this reciprocal by the initial factor weight value of each significant Q-sort that loaded significantly to the factor:

= Initial factor weight x reciprocal of largest factor weight, at T1

= 0.071 x 0.965

= 1.

In the next step, the factor weight for each Q-sort is applied to its item ranking (Watts, & Stenner, 2012). The sum of the weighted score for each item helps to create the final factor estimate; in other words, it is a measure of the viewpoint represented by each factor. “The higher the score in this column, the more positively the particular item has been valued by Factor 1” (*Ibid, p. 133*).

Finally, following the tradition of Q methodology, the total score produced in the previous step is converted to a *z* value (also known as a standard score). As each factor contains a number of participants, producing a factor-weighted score per item, “it is convenient for purposes of comparability to normalize the total column, converting each item total to the score” (Brown, S.R., 1980, p. 242). The z-scores also facilitate

the comparison of scores of items in different factors[18]. The formula for obtaining this value for each item belonging to each factor is as follows:

$$= \frac{\text{(Total weighted score for item x – Mean of total weighted score for all items)}}{\text{SD of total weighted scores for all items}}$$

The last step in the Q-analysis is the conversion of values produced by the previous step into factor arrays. A factor array can be defined as an organisation of data for a single Q-sort that represents the main viewpoint of a particular factor. At the end of this process, the factor array will look like one of the completed Q-sorts for an individual participant, as illustrated in table 3.13 (Watts, & Stenner, 2012). Through its familiar asymptotic shape, we can see what the viewpoint of each factor entails: i.e with a small number of the most representative items obtaining a score of 5 (5 of the items), and a progressively increasing number of items receiving lower scores (8 items with a score of 4, 12 items with a score of 3, 18 items with a score of 2 and 28 with a score of 1).

Once this step is completed we can move to the interpretation of its results.

4.4 Results

An analysis of the extracted factors for T1 and T2 is presented below. We tried to be as thorough as possible in reviewing the factor arrays for the 3-factor solution in both cases. We assessed each of the 71 items, as presented in the final factor arrays, and separated them into three basic categories. The first comprised the items given the highest ranking of 5 in each factor array. The second contained items that were ranked higher in each factor array than in any of the other factor arrays. For these two groups we only considered items with a positive z-score: as our fixed distribution was asymptotic we were interested in the presence of aspects contained in each item and not their absence, as would normally happen in a symmetric unimodal distribution (explained in chapter 2). The work of Westen and Shedler (1999a, 1999b) is a good example of this type of distribution in Q methodological research. The third category contained items ranked lower in each factor array than in any of the other factor arrays.

[18] See Appendices 5 and 6 for the complete tables with factor arrays and z-scores for the three-factor solution at T1 and T2.

This technique of interpretation pays close attention to the emerging relationship between all items, rather than simply listing and interpreting those with the highest ranking (Barker, 2006; Watts, & Stenner, 2012). This offers a more holistic perspective of each factor and does better justice to the viewpoint represented by the participants and their Q-sorts, one of the principal tenets of Q methodological research.

4.4.1 Factors at T1.

The Q factor analysis at time 1 showed that all of the 3 derived factors were characterised by distinct characteristics. Below we will present each of these with an accompanying crib sheet (tables 4.9 to 4.14), as recommended by Watts and Stenner (2012)

4.4.1.1 Factor 1-T1: The Reflective patient.

Table 4. 9 Factor Interpretation Crib sheet for Factor 1, time 1.

Items ranked 5

Item	Z-Score
35. Patient is introspective – that is, he/she allows him/herself to explore his/her inner thoughts and feelings.	2.47
55. Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest.	2.16
65. Patient tends to spontaneously express verbally his/her own feelings and thoughts.	1.89
29. Patient is able to reflect, after the event, on what he or she felt or thought.	1.82
33. Patient reflects on what made him/her act in a certain way in a given situation.	1.77

Items Ranked higher in Factor 1-T1 Array than in other Factor Arrays

Item	Z-Score	Factor Array
1. Patient is open to exploring experiences and memories even if they are painful.	1.703	4
60. Patient tends to reflect spontaneously about the motives for his/her own actions and the reasons for his/her mental states.	1.690	4
62. Patient is curious about the motives behind his/her actions and the reasons for his/her mental states.	1.591	4
5. Patient shows genuine curiosity about his/her and other people's perspectives, motivations and expectations.	1.321	4

7. Patient easily finds the words to describe his/her feelings (this includes identifying, naming and distinguishing among feelings).	1.252	4
52. Patient tends to give thoughtful explanations of his/her own and/or other people's behaviours, thoughts and feelings.	1.239	4
34. Patient keeps track of his/her own thoughts and feelings.	1.225	4
58. Patient is in touch with his/her own feelings.	1.165	4
54. Patient seems to easily grasp the meaning of mental states in him/herself and others, and focuses on the understanding and implications of these mental states.	1.117	3
3. Patient shows realistic expectations and accurately anticipates the extent to which their own and others' emotions, thoughts and behaviour may be adequately controlled or regulated under challenging circumstances.	0.772	3
31. Patient is capable of listening and/or elaborate to and taking in information that is emotionally difficult (i.e., information that challenges cherished beliefs, perceptions, and self-perceptions).	0.763	3
55. Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest.	0.564	3
48. Patient is able to understand and empathise with others' feelings.	0.470	3
59. Patient tends to be empathic, sensitive and responsive to other people's feelings and needs.	0.380	3
70. Patient tends to express his/her vision of others' emotional experiences and thinking processes.	0.262	3
68. Patient tends to reflect spontaneously about the possible motives for other people's actions and the reasons for their mental states.	0.243	2
4. Patient shows the ability to be relaxed and flexible in relation to the views held by others and can readily move between perspectives adopted about the issue under discussion, even when they have fairly firm views of their own.	0.084	2

Items Ranked Lower in Factor 1-T1 array than in other Factor Arrays

Item	Z-Score	Factor Array
49. Patient is overly sensitive to how others look or behave.	0.133	2
43. Patient tends to be easily affected by his/her beliefs about others' states of mind.	-0.073	2
57. Patient tends to be easily overwhelmed by his/her own feelings or the apparent feelings of others.	-0.270	2
37. Patient becomes easily stressed and then readily loses the capacity to reflect on his/her mental states.	-0.585	2
51. Patient has a tendency to attribute how he/she feels to external or environmental factors (e.g., the weather, fate, the traffic, other's behaviour).	-0.643	1
39. Patient tends to respond to others in stereotypical ways, without giving much consideration to the reasons why others behave in a particular way.	-0.652	1
22. Patient exclusively focuses on the significance of actions by others in terms of their practical implications, rather than what they imply about the patient's or others' mental states.	-0.712	1

19. Patient tends to demand attention from others in a way that is verifiable for him/her, such as phone calls or visits. These interactions serve his/her personal needs/interests more than the other person's.	-0.849	1
24. Patient seems to be 'stuck' in one point of view, is repetitive and his/her train of thought does not seem to flow freely.	-1.020	1
38. Patient seems unable or unwilling to modify his/her behaviour in response to feedback.	-1.023	1
10. Patient seems intolerant of alternative perspectives on situations he/she is involved in.	-1.025	1
26. Patient has limited insight into his/her own limitations.	-1.063	1
14. Patient has a flowing discourse but it lacks information about the patient him/herself.	-1.085	1
9. Patient sticks to an explanation of his/her behaviour, even when there are clear alternative explanations.	-1.100	1
12 Patient shows an unjustified certainty about the mental states of him/herself and/or others.	-1.106	1
13. Patient's language is dominated by statements of absolutes (always, never, totally, absolutely, etc.)	-1.111	1
41. Patient has a tendency to think of his/her own choices or feelings as being 'natural', self-evident or obvious.	-1.127	1

Factor 1-T1, The Reflective Patient, has an eigenvalue of 24.95 and explains 40.91% of the variance. A total of 30 Q-sorts loaded significantly onto this factor, 19 from female patients and 11 from male patients. The average age of these patients was 39.6 (*SD* = 8.86).

The patients in this group show a marked capacity to follow the structure of the psychotherapeutic session, and their narrative is fluent and spontaneous. It does not take much for them to open up about their feelings and thoughts. They continuously mentalise in an explicit manner in the "here and now" of the session and in the "there and then" of their daily lives, past and present. As an illustration, after her therapist observed that she seemed to feel she had lost herself and was masquerading as another person, one patient responded:

> "But I can't say that this is false. This is not a masquerade or a replacement, it's something that came out of that rather than replacing one for the other, if that makes sense … after my friend left, the phone rung several times and I had calls to make after she left. (She then continue, later on) And then my friend went on to say something else about her shop, and about going home to her parents, and I was thinking "you have parents and they are so local". But I didn't say any of that. It was about listening to her. She was also talking about a semi-ex, dancing partner and then I called my best friend who is having some difficulties and I was trying to raise her spirits. I noticed that I was very mindful that she is low at the time, I should raise her spirits even if mine aren't that high. She was satisfied, sorted, and I put the phone down

> and realised that I had four listenings of people[19] [sic] that have come to me, but also that people can say things to me, which is good, it makes me feel trusted and reasonable" (Patient 217, session 7).

The way this patient dealt with the therapist's perspective suggests a capacity to take seriously what was going on in the clinical encounter. She doesn't disagree immediately, showing opacity of thought, but after further reflection she is able to find an alternative to the apparent black or white possibilities. She then substantiates her position by detailing the interactions during a day with her friends and how she was able to listen to what they had to say, even though she regarded their issues as trivial, "… I didn't say any of that. It was about listening to her". She recognised that she was not in the best of moods, but nevertheless carried on with the task of listening to others. At the end of the day, she could think about what had happened, and how other people had found her trustworthy. She noted how this had given her a sense of agency over her life that was not a façade but something that came out of her experience of depression and her struggles with it.

Another characteristic of the patients in this group is that, even when challenged by the clinician or presented with a rival explanation of an event being discussed, they are able to pause and take in the information before giving their own opinion, one way or another. Earlier in the same session the clinician suggested that appointments were becoming important for the patient and that a cancellation would be difficult for her. Before responding, the patient considered what the clinician had said, eventually stating: "Well, I wouldn't say no outright".

A free-flowing dialogue with clinicians allowed these reflective-cluster patients to inquire into their own motivations, expectations and the reasons for their behaviour, to take ownership of the events in their life and to recognise and be in touch with their own and other people's feelings. Patients tended to avoid short or automatic answers and, instead, freely elaborated upon their own mental processes and those of the people around them.

Although they tended to focus more on their own mental states, patients tried to be mindful of other people and to understand, both cognitively and affectively, other people's reactions to emotional situations in their everyday life, without losing sight of the fact that other people had their own reasons for thinking and feeling as they did.

[19] The patient used this expression seemingly to communicate that she had spoken to four different people that day.

Observable behaviour did not seem to be enough on its own to form an opinion about someone. This realisation allowed the patients to be less affected by other people's mental states and to assume responsibility for the situations they found themselves in. This excerpt from another patient highlights some of these characteristics,

> "Last couple of weeks I've been having a good relationship with my mum, and I'm trying to keep it like that by having good conversations and explaining that when she says things related to my appearance and weight it's no good for me. When she shows pictures of me where I look good I see someone that is lost, because I couldn't be me. I am so much happier and more existent in this world, and that doesn't get through to her. Now I found that, when I am in need of support, I can't go to her. That's why I went with my friend instead" (patient 198, session 6).

This patient is reflecting on how her mother interacts with her and the impact of that interaction on her present life. She is able to identify how her mother's comments affect her emotionally. But she also recognises that her mother is unlikely to change her approach, so she must look to someone else to help contain her emotional states.

4.4.1.2 Factor 2-T1: The Easily Overwhelmed Non-Mentalising Patient.

Table 4. 10 Factor Interpretation Crib sheet for Factor 2, time 1.

Items ranked 5

Items	Factor 2 Z-score
37. Patient becomes easily stressed and then readily loses the capacity to reflect on his/her mental states.	2.70
57. Patient tends to be easily overwhelmed by his/her own feelings or the apparent feelings of others.	2.56
23. Patient's narrative is dominated by non-reflective, naive, seriously distorted and/or unwarranted assumptions about thoughts and feelings of others.	1.67
25. When considering the reasons for problems or difficult situations, patient focuses on external social factors (e.g., his/her employer, the local council, the neighbours, etc.), avoiding thinking about reasons in terms of people's feelings, thoughts or wishes.	1.50
10. Patient seems intolerant of alternative perspectives on situations he/she is involved in.	1.46

Items Ranked higher in Factor 2-T1 array than in other Factor Arrays

Item	Z-Score	Factor Array
21. When experiencing stress and/or distress, patient favours the use of activity (e.g. exercise), inactivity (e.g. sleep) or medication rather than engaging with possible psychological causes.	1.30	4
22. Patient exclusively focuses on the significance of actions by others in terms of their practical implications rather than what they imply about the patient's or others' mental states.	1.22	4
61. Patient tends to describe his/her mental states with a correlated physical experience (e.g., 'I was shocked and got sick'; 'When I am depressed I feel tired and want to sleep all day').	1.05	4
13. Patient's language is dominated by statements of absolutes (always, never, totally, absolutely, etc.)	0.81	3
51. Patient has a tendency to attribute how he/she feels to external or environmental factors (e.g., the weather, fate, the traffic, other's behaviour).	0.73	3
46. Patient recognises that feelings such as guilt, happiness and depression influence their mental states and their perception of mental states in others.	0.59	3
27. Patient focuses on stereotypes or general categories or superficial descriptions when explaining people's actions (e.g. descriptors such as 'tired', 'lazy' or diagnoses such as, 'I have ADHD and that explains why I am so difficult').	0.06	2
20. Patient asks for constant reassurance in relation to their thoughts and feelings being acceptable and/or being generally liked as a person.	0.04	2

Items Ranked Lower in Factor 2-T1 array than in other Factor Arrays

Item	Z-Score	Factor Array
33. Patient reflects on what made him/her act in a certain way in a given situation.	0.70	3
55. Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest.	0.26	2
35. Patient is introspective – that is, he/she allows him/herself to explore his/her inner thoughts and feelings.	0.15	2
60. Patient tends to reflect spontaneously about the motives for his/her own actions and the reasons for his/her mental states.	-0.13	2
64. Patient takes responsibility for his/her own actions.	-0.40	2
58. Patient is in touch with his/her own feelings.	-0.43	1
42. Patient tends to talk about other people in psychological terms – that is, as being motivated by feelings, thoughts, desires and beliefs.	-0.65	1
32. Patient is capable of considering alternative viewpoints, even in topics that stir up strong feelings in him/her.	-0.80	1
2. Patient acknowledges that people (including him/herself) can have somewhat incompatible emotions and thoughts, even contradictory ones, at the same time.	-0.96	1
67. Even when talking about him/herself, patient tends to put others' mental states as the prominent feature of the narrative.	-1.02	1
66. Patient tends to focus on others' mental states, actions or behaviour.	-1.09	1
70. Patient tends to express his/her vision of others' emotional experiences and thinking processes.	-1.10	1
48. Patient is able to understand and empathise with others' feelings.	-1.17	1
30. Patient has the ability to correct his/her opinion about other people's thoughts or feelings when challenged by others.	-1.25	1

Factor 2-T1 has an eigenvalue of 7.08 and explains 11.6% of the variance. This group comprises a total of 8 patients, 4 males and 4 females, with a mean age of 46.1 (*SD* = 10.72). This factor was labelled "The Easily Overwhelmed Non-Mentalising Patient".

The patients clustered in this factor tend to experience the world in a more rigid manner, making mentalising a very difficult task. The combination of externalising, teleological and psychic equivalence items suggests an overlapping of, or rapid switch between, automatic mentalising, reflecting undigested aspects of their internal world, and a frequent re-emergence of non-mentalising modes of experience. Arousal seems to be constantly high: patients feel overwhelmed by their emotional experience of

themselves and of others, taking a non-mentalising stance, rejecting the possibility of thinking in terms of mental states.

As illustration, patients in this cluster group tend to make generalisations about mental states in themselves and others, often failing to see the individuality of each person: “everything is black or white, fair or unfair” (patient 127, session 11). They seem to be “thin-skinned” and easily affected by mental states in general, whether their own or assumed in other people: “I need to protect myself from people in everyday life. Because people are rude and you can be a victim of their treatment (patient 299, session 8)”. Being suspicious of other people’s intentions appears to be their default state.

Given their fixed view of the world, these patients suffer considerably when people around them do not act or behave as expected. Their inability to consider alternative perspectives or to understand competing, incompatible emotions also makes them more self-centred and less capable of empathising or recognising the mental life of other people. This group tends to blame the actions and attitudes of others for what goes wrong in their lives. As patient 127 in session 11 said, “To me, people keep doing things that I don’t like and I have to tell them, but I’m not always in control of any of my emotions whatsoever.” This illustrates a paradox within the group: patients worry about presenting themselves as likeable, and constantly search for the agreement of others, but at the same time are oblivious to the impact of their rigidity of thought and lack of agency on their own lives.

The constant emotional stress that these patients experience in relation to events in their lives is often experienced in terms of physical sensations. For these patients the body becomes a concrete place to express their unmetabolised mental states, yet at the same time the body and mind are dissociated. As one patient explained after talking about a suicide attempt, “I seem to physically recover very quickly. But some pills make me feel ill, or sluggish. I didn’t really think that much about the overdose, and I don’t feel guilty about it, I never felt guilty about any overdoses in the past” (Patient 103, session 6). Instead of dealing with the issue at stake, patients prefer to focus on activity and inactivity (“My bed is my escapism, not just from you but from everything”, patient 279, session 4), or on medication or other substances that help them to endure the mental pain, rather than to consider constructively the link between their psychological and physical condition, or allow any kind of emotion to break out and influence their perspective on life: “I’m feeling very strange, a strange sensation.

I kind of prefer when I am overwhelmed and I don't do anything. That feels better to me (patient 127, session 11)".

4.4.1.3 Factor 3-T1: The Disconnected Patient.

Table 4. 11 Factor Interpretation Crib sheet for Factor 3, time 1.

Items ranked 5

Items	Factor 3 z-score
26. Patient has limited insight into his/her own limitations.	2.59
24. Patient seems to be 'stuck' in one point of view, is repetitive and his/her train of thought does not seem to flow freely.	2.47
38. Patient seems unable or unwilling to modify his/her behaviour in response to feedback.	2.31
15. Patient tends to use most of his/her time reporting on issues and events that appear unimportant that fill space in the session (e.g. how a person in his/her workplace looked at him/her; a movie he/she watched; the order of the universe).	2.02
14. Patient has a flowing discourse but it lacks information about the patient him/herself.	1.95

Items Ranked higher in Factor 3-T1 array than in other Factor Arrays

Item	Z-Score	Factor Array
43. Patient tends to be easily affected by his/her beliefs about others' states of mind.	1.67	4
49. Patient is overly sensitive to how others look or behave.	1.57	4
39. Patient tends to respond to others in stereotypical ways, without giving much consideration to the reasons why others behave in a particular way.	1.25	4
66. Patient tends to focus on others' mental states, actions or behaviour.	1.01	4
41. Patient has a tendency to think of his/her own choices or feelings as being 'natural', self-evident or obvious.	0.99	3
40. Patient tends to easily 'jump to conclusions' about the mental states of others.	0.74	3
67. Even when talking about him/herself, patient tends to put others' mental states as the prominent feature of the narrative.	0.65	3
30. Patient has the ability to correct his/her opinion about other people's thoughts or feelings when challenged by others.	0.16	3

Items Ranked Lower in Factor 3-T1 array than in other Factor Arrays

Item	Z-Score	Factor Array
52. Patient tends to give thoughtful explanations of his/her own and/or other people's behaviours, thoughts and feelings.	0.04	1
34. Patient keeps track of his/her own thoughts and feelings.	-0.12	2
65. Patient tends to spontaneously express verbally his/her own feelings and thoughts.	-0.32	2
56. Patient tends to explain his/her behaviour and the behaviour of other people in terms of emotions and feelings.	-0.44	1
1. Patient is open to exploring experiences and memories even if they are painful.	-0.63	1
61. Patient tends to describe his/her mental states with a correlated physical experience (e.g., 'I was shocked and got sick'; 'When I am depressed I feel tired and want to sleep all day').	-1.15	

Factor 3-T1, which has the fewest Q-sorts for this patient group, has an eigenvalue of 3.171 and explains 5.2% of the variance. Six Q-sorts loaded significantly to this factor, 5 from female patients and 1 from a male patient. The average age of these patients was 41.5 (*SD* = 11.18). We labelled this factor "The Disconnected Patient".

This group of patients seems to have a disconnected experience of their own mental states, expressed in hypomentalising and hypermentalising strategies. Their discourse does not flow freely, tends to be ruminative, and addresses rather hollow topics. Starting the consultation is often difficult, with patients recurrently asking for help from the clinician: "Would you mind starting the session. Are you supposed to begin?" (patient 265, session 4). Patients may experience problems communicating in the session, incurring frequent and sometimes lengthy silences, or their narrative may lack a point or perspective: "I was thinking… what things are in my mind. I was wondering if there was a question that you wanted me to ask here. Should I ask you a question? (patient 321, session 7)", or as patient 129, almost at the end of the session, admitted, "I suppose that I just don't know where to start".

This latter patient (129), after the therapist suggested that maybe she was expecting the therapist to be there in the consulting room waiting, although the patient was

running late, added “I’ve always been like this. I used to… and that stops me getting out, how people look at you, I used to hate all… I hate that feeling if there’s quite a few people”. She responds with an emotional image that does not seem to connect to the context of the conversation, rather she goes on reporting short unconnected vignettes of her life, avoiding any type of reference to mental states. Such responses are identified with the content of item 15, and her behaviour and rumination with item 24: hence the name we gave to this factor.

Together with hypomentalising and hypermentalising strategies, these patients tend to be easily infected by the mental states of others. Accounts of their life tend to focus on external events that are not necessarily interconnected.

> “It was a nice day today, it was sunny, but I went to some shops…. It’s more stressful and it was busy and I have to be standing… I’ve been doing some writing… I phone my parents because I didn’t call them before, and my father said that he wasn’t pleased with me. And I said that I knew” (patient 236, session 14).

Or as another patient expressed when discussing the underlying benefits that she was getting due to her illness,

> “I don’t want to be self-destructive, as I have been, and still doing (sic), there are things that I haven’t been dealing with. Getting back into uni, getting back into the system. I feel very… I can’t be bothered, all the effort that I need to get out of there. […] Fear of failure. I don’t know what failure would mean, in here it’s just because… is so random, I don’t know what we are going to address in a particular session. I’m the kind of person… am I making any progress… I think progress. Am I just as disturbed…. Does anyone take me seriously, a self-fulfilling fantasy… I don’t know.” (patient 251, session 12)

The hypermentalising strategy can be seen in the therapeutic session as well, where the patient imputes a particular meaning to external features of the clinician – how they look or behave – and offer interpretations that may seem to be reflective but ultimately reveal the perplexity they experience in the interpersonal encounter:

> “I think that at the end of the last session I was thinking that I was feeling better, and second how do these sessions work. I come in and I sit down and I can talk about anything… but I’m not sure what the dynamic of the relationship with the therapist would be. An example, if I’m going to a butcher and I ask for whatever I feel like having, I don’t go there and think I will wait until the butcher tells me that he has something that is really, really good. But I’m not sure what this transaction is about. I have had so much therapy in my life, and what I have understood so far is that by dealing in the session with whatever I am concerned about by means of looking at what happens in the session, whatever I do in the world is mirrored with you in the session; but it’s clearly not just... it doesn’t feel as a discussion among two friends… the reason for that it’s because when you’re having a therapy… and because I don’t think that I know how the dynamic is set out to work, it’s about my feelings for you and you think about them and sometimes you just let me go on and on, or you would challenge what you think about what my mental

> process is about a particular view. So, you have the power and you can decide by your intervention how the session will go." (Patient 164, session 4).

While the patient's speech here is free-flowing – he barely lets the therapist talk – a little later he becomes somewhat irritated. In his narrative about the session, he assumes some sort of intention on the part of the "Tavi people", as captured by items 40, 41 and 43.

> "I think for me it's not been really stupid, but feeling the pricing of…the Tavi people have a power to do things that I experience when I went to counselling 15 years ago. I wonder what's supposed to happen in the session, what's this therapy aimed to do, this must have a name. I keep thinking that I need an idea, philosophical or real, what does this therapy do?" (Patient 164, session 4).

A surprising feature of these patients is their tendency not to report physical experiences of discomfort relating to stressful situations or to their mental states. Rather, they offer blurry autobiographical vignettes, such as, "I was happy sometime in the past, but I can't think of when" (patient 321, session 7) – another instance of a hypomentalising approach to processing mental states.

4.4.2 Factors at time 2.

The results of the Q analysis for the two main factors extracted in the second part of this study, i.e. for sessions beyond the midpoint of treatment, were very similar to those for factors 1 and 2 in the T1 sample. For this reason, we decided to use the same descriptive names, even though subtle variations in the ranking of certain items is evident in the summaries presented below. However, the third factor extracted was different to that for T1, as will be seen in a later sub-section.

4.4.2.1 Factor 1-T2: The Reflective Patient.

Factor 1-T2 has an eigenvalue of 25.84 and explains 50.67% of the variance. A total of 21 Q-sorts loaded significantly to this factor, 15 from female patients and 6 from male patients. The average age of these patients was 39.7 (*SD* = 9.55). We named this factor "The Reflective Patient".

Table 4. 12 Factor Interpretation Crib sheet for Factor 1, time 2.

Items ranked 5

Item	Z-Score
35. Patient is introspective – that is, he/she allows him/herself to explore his/her inner thoughts and feelings.	2.17
55. Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest.	2.07
65. Patient tends to spontaneously express verbally his/her own feelings and thoughts.	2.01
33. Patient reflects on what made him/her act in a certain way in a given situation.	1.84
34. Patient keeps track of his/her own thoughts and feelings.	1.80

Items Ranked higher in Factor 1-T2 array than in other Factor Arrays

Item	Z-Score	Factor Array
60. Patient tends to reflect spontaneously about the motives for his/her own actions and the reasons for his/her mental states.	1.79	4
62. Patient is curious about the motives behind his/her actions and the reasons for his/her mental states.	1.55	4
32. Patient is capable of considering alternative viewpoints, even in topics that stir up strong feelings in him/her.	1.47	4
58. Patient is in touch with his/her own feelings.	1.40	4
64. Patient takes responsibility for his/her own actions.	1.15	4
1. Patient is open to exploring experiences and memories even if they are painful.	1.10	4
5. Patient shows genuine curiosity about his/her and other people's perspectives, motivations and expectations.	0.89	3
53. Patient tends to consider the advantages and disadvantages of a specific situation and take them into account when making decisions about the situation.	0.89	3
54. Patient seems to easily grasp the meaning of mental states in him/herself and others, and focuses on the understanding and implications of these mental states.	0.84	3
2. Patient acknowledges that people (including him/herself) can have somewhat incompatible emotions and thoughts, even contradictory ones, at the same time.	0.74	3
31. Patient is capable of listening and/or elaborate to and taking in information that is emotionally difficult (i.e., information that challenges cherished beliefs, perceptions, and self-perceptions).	0.51	3
3. Patient shows realistic expectations and accurately anticipates the extent to which their own and others' emotions, thoughts and behaviour may be adequately controlled or regulated under challenging circumstances.	0.44	3

Items Ranked Lower in Factor 1-T2 array than in other Factor Arrays

Item	Z-Score	Factor Array
49. Patient is overly sensitive to how others look or behave.	-0.18	2
51. Patient has a tendency to attribute how he/she feels to external or environmental factors (e.g., the weather, fate, the traffic, other's behaviour).	-0.60	1
20. Patient asks for constant reassurance in relation to their thoughts and feelings being acceptable and/or being generally liked as a person.	-0.68	1
26. Patient has limited insight into his/her own limitations.	-0.82	1
19. Patient tends to demand attention from others in a way that is verifiable for him/her, such as phone calls or visits. These interactions serve his/her personal needs/interests more than the other person's.	-0.90	1

To illustrate the way patients in this group organise their narratives, we offer the following example of how one patient started his session:

> "Kind of difficult week, maybe a bit better than before. I have more perspective on it now, before it was more about anxiety, and I think… this thing that I have about anxiety and not realising when I'm feeling bad because of me or because there's something that makes anyone feel bad. So, I was really, really, into this woman but she rejected me quite a lot and that was painful. I kept thinking this week about it being painful. I was angry at the way that she did it and I had all these emotions. I think that when I am feeling anxious about something I tend to try and go for distraction techniques and avoiding because there's this physical thing that I don't know what to do about, but there's loss and I know that I need to sit with it and it will go at certain point. I learned that I can get over things with time (patient 319, session 51).

After more than a year of exercising his mentalising capacity, and of understanding and being able to use the clinical setting, this patient is able to start the session by talking about his response to a situation of rejection and the emotions he experienced. He distinguishes between individual feelings and recognises that anxiety triggers behavioural strategies that disguise what is going on. On reflection, and based on experience, he considers that he needs to "sit with it" and that he will get better with time.

4.4.2.2 Factor 2-T2: The Easily Overwhelmed Non-Mentalising Patient.

Factor 1-T2 has an eigenvalue of 6.51 and explains 12.76% of the variance. A total of 9 Q-sorts loaded significantly to this factor, 4 from female patients and 5 from male

patients. The average age of this group was 39.3 (*SD* = 6.69). This factor was named "The Easily Overwhelmed Non-Mentalising Patient".

Table 4. 13 Factor Interpretation Crib sheet for Factor 2, time 2.

Items ranked 5	
Item	Z-Score
57. Patient tends to be easily overwhelmed by his/her own feelings or the apparent feelings of others.	2.52
37. Patient becomes easily stressed and then readily loses the capacity to reflect on his/her mental states.	2.45
24. Patient seems to be 'stuck' in one point of view, is repetitive and his/her train of thought does not seem to flow freely.	2.14
10. Patient seems intolerant of alternative perspectives on situations he/she is involved in.	1.56
38. Patient seems unable or unwilling to modify his/her behaviour in response to feedback.	1.52

Items Ranked higher in Factor 2-T2 array than in other Factor Arrays

Item	Z-Score	Factor Array
13. Patient's language is dominated by statements of absolutes (always, never, totally, absolutely, etc.)	1.50	4
39. Patient tends to respond to others in stereotypical ways, without giving much consideration to the reasons why others behave in a particular way.	1.43	4
22. Patient exclusively focuses on the significance of actions by others in terms of their practical implications rather than what they imply about the patient's or others' mental states.	1.15	4
43. Patient tends to be easily affected by his/her beliefs about others' states of mind.	1.13	4
19. Patient tends to demand attention from others in a way that is verifiable for him/her, such as phone calls or visits. These interactions serve his/her personal needs/interests more than the other person's.	0.99	4
9. Patient sticks to an explanation of his/her behaviour, even when there are clear alternative explanations.	0.89	3

25. When considering the reasons for problems or difficult situations, patient focuses on external social factors (e.g. his/her employer, the local council, the neighbours, etc.), avoiding thinking about reasons in terms of people's feelings, thoughts or wishes.	0.85	3
51. Patient has a tendency to attribute how he/she feels to external or environmental factors (e.g. the weather, fate, the traffic, other's behaviour).	0.79	3
26. Patient has limited insight into his/her own limitations.	0.54	3
23. Patient's narrative is dominated by non-reflective, naive, seriously distorted, and/or unwarranted assumptions about thoughts and feelings of others.	0.50	3
41. Patient has a tendency to think of his/her own choices or feelings as being 'natural', self-evident or obvious.	0.04	2

Items Ranked Lower in Factor 2-T2 array than in other Factor Arrays

Item	Z-Score	Factor Array
55. Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest.	0.89	3
33. Patient reflects on what made him/her act in a certain way in a given situation.	0.66	3
34. Patient keeps track of his/her own thoughts and feelings.	0.31	2
56. Patient tends to explain his/her behaviour and the behaviour of other people in terms of emotions and feelings.	0.07	2
35. Patient is introspective – that is, he/she allows him/herself to explore his/her inner thoughts and feelings.	0.03	2
52. Patient tends to give thoughtful explanations of his/her own and/or other people's behaviours, thoughts and feelings.	-0.14	2
1. Patient is open to exploring experiences and memories even if they are painful.	-0.22	2
42. Patient tends to talk about other people in psychological terms – that is, as being motivated by feelings, thoughts, desires and beliefs.	-0.52	2
5. Patient shows genuine curiosity about his/her and other people's perspectives, motivations and expectations.	-0.57	1

54. Patient seems to easily grasp the meaning of mental states in him/herself and others, and focuses on the understanding and implications of these mental states.	-0.62	1
2. Patient acknowledges that people (including him/herself) can have somewhat incompatible emotions and thoughts, even contradictory ones, at the same time.	-0.68	1
59. Patient tends to be empathic, sensitive and responsive to other people's feelings and needs.	-0.76	1
70. Patient tends to express his/her vision of others' emotional experiences and thinking processes.	-0.76	1
68. Patient tends to reflect spontaneously about the possible motives for other people's actions and the reasons for their mental states.	-0.92	1
4. Patient shows the ability to be relaxed and flexible in relation to the views held by others and can readily move between perspectives adopted about the issue under discussion even when they have fairly firm views of their own.	-0.99	1
3. Patient shows realistic expectations and accurately anticipates the extent to which their own and others' emotions, thoughts and behaviour may be adequately controlled or regulated under challenging circumstances.	-1.00	1
48. Patient is able to understand and empathise with others' feelings.	-1.01	1
8. When patient communicates his/her affects, he/she is aware of and has concern for others in the way they are expressed	-1.05	1
30. Patient has the ability to correct his/her opinion about other people's thoughts or feelings when challenged by others.	-1.10	1
32. Patient is capable of considering alternative viewpoints, even in topics that stir up strong feelings in him/her.	-1.12	1
69. Patient can perceive other people's emotions and thoughts without having to react to them.	-1.23	1

We present the following excerpt as an example of the way patients in this cluster deal with mental states:

> "I forgot to say I don't speak to my sister and I found her in Facebook. And I wrote to her saying 'congratulations for finding your mother, I want to remind you about how you turned your back to me when I wanted to do the same thing and treated me like shit, you hypocrite', because she needed to be told that. Because she didn't support me or speak to me when I wanted to do it, so she needed to be told. I've got nothing with her anyways, so there is nothing to lose, no bridge to burn. I couldn't have that conversation without

> expressing my feelings … It's very upsetting because it's very unfair" (patient 299 session 45).

This patient is able to express his emotions up to certain point. The situation with his sister is aggravating, in that she has obtained something he was unable to get for himself. Instead of feeling any kind of empathy or joy for her, he feels betrayed and put down. He expresses his emotional response to this episode in a short interchange with the therapist but quickly moves on to another subject, without exploring or reflecting upon his feelings. Although it was certainly a painful episode, he seems unable to shake off the aching sensation of being treated unfairly by other people. His immediate affective reaction illustrates how the automatic dimension of mentalising takes prominence and, after finding it difficult to understand the event from his sister's perspective, he tries to get rid of his emotional state by focusing on the unfairness of the situation.

4.4.2.3 Factor 3-T2: The Other-Centred Patient.

As alluded to previously, the third factor for T2 is somewhat different to that of T1. This factor has an eigenvalue of 2.45 and explains 4.8% of the variance. Four Q-sorts loaded significantly to this factor, 3 from female patients and 1 from a male patient. The average age of this group was 45 (*SD* = 7.96). It was named "The Other-Centred Patient".

Table 4. 14 Factor Interpretation Crib sheet for Factor 3, time 2.

Items ranked 5	
Item	Z-Score
66. Patient tends to focus on others' mental states, actions or behaviour.	2.26
42. Patient tends to talk about other people in psychological terms – that is, as being motivated by feelings, thoughts, desires, and beliefs.	2.13
70. Patient tends to express his/her vision of others' emotional experiences and thinking processes.	2.13
55. Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest.	1.90
68. Patient tends to reflect spontaneously about the possible motives for other people's actions and the reasons for their mental states.	1.78
Items Ranked higher in Factor 3-T2 array than in other Factor Arrays	

Item	Z-Score	Factor Array
67. Even when talking about him/herself, patient tends to put others' mental states as the prominent feature of the narrative.	1.57	4
59. Patient tends to be empathic, sensitive and responsive to other people's feelings and needs.	1.41	4
48. Patient is able to understand and empathise with others' feelings.	1.25	4
8. When patient communicates his/her affects, he/she is aware of and has concern for others in the way they are expressed.	1.15	4
71. When talking to other people, patient tends to talk more about their concerns or interests than his/her own.	0.55	3
30. Patient has the ability to correct his/her opinion about other people's thoughts or feelings when challenged by others.	0.35	3

Items Ranked Lower in Factor 3-T2 array than in other Factor Arrays

Item	Z-Score	Factor Array
46. Patient recognises that feelings such as guilt, happiness and depression influence their mental states and their perception of mental states in others.	-0.021	2
64. Patient takes responsibility for his/her own actions.	-0.086	2
37. Patient becomes easily stressed and then readily loses the capacity to reflect on his/her mental states.	-0.805	1
61. Patient tends to describe his/her mental states with a correlated physical experience (e.g. 'I was shocked and got sick'; 'When I am depressed I feel tired and want to sleep all day').	-0.869	1
24. Patient seems to be 'stuck' in one point of view, is repetitive and his/her train of thought does not seem to flow freely.	-0.906	1

According to the factor array, this group of patients is able to elaborate upon their thought processes on various subjects that interest them. A focus on the mental states of others tends to be the main topic of these sessions, with patients showing an increased ability to imagine a rich psychological life of the people who compose their narrative.

> "Something good happened last night, my sister rang at midnight, very apologetic, and she just said that she wanted to hear my voice and I knew what this was about, and I knew that it was about her daughter, who is out of her mind. She's in awful trouble, that's why she contacted her mother, to get more money, but she couldn't get much sense of it as she was on drugs. So, there is going to be more conversation at lunch time, and she was telling me that it could be better if I was in our hometown. I feel sorry for her, this is hidden from her son and the husband, so I am the only one that she has, but I don't know what to say. She said that she wanted to speak to me because I was so wise, and I thought that it was nice. I think she needed someone to talk to, and it makes me angry as this daughter is so selfish and last time my sister saw her she was very abusive… How things have been for me I needed to ring my sister and tell her how things are, not just very painful and anxious" (patient 500, session 62).

In this excerpt, the patient starts by talking about a good feeling he has about himself, but instead of exploring this he decides to talk about his sister and her difficulties with her own family. He is able to empathise with her and imagine the solitude she feels in bearing her problem with her daughter alone. Some minutes later he is able to confirm that he felt needed and valued by someone else, and that made him feel good.

Another example illustrated the tendency of the patients in this cluster to focus on the other,

> "I don't remember the last time that someone came to the house, and when it happened it's like the biggest palaver. I think she is not confident… I know that is not that she doesn't want to help my dad, I'm sure it's not that. I think she feels something about herself that she can't do it, I think she doesn't admit it, I don't know if that's for sure. She has to clean before the cleaner comes, she looks very immaculate every day, and it's appearance that's very important, I don't know if there is something that she doesn't want people to see or… I don't have any idea. She used to be like that with my sister and me, I was always embarrassed. My mother is just… I don't think that she doesn't want to. (patient 321, session 59)

As can be inferred, these patients are able to offer an elaborate narrative about an event, to infer certain possibilities about the mental states of others and the reasons for these, and at the same time acknowledge the opaqueness of their thoughts. They are able to empathise with others, both cognitively and emotionally, and take care when expressing their emotions to ensure that other people are not hurt by what they are saying. However, as might be expected from a theoretical perspective, this interest in others has a consequence in terms of patients' diminished ability to focus on themselves. We can see this in the items that ranked higher in this cluster, and in the lower score for item 64, which assesses the responsibility a patient takes for his or her own actions.

4.4.3 Internal consistency and intercorrelations.

In the tables below (4.15 - 4.16), we present the analysis of the internal consistency of each factor and their intercorrelations at T1 and T2. For factor 1, at both T1 and T2, the Coefficient Alpha is above 0.97, suggesting very good consistency and reliability. This is important, as factor 1 explains the highest percentage of the variance at both T1 and T2 (40.91% and 50.66%, respectively). The Coefficient Alpha for factors 2 -T1 and T2- and factor 3-T2 are all above 0.8, suggesting good reliability. For factor 3-T1, the value was 0.711, which Nunnally (1978) considers acceptable when conducting exploratory research.

To explore the relationship between the factors, we calculated Pearson's correlation coefficients to examine the inter-relationships of the three different factors at time 1 and time 2, as showed in table 4.15 and table 4.16. In general, no significant correlations were found at time 1. More specifically The Reflective patient correlated negatively (-.009) with the Easily Overwhelmed Non-Mentalising patient, and positively with the Disconnected patient (0.30); moreover, no meaningful correlations were found between F1 and the other two factors. On the other hand, F2 and F3 were positively correlated.

We found a similar pattern of correlations in the T2 data, where a positive relationship between factors 1 and 2, and a negative relationship between factors 2 and 3 was found; none of them were significant. The only significant correlation was that between factors 1 and 3.

The two intercorrelations we obtained here are not that surprising. It is important to keep in mind that the rotation we employed, Promax with Kaiser Normalisation, assumed some kind of relationship between factors, unlike the orthogonal and zero-correlated rotation that traditional Q-analysis supposes. Therefore, the factor arrays, which are "the best-possible estimates of a factor's viewpoint" (Watts & Stenner, 2012, p. 143), suggest that the third, smallest factor is closely related to the larger factors extracted (Factor 2 at T1, and Factor 3 at T2). Factor 3 at T1, therefore, is a possible variant of a non-mentalising stance in which mental states are more disconnected, while factor 3 at T2 is a possible variant of the Reflective patient in which the other-oriented polarity predominates. However, it is important to stress that, although they may be related, the Q analysis identified these factors as separate and distinct clusters, as the descriptions and interpretations above make clear. Another important feature of these results is that a small sample size for factors in Q methodological research is not the disadvantage it tends to be in R-oriented studies (Stephenson, 1953; Brown, 1980; Watts & Stenner, 2005, 2012).

Table 4. 15 Intercorrelations for the derived three factors at time 1

	The Reflective Patient	The Easily Overwhelmed Non-Mentalising Patient	The Disconnected Patient
The Reflective Patient	-	-.009	.030
The Easily Overwhelmed Non-Mentalising Patient	-.009	-	.443**
The Disconnected Patient	.030	.443**	-
Cronbach's Alpha	.975	0.841	0.711

Note. **Correlation is significant at the 0.01 level (2-tailed).

Table 4. 16 Intercorrelations for the derived three factors at time 2.

	The Reflective Patient	The Easily Overwhelmed Non-Mentalising Patient	The Other-Reflective Patient
The Reflective Patient	-	.117	.624**
The Easily Overwhelmed Non-Mentalising Patient	.117	-	-.087
The Other-Reflective Patient	.624**	-.087	-
Cronbach's Alpha	0.977	0.851	0.868

Note. **Correlation is significant at the 0.01 level (2-tailed).

4.5 General Discussion

The aim of this study was to conduct a Q methodological analysis using the recently developed tool, the MQS, with the aim of testing its psychometric properties. Besides putting the measure to the test, we also wanted to contribute to the literature on mentalising and its relationship with depression.

The few studies that address the two topics together, summarised in chapter 1, describe a distortion in the depressed individual's mental states, which leads to a re-emergence of pre-mentalising modes of functioning. One of these is the psychic-

equivalence mode, which governs the relationship of the body and physical states in general with the individual's emotional interior (Luyten et al., 2012). Other research points to a more teleological stance in these patients, where the observable presence and behaviour of other people is needed to reassure the person that they are cared for (Fischer-Kern, et al., 2013, Ekeblad, Falkenström, & Holmqvist, 2016). These characteristics can be applied to factor 2 and 3 at time 1, and to factor 2 at time 2.

More importantly, what we can observe with the information gathered from the present research is that there is not just one type of impairment in mentalising in treatment-resistant patients, an idea that has been explored and researched by authors such as Blatt (2004) and more recently Rost et al. (2015). Instead, the capacity for mentalising seems to be inhibited in specific ways in people with refractory depression, reflecting different imbalances in the mentalising polarities and its effect on the capacity to reflect about the self and others.

At time 1 and 2, the largest clusters (explaining 40.91% of the variance at T1, and 50.66% of the variance at T2) were characterised by fluent narratives, with openness and interest in knowing about internal states such as emotions, thoughts and motivations. These patients made use, mostly, of a controlled mentalising stance. They put some effort into reflecting on what they were thinking and experiencing, recognising different perspectives of the situation being discussed. They were also flexible in their perspective, being able to argue for or against a position instead of maintaining a rigid perception or idea of a situation. They also seemed to have better interpersonal relations, and were able to reflect on the perspective that other people might have. The name "Reflective patient" therefore suited this group well.

The fact that patients in this group were able to make use of their mentalising capacity may be an effect of the psychotherapeutic setting, in which a safe attachment relationship can be built, triggering a state of openness that allows individuals to learn from their interpersonal interactions and extend this learning to the social world (assuming they have a "good enough" environment – Fonagy and Campbell, 2017). This is the idea that Fonagy et al. have been exploring in the concept of epistemic trust, (Fonagy and Allison, 2014, Fonagy, Luyten, Campbell & Allison, 2014; Fonagy, Luyten & Allison, 2015; Fonagy & Luyten, 2016). It can be argued that patients in this group have enough epistemic trust to make use of their mentalising capacity when in the company of the therapist, an ability that is characteristic of high-level mentalisers in their capacity for relationship-recruiting – to become attached to others who are caring and helping (Luyten et al., 2012; Bateman & Fonagy, 2016). The consequence

of this is that patient and therapist may be able to effectively co-regulate in the face of arousal during the session, substantiating the findings of Taubner et al. (2011) that patients with higher RF scores are able to establish a therapeutic alliance more easily than those with lower RF scores.

However, as we noted in the description above, it could also be related to a preferred strategy of using a more controlled/explicit means of reflecting about mental states, one which helps patients feel in control of situations they are involved in. Although we will address the relationship between this and other groups and measures in chapters 5 and 6, we consider that more research is needed to clarify the link between high-level mentalising and depression.

The findings for the Easily Overwhelmed Non-Mentalising Patient group support the above-mentioned relationship between pre-mentalising modes and depression, but we must be careful in interpreting our results. As our research was concerned with naturally occurring groups in the process of psychotherapy for patients diagnosed with refractory depression, it could be said that our sample was biased in favour of individuals with good mentalising skills (who, for that reason, were more likely to attend psychotherapy) or, rather, that we identified a cluster of subjects who were implementing their mentalising capacities in accordance with the aims of the clinical setting.

The patients grouped into factor 2 at T1 and T2 (explaining 11.60% and 12.76% of the variance, respectively), and those who loaded significantly to factor 3 at T1 (5.2% of the variance), showed a greater propensity for pre-mentalising modes of functioning, as suggested by the literature reviewed in chapter 1 (such as the work of Fischer-Kern, et al., 2013, Ekeblad, Falkenström, & Holmqvist, 2016). These patients seemed to have difficulties at the beginning of treatment with the clinical setting, reflected in their constant demands that the clinician take a more active role. On the other hand, those with physical complaints seemed to prefer to deal with these through medication, activity or inactivity. Besides this, patients would make generalisations about mental states and could at times be quite rigid in their perceptions. This pattern of behaviour, which is characteristic of certain forms of depression, is thought to involve impairments to the automatic/affective versus controlled/cognitive polarities of mentalising and the neural circuits underpinning this (Fonagy and Luyten 2009).

The presence of this impairment suggests the existence of a form of depression that is characterised by a failure of reappraisal and suppression of negative affect – an

imbalance of the controlled dimension – expressed as more immediate or automatic affect-dominated mentalising. “This primacy of affect may help to explain the biased, nonreflective assumptions about the self and others and the regression to prementalizing modes that characteristically dominate depressive states” (Luyten et al., 2012, p. 398), as some research has already suggested.

A consequence of this mentalising preference is that patients find it difficult to modulate affect in the presence of another person or attachment figure, as they are constantly suspicious of the nature and potential cost to themselves of the other person’s motives – a trait also found in people with personality pathology, as described elsewhere (Fonagy, Rost., et al, 2015). These patients face a continual dilemma, as their intense desire for reassurance is undermined by the need for separateness due to their lack of trust in the other (Fonagy, Luyten and Allison, 2015).

Finally, the Disconnected patient, the third factor at time1, was characterised by a severe inhibition of reflective capacities. Individuals in this group tended to focus on other people’s behaviours instead of appreciating feelings and intentions in themselves and others. They exhibit a sort of empty narrative, where little is transmitted about mental states: instead an inflexible perspective is presented, marked by overly sensitive reactions to the imagined opinions of others. Similar to the Easily Overwhelmed patient, this group tends to resort to pre-mentalising modes of functioning, distorting their perceptions of self and other and creating a malignant cycle of depression, as outlined in chapter 1, figure 1.3 (Luyten et al, 2012).

A teleological stance can be observed in this group, where the observable behaviour of others, including the therapist, trumps any consideration of their intentions or thoughts. The focus here on externality and rigid, generalised conceptions beyond a specific context can sometimes look like mentalising but in truth lacks content (Bateman and Fonagy 2016). It is referred to instead as hypermentalising. As has been suggested, it may be that this group of patients tends to use attachment deactivating strategies in response to threats to attachment relationships, combining hypermentalisation with overactivity as a defensive means of inhibiting mentalising capacity.

At time 2, we saw the first two factors emerge in a very similar fashion as at T1, but also a new factor appeared, “The Other-Reflective Patient” (explaining 4.80% of the variance). Although the factor loadings for this group were relatively small, this is not a worry in Q methodology, where restricted sample size is not a major disadvantage.

In this particular case, patients are reflective, but the emphasis of their mentalising is relatively flexible between the Self and Other dimensions, or slightly tilted towards the Other.

The patients in this group seemed able to take a more reflective stance towards other people, which helped them to empathise in a cognitive and emotional manner. It could be said that they had reached what Elliot Jurist called “affectivity” (Jurist, 2005, 2010, 2018), a topic that was explored in the first chapter and refers to a refined way of identifying, processing and expressing affects (see numeral 1.3.3). This focus on others, however, is accompanied by a reduced capacity or interest to reflect upon themselves, as would be expected. This distinctive feature could be the result of the psychotherapeutic approach and the importance it places on the therapeutic relationship. By focusing on others in their clinical and social environment, the patient may be attempting to deny or detract from their own emotions and their experience of ending the relationship, which could be felt as a loss. However, it would be important to replicate these findings and investigate if this is characteristic of a particular set of patients undergoing psychoanalytic psychotherapy, or is found in other types of psychotherapeutic approaches, such as in CBT.

4.6 Limitations

Although this Q analysis produced some interesting results regarding mentalising styles of patients with chronic depression in long-term psychoanalytic psychotherapy, it has some limitations that need to be recognised.

The MQS is a measure designed to assess the mentalising capacity of patients during the process of (psycho)therapy. However, the interaction between patient and clinician is lost in the ranking of items, as they are completely focused on the narrative that the patient delivers during the session. How this narrative is influenced by the therapist’s interventions, or the lack of them, and the extent to which the therapist tries to help the patient keep or regain their mentalising capacity, does not form part of the picture provided by our Q set. We think that measures such as the PQS devised by Ablon and Jones (1998) can be a good complement to the one presented here, but we recognise that rating two different Q-sorts can be tiresome and not cost-effective. We hope that an integrated measure that takes account of the clinical interaction by assessing the mentalising abilities of both participants in the clinical setting and how they affect each other will be developed in the not-too-distant future.

Closely related to the above point, our results tell us something about a specific type of patient, one who is chronically depressed and refractory in their symptomatology, and a specific kind of intervention, namely LTPP. This accords with the traditional aim of qualitative Q analysis, which states that findings are not meant to generalise to "entire populations of people" (Watts, S., & Stenner, P., 2012, p. 183), but not with the more contemporary perspectives advanced by Block (2008) or Westen and Shedler (1999a, 199b), where the formulation of clinical predictions is one of the main goals of the assessment.

Would we obtain similar results had we used the MQS to assess mentalising capacities in patients undergoing other forms of treatment, such a brief therapy, cognitive-behavioural therapy, interpersonal therapy? What kind of factors would we obtain were we able to get data from mentalisation-based therapies? While the claim that all effective therapies increase mentalising capacity has yet to be confirmed or disproved, in this particular instance a non-mentalising-oriented therapy (in the sense that it was not based primarily on mentalisation therapy principles) seemed to deliver improvements, as shown by the increase in the variance of the mentalising groups.

On the other hand, certain patients who were good mentalisers at time1 dropped out of treatment. It is possible, therefore, that good mentalisation, as assessed by the MQS, tells us more about a patient's compliance with the treatment setting at a certain point than any improvement in their symptoms. This in turn may explain why some patients feel disappointed with the psychotherapeutic process. Future research is needed to test the generalisability of the results obtained in this study to other population samples, in terms of diagnosis, age and type of treatment.

Another difficulty was that, although the author and rater of the MQS for the present study considered the possibility of being "blind" to the session they were rating, in practice it was impossible to do so. The fact that the aim of the TADS study was to research LTPP and depression made the interaction between clinician and patient a central focus of the interventions throughout the treatment process (Taylor, D., 2012). It was therefore almost impossible not to know in which phase of treatment a session took place. We recognise that some bias may result from this, as there might be expectations on the rater's part of how a patient narrative should differ at the beginning and end of treatment.

Bias of this nature might have been reduced had there been additional raters to compare the ranking of items. Instead this became a fourth limitation. Due to the time it took to get responses from the experts for study one, we needed to carefully manage the time available to conduct this second phase of research. In addition, we were not able to find someone who could commit to the time needed to perform inter-rater reliability. We were aware that condensing this process would create some difficulties, no matter how conscientious the rater was in ranking the sessions. For this reason, we cannot be sure that the results presented in this chapter would be substantiated by replication.

A fifth limitation with the MQS is that it is not meant to assess the mentalising capacities of patients with overtly psychotic or psychotic-like symptomatology. The tool was developed to look at the different aspects of mentalising in patients who have the capacity to infer the mental states of themselves and others based on good reality testing. However if patients make use of this capacity to mentalise a person that only exists in their minds and not in the objective world, the result might appear to be "other-oriented" in mentalising jargon, but would in fact be the product of a hallucination, confounding the assessment of the reflective capacity. The measure does not inquire into the physical reality or accuracy of their perceptions. In the present study we encountered one session in which the veracity of the patient's perceptions was called into question, meaning we had to assess the material with particular care. This strikes us as a possible restriction to applying the MQS.

One final aspect to discuss is the method *per se*. When compared to other methodologies that assess the therapeutic process or outcomes, such as checklists or questionnaires, it is obvious that Q-sorting is much more time-consuming, as a researcher needs to be trained in how to code and then take time to think about the ranking of items. This is part and parcel of the ipsative quality of the technique. The first Q-sortings will inevitably take longer, as our experience with the MQS confirmed: the rating of items in the current study took between 30 and 40 minutes at first, eventually shortening to 20 to 30 minutes. Although the therapy sessions were meant to last for 50 minutes, listening to the recordings can easily take 90 minutes, depending on the quality and clarity of the recording (some patients spoke in a very low voice, or while crying, making the task of understanding what they were talking about more difficult). The rater usually takes verbatim notes so that the ranking is based not on memory or on their emotional response to the session but rather on the evidence of the patient's own narrative.

As can be inferred, following a fixed distribution in the Q-sort can become a mechanical exercise, with the danger of losing a more reflective stance towards the content of the session. One way to address this would be to have periodical team meetings where raters Q-sort a session together and "calibrate" their ranking procedures. But as mentioned before, it was not possible in the current study to have more than one rater.

4.7 Methodological remarks

Our use of the MQS highlighted certain commonalities with other developed Q-sort measures. First, we opted for a standard language and "manual" to make the sorting process easier. We consider this a major contribution, as it allows us to describe a patient in a psychotherapeutic session in mentalising terms but using non-technical everyday language that can be understood easily. It follows that the MQS can be used in different forms of treatment beyond the psychoanalytic-oriented setting, and with other aims, such as describing the change in the mentalising style of a single patient from session- to session. We hope that this type of research will be carried out in the near future.

Second, the MQS uses a prearranged fixed distribution in order to obtain "commensurateness" (Block, 2008, p. 112), reducing the risk of a halo effect and warranting "multiple discriminations among the items" (Calderon, A., Schneider, C., Target, M., & Midgley, N., 2017). As there are 71 items in total, and just 5 in the "most characteristic" category, the possibilities for describing a patient are quite wide.

Thirdly, the measure uses intercorrelations amongst Q-sorts in order to extract the factors. As we will show in the next chapter, this data can be used to perform quantitative analyses from a traditional "R" perspective. This highlights the possibility of using "mixed methods" research to derive information on subjective aspects of experience which can be standardised and compared with that of a different universe of participants.

As a mixed-methods research project, this study has much in common with the procedures proposed on the one hand by Brown (1980) and Watts and Stenner (2012) and on the other by Block (1960, 1971, 2008), Jones (2000) and Westen and Shedler (1999a, 1999b). But it also has distinctives features, born out of the influence of the work of Westen and Shedler on recent research at the Psychoanalysis Unit at UCL

(i.e. Calderon, A., 2014; Calderon, A., Schneider, C., Target, M., & Midgley, N. 2017; Rost, F., Luyten, P., & Fonagy, P., 2018). This study has followed the path created by former PhD candidates, and advanced the perspective offered by Stephenson in the same department more than 80 years previously.

4.8 Concluding Remarks

The aim of this study was to conduct a by-person analysis that would allow us to assess the psychometric properties of the recently developed MQS by identifying natural occurring clusters of people in the LTPP branch of the TADS at two different times in the therapeutic process. A 71-item Q-set, the MQS, was used which identified three factors, both at time1 and at time2.

From a mentalising perspective, “depressive symptoms are thought to reflect responses to threats to attachment relations and, thus, threats to the self-caused by (impending) separation, rejection, or loss; by (impending) failure experiences; or a combination of these” (Luyten et al., 2012, p. 386). The derivation of three groups at T1 and T2 through Q analysis, while not shedding light on their specific origins, is congruent with theoretical assumptions about the heterogeneous quality of depression (Blatt, 2004; Rost, Luyten & Fonagy, 2018). Within the mentalisation literature, two of the groups at time 1 were congruent with findings about depressed patients having lower scores in RF. However, we found a third group with a high level of functioning in terms of mentalising capacity.

The emergence of these groups also supports the theorised multi-dimensionality of depression (Blatt, 2004, 2008; Luyten et. Al, 2012; Rost, Luyten & Fonagy, 2018). Our results show that, while all participants had been diagnosed with a treatment-resistant condition, they exhibited a range of characteristics, including in mentalising terms. Specifically, our findings suggest that there is not just one manner of mentalising within this population. While the interpersonal cycle of depression (figure 1.3) appeared to hold, differences in its key elements (e.g. arousal, ability to mentalise, loss of resilience – Lemma, Target & Fonagy, 2011; Luyten al, 2012) generated specific and discernible groups, as seen at the beginning of treatment. Furthermore, undergoing psychoanalytic psychotherapy appeared to increase the capacity of certain patients to mentalise, as indicated by factors 1 and 3 at T2.

As recent neuroscientific discoveries (Lieberman, 2013; Luyten & Fonagy, 2015) demonstrate, the understanding of mentalising is a multidimensional and flexible competence. Evidence for the four discernible but interrelated polarities that are claimed to govern mentalising activity[20] was found, to a larger or lesser degree, in the three derived factors from the Q analysis. But having confirmed the ability of the MQS to derive naturally occurring factors in a sample of depressed patients, we need to further assess its utility and validity by comparing it with other existing methods of measurement, more specifically those used in the development of the TADS.

[20] Automatic vs Controlled, Cognitive vs affective, Internal vs External, Other-Oriented vs Self -Oriented.

PART III:

DATA ANALYSIS AND PSYCHOMETRIC PROPERTIES OF THE MQS

Chapter 5: Preliminary validity of the MQS

Chapter Overview

This chapter presents the results of a preliminary validation study of the newly developed MQS. Our aim is to examine how the MQS correlates with other measures and their outcomes in the LTPP sample of TADS, to empirically test whether the three-factor structure identified in the Q analysis at T1 can be reliably differentiated. To this end, we examined the convergent and discriminant validity of the MQS by comparing it with other validated instruments. Convergent and discriminant validity (Cohen & Swerdlik, 2009) can be defined as a conjunction of measures designed, respectively, to assess the same or similar conceptual constructs and those that should not, at least theoretically, be related.

Another objective of this study was to subject the findings of the person-centred analysis of the previous chapter to a variable-centred analysis: in other words, to combine Q and R analysis of the same dataset, highlighting the possibilities and advantages of such an approach. We took necessary steps in order to use the data in this fashion (Ozer & Gjerde, 1989). In this chapter we present and analyse the results.

Introduction

We mentioned in chapter one that there is a continuous dialogue between mentalising research and other disciplines. But while prototypical mentalising profiles have been elaborated for conditions such as borderline personality disorder (Luyten et al, 2012), antisocial personality disorder (Bateman & Fonagy, 2016) and eating disorders (Skarderud & Fonagy, 2012), to name just a few, there is little evidence of correlations between these profiles and other assessment measures.

A study that reveals and explores significant relationships between the MQS profiles identified in the previous chapter and other variables is very much needed to empirically test whether these profiles are reliable. Therefore, as a further step in developing the validity of the recently developed MQS, we aimed to find meaningful bivariate correlations – and consider the relationship between variables – using the dimensional scores from the Q analysis (described in the previous chapter) and data from different measures, at different assessment points, used in the TADS study. For this purpose, we will use the factor structure derived at T1 of our Q analysis, i.e. from

recordings at the beginning of the treatment. This starting point will allow us to understand whether each of the three clusters have a variation or a specific direction from their baseline scores in terms of the other assessment measures used in the study, information that could not have been produced using the factors at T2 as it was gathered at the end of the treatment.

More specifically, in order to affirm that the three-factor structure derived at T1 can be reliably differentiated, we needed to investigate the direction of the possible relationship between the MQS and the TADS measures, and the magnitude of this relationship. In the present study we are therefore concerned with the concepts of convergent validity – the evaluation of whether a measure correlates with another established scale or similar constructs – and discriminant validity – the extent to which constructs which should have no relationship are, in fact, unrelated (Cramer, & Howitt, 2004; Everitt, 2002).

5.1 Current Aims and Hypotheses

As mentioned above, the aim of this study was to test empirically whether the three identified mentalisation profiles of depressed patients at the beginning of treatment (T1) can be reliably differentiated. For that purpose, we analysed the relations of the three identified mentalising clusters in the previous chapter and investigated correlations with indices of the severity of depression, the Hamilton Rating Scale of Depression (HRSD) and the Beck Depression Inventory (BDI-II), the Global Assessment of Functioning Scale (GAF), the Person's Relating to Others Questionnaire (PROQ-2a), the Shedler and Westen Assessment Procedure (SWAPP-II), and some indices of functioning that included relationship status, academic background and substance misuse, among others.

We hypothesised that there would be significant differences in the associations of the three groups with the study variables used in the TADS. We predicted that the Reflective group of patients would be more negatively associated with the two depression measures used by TADS compared with those for the Emotionally Overwhelmed and Disconnected group of patients at the different assessment points. This means that the Reflective Patient group would have, in general, lower scores on those measures, congruent with the findings of Lemma, Target and Fonagy (2011) and Luyten et al, (2012). This idea was presented in chapter 1, and represented in figure 1.3. By contrast, we predicted that the Emotionally Overwhelmed Patient group would show the highest positive association with depressive symptoms, as they tend

to be in constant arousal, and that the Disconnected Patient group, although they may show significant associations in certain areas, would overall have a lower association with depressive measures than the Emotionally Overwhelmed group.

On the question of how patients relate to other people, we consider that all three groups might have difficulties in this area, but that the Reflective Patient group would show the fewest indications of problematic relationships. Similarly, although some of the everyday activities measured by the GAF and indices of functioning tend to be predictive of depression, we hypothesise that the Reflective patient group would perform better here. As for the other two groups, we expect to find some difficulties in this domain, with the Disconnected group afflicted most.

Finally, we consider that although there might be associations among participants with the SWAPP-II, the Reflective patient would have the fewest connections in this area. As these individuals show a capacity to reflect about themselves and others, their interactions are more likely to be disrupted in other ways (such as withdrawal) that do not suppose a negative intention on the part of others, or a need for tangible proof that people care about them. The Emotionally Overwhelmed Patient is likely to have more positive associations in this area, as they tend to be emotionally dysregulated, making them the clearest candidates for a link with borderline personality traits.

5.2 Participants

The analysis was carried out with 60 patients (38 females, 22 males) assigned to the LTPP stream of the TADS study. These were the same participants described in chapter 4. We decided to remove one of the participants from this analysis, due to gaps in their data at several assessment points. There is consequently a disparity of one in the participant set for the two studies.

5.3 Measures

5.3.1 The Hamilton Rating Scale of Depression.

The primary outcome of the TADS study was assessed using the Hamilton Rating Scale of Depression (HRSD), a well-known interview-based measure of depression severity in psychotherapy that has also been used in pharmacological medication outcome research. Developed by Max Hamilton in 1967, it is the most widely used interview-based measure of depressive severity, with psychometric properties that

have been proven to be acceptable (Bagby et al., 2004). It consists of a structured interview rated by independent assessors. The final scores give a description of the grade of depression severity as follows: 0 - 7 not depressed; 8 – 13 mildly depressed; 14-18 moderately depressed; 19 – 22 severely depressed; and 23 or above very severely depressed. For the TADS research, two independent assessors carried out blind ratings, obtaining an ICC of .89, which is considered excellent (Rost, Luyten & Fonagy, 2017).

5.3.2 Beck Depression Inventory.

The Beck Depression Inventory or BDI-II (Beck, Steer & Brown, 1996) is the most commonly used self-report measure for the assessment of depression severity (Taylor, et al., 2012). It consists of 21 items that are scored from one to three, yielding a total score ranging from 0 to 63. The final scores have the following designation: 0 - 13 not depressed; 14 - 19 mild depression; 20 – 28 moderate depression; and 29 – 63 severe depression. The measure has obtained a Coefficient Alpha of .92 for an outpatient population and is therefore considered to have excellent reliability and diagnostic efficiency (Nezu et al., 2000; Beck, Steer & Brown, 1996).

5.3.3 Indices of Functioning.

These indices relate to how a person copes with their everyday activities and relationships. They cover various aspects of clinical, occupational and relational functioning, including the presence or absence of suicidal ideation. The same standard can be used to assess self-harm, drug and alcohol abuse. In the case of educational achievement, they record whether a participant lacks formal education or has obtained an undergraduate university degree. Relationship status is identified (single, separated/divorced and married/cohabiting), along with romantic relationship patterns (unstable, unfaithful and abusive). Researchers will also generally note if participants are employed or not. In the TADS study this data was elicited and collected at intake using different strategies, such as (a) an adapted version of the Client Service Receipt Inventory (Beecham & Knapp, 1992), a self-report measure that collects data on demographics and social and health service utilisation, (b) the SCID-I assessment, which is an interview based on the DSM-IV for mental disorders, and (c) the Tavistock Psychodynamic Interview (TPI), which gathers information on romantic relationship patterns and is categorised by two independent research assistants. If the research

assistants disagree, a third assessor would verify the information. (Rost, Luyten & Fonagy, 2017).

5.3.4 Global Assessment of Functioning Scale.

Also known as the GAF, the Global Assessment of Functioning Scale (Hilsenroth et al., 2000) is a DSM-IV rating instrument (Axis V) that assesses psychological, social and occupational functioning on a hypothetical 0-100 continuum of mental health/illness (Taylor et al., 2012; Task Force on DSM-IV, 2000). Scores are obtained from an aggregate of information on each patient and the following severity indicators are applied: < 40 very serious impairment; 41—50 serious; 51—60 moderate; 61—70 mild impairment; >70 healthy functioning. In the TADS study, GAF was rated as part of the SCID-I assessment interview and double-rated by an independent assessor. Inter-rater reliability was excellent, with an ICC of .91 (Rost, Luyten & Fonagy, 2018).

5.3.5 Person's Relating to Others Questionnaire.

The Person's Relating to Others Questionnaire (PROQ-2a – Birtchnell, 1999; Birtchnell & Evans, 2004) is a 96-item self-report instrument that comprises eight scales. The questionnaire is based on an idea Birtchnell calls "relating theory", which proposes that "relating can be defined within two intersecting axes: a horizontal one, concerning seeking involvement (closeness) versus seeking separation (distance) and a vertical one, concerning relating from above downwards (upperness) versus relating from below upwards (lowerness)" (Birtchnell & Evans, 2004, p. 126). Items are scored on a 0-3 scale, with an overall score for each participant ranging from 0 to 15 for a series of categories or "octants". High scores reflect deficiencies or incompetence in interpersonal relating in the following areas: UN — pompous, boastful, domineering, insulting versus leading, guiding and advising; UC — intrusive, restrictive, possessive versus protecting, helping, providing for; NC — fear of separation and of being alone versus friendly involvement and interest; LC — fear of rejection and disapproval versus seeking care and protection; LN — helpless, shunning responsibility versus seeking direction, guidance, and advice; LD — acquiescent, subservient, withdrawn versus loyal and respectful; ND — suspiciousness, uncommunicative, self-reliant versus needing personal space and privacy; and UD — sadistic, intimidating, tyrannising versus controlling and maintaining order. Below we present two figures corresponding

to the positive (figure 5.1a) and the negative (figure 5.1b) forms of relating that can be found within this measure (both figures are taken from Birtchnell & Evans, 2002).

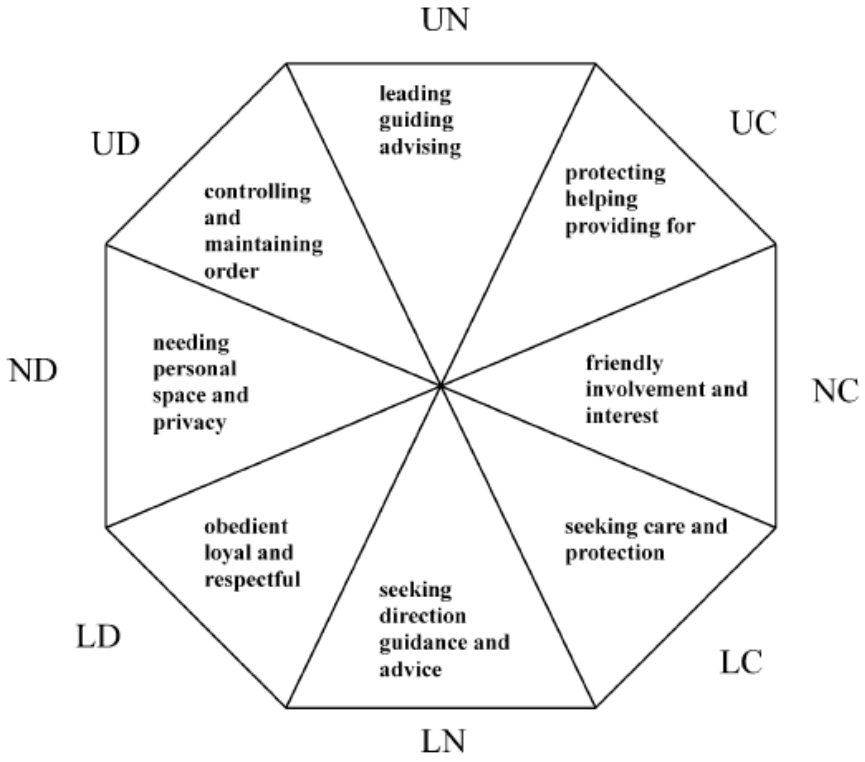

Figure 5. 1 Positive ways of relating

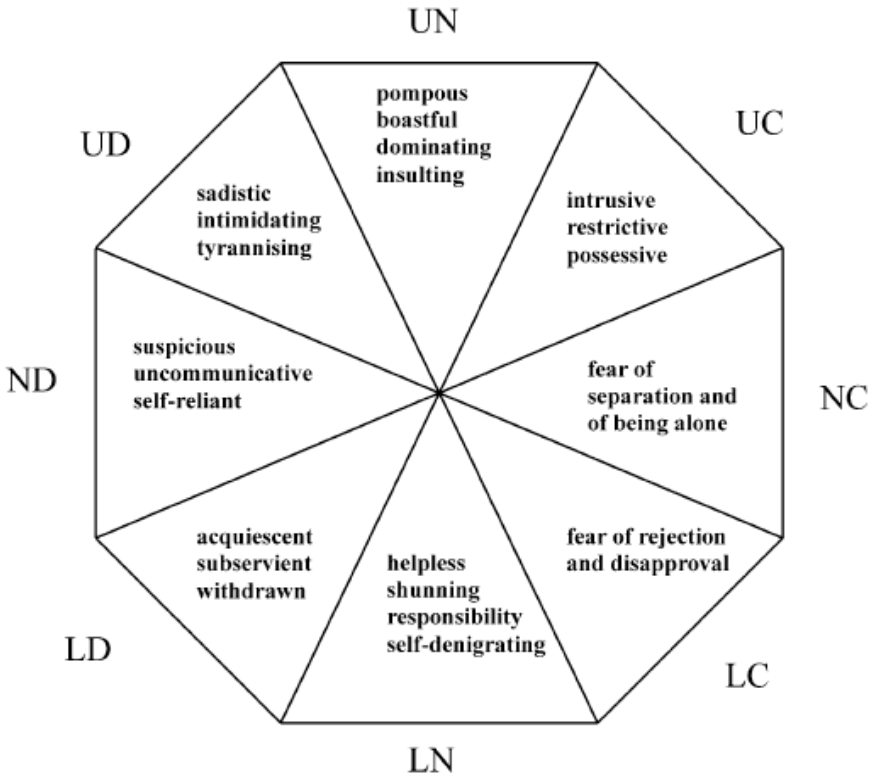

Figure 5. 2 Negative ways of relating

5.3.6 The Shedler and Westen Assessment Procedure.

As mentioned in the second chapter, the Shedler and Westen Assessment Procedure (SWAP-II) is an instrument designed to assess personality and personality pathology. It is based on the Q-sort method, as applied by Block (1961), which requires an observer or expert clinician to rate 200 component items in a fixed asymptotic distribution, where the bulk of items receive a ranking of 0 (not descriptive) and progressively fewer items receive higher values up to 7 (most descriptive) (Shedler and Westen, 2007). The resulting scores are used in a person-centred analysis to determine the extent to which a patient matches one of 13 different personality types: dysphoric (depressive), antisocial-psychopathic, schizoid-schizotypal, paranoid, obsessional, histrionic, narcissistic, avoidant, high functioning depressive, borderline (emotionally dysregulated), dependent-victimised, hostile-externalising. The procedure also offers an alternative variable-centred assessment, where diagnostic constructs, i.e. personality traits, are identified via factor analysis. The possible factors are psychological health, psychopathy, hostility, narcissism, emotional dysregulation, dysphoria, schizoid orientation, obsessionality, thought disorder, oedipal conflict, dissociation and sexual conflict (Shedler, 2009).

5.4 Procedure and Statistical Analysis

5.4.1 About the change of the data from Q to R.

Before presenting the details of our study, we would like to clarify some methodological considerations that informed the decisions taken in this part of our research. Although the next few paragraphs could be said to belong to chapter 2, we did not want to confuse the reader of that chapter by describing the mixed-methods approach envisioned, opting instead to focus on the main features of Q methodology. The particulars of the combination of Q and R analysis used for validity testing are therefore presented here, where they are more pertinent.

According to Block's citation of Scholte, van Lieshout, de Wit, & van Aken (2005), the main difference between variable-centred and person-centred approaches is that "if the variable-centered approach describes the building blocks of personality, the person-centered approach describes the building" (quoted in Block, 2008, p. 14). The Q-sort method, as proposed by Stephenson, offers a person-centred perspective that

can develop into a useful technique for the assessment of personality as a whole (see Block's extensive work on the subject). But for this to happen, a more empirical, variable-centred approach must be applied to the Q methodological data. Authors such as Asendorpf (2015), Watts & Stenner (2012), and Ozer & Gjerde (1989), recommend caution in this endeavour, which involves a standardised R-oriented approach, but endorse it as a necessary step in this mixed methods approach.

The person-centred approach of Q sorting yields information about the subjectivity of the individual who sorts items in an ipsative fashion. The fact that statements are ordered relative to each other, according to the criterion established, produces a score that represents the position of that item (variable) in reference to all the other items (variables) that constitute the Q set. By contrast, a variable-centred approach, which commonly uses normative measures, where the score given to one item does not necessarily depend upon any other items, "provide[s] information about the trait structure, stability, and validity for an average person in the sample" (Asendorpf, 2015, p. 403). These three elements are measured by the correlations between them. The data thus produced can be interpreted as signalling the likelihood that two or more traits shown by individual study participants are consistent, but also that a trait is stable and valid for a participant or group of participants. However, this likelihood is computed based on the average of the data provided by all the participants in the sample, a fact which must be kept in mind.

Therefore, the factors obtained from a Q analysis "can be interpreted as new profiles and the factor loadings as the similarity of each person's profile with the new profiles" (Asendorpf, 2015, p. 411). This takes us back to the disagreement between Burt and Stephenson (1939) on the compatibility of Q and R approaches. Whilst Burt considered that both methodologies involved "much the same aims, methods, and theorems, and, in principle, though not always in fact, as merely alternative ways of analyzing any rectangular table of figures" (Burt & Stephenson, 1939, p. 274), Stephenson maintained that the methodologies were completely opposed to each other. This – at times confusing – debate also engaged figures such as Catell, Cronbach, Eysenck and Block. By the end of the discussion we were left with what is known in the methodological research textbooks, old and new, as the capriciously labelled Q factor analysis, the approach proposed by Stephenson, while traditional factor analysis was rebranded R analysis (Block, 2008).

This methodological issue was addressed time and again by Block (1961, 2008). He considered that scores obtained ipsatively could and should be used as normative

scores in the assessment of personality. His perspective was that: “The kinds of discriminations afforded by normative data and by ipsative data treated normatively appear to be fully equivalent and functionally interchangeable, at least in the one direction when ipsative scores are used as normative scores” (2008, p.77). Nevertheless, he cautioned against the common mistake of reading R factor studies with Q methodology in mind. The transposition of data should always be considered when assessing conventional R-oriented studies, i.e. in viewing the R-person sample as a set of Q descriptors (Block, 2008, p.88).

To sum up, historically the person-centred approach has been mostly connected with the study of discrete types of personality, but it is certainly not limited to it. This leads to a methodological transposition where Q factors can be expressed categorically and dimensionally (Asendorpf, 2015). The preliminary validation of the MQS was carried out using dimensional scores that were calculated after correlating each participant’s MQS Q-sort rating with each of the three derived mentalisation profiles. The correlations found here indicate how each patient’s MQS profile matches the empirically derived Q factors; therefore they can be used in normative analyses with external variables, allowing us to test the reliability and validity (Block, 1961) of the proposed MQS measure and determine its convergent and discriminant validity.

5.4.2 From Q factor Loadings to Dimensional Scores.

This validation study was conducted using dimensional scores generated by correlating each participant’s MQS Q-sort rating with the three derived mentalising factors (Reflective, Easily Overwhelmed Non-Mentalising and Disconnected). The *z* scores, the value of the observations expressed in standard deviation units (Field, 2015), were also calculated following the recommendation by Block (2008). These correlations represent the match between each participant’s MQS profile and the empirically derived Q factors and can thereafter be used in analyses with external normative criterion variables to test the measure’s reliability and validity (Block, 1961, 2008, Asendorpf, 2015). A participant’s correlation coefficients were calculated to assess bivariate association between the MQS profile scores and the sets of external criterion variables described above in 5.1.2.1. A correlation was considered significant at the 0.01 and 0.05 level. The analysis was conducted with SPSS and the results are shown in table 5.1.

Table 5. 1 Correlations of each participant's MQS rating with each of the three derived mentalising factors, and their corresponding *z scores.*

Patient ID	**Correlation values with F1**	**Correlation values with F2**	**Correlation values with F3**	***Z scores* F1**	***Z scores* F1with F2**	***Z scores* F1with F3**
PT103	0.117	0.657	0.261	-1.64	-1.22	-1.29
PT104	0.17	0.488	0.56	-1.60	-1.35	-1.58
PT106	0.82	0.363	0.196	-1.09	-1.45	-1.66
PT110	0.711	0.055	0.092	-1.18	-1.69	-1.65
PT114	0.628	0.459	0.107	-1.24	-1.37	-1.68
PT117	0.73	0.326	0.067	-1.16	-1.48	-1.43
PT126	0.515	0.158	0.393	-1.33	-1.61	-1.39
PT127	-0.098	0.835	0.439	-1.81	-1.08	-1.28
PT129	-0.235	0.303	0.573	-1.92	-1.50	-1.67
PT131	0.873	-0.125	0.08	-1.05	-1.83	-1.41
PT134	0.557	0.382	0.417	-1.30	-1.43	-1.35
PT140	0.141	0.487	0.487	-1.62	-1.35	-1.57
PT147	0.801	0.358	0.208	-1.11	-1.45	-1.67
PT150	0.567	0.208	0.08	-1.29	-1.57	-1.55
PT154	0.541	0.488	0.233	-1.31	-1.35	-1.52
PT159	0.393	0.414	0.278	-1.43	-1.41	-1.07
PT164	-0.12	0.326	0.843	-1.83	-1.48	-1.75
PT169	0.761	0.13	-0.016	-1.14	-1.63	-1.30
PT171	0.203	0.501	0.548	-1.57	-1.34	-1.53
PT175	0.559	0.333	0.26	-1.29	-1.47	-1.67
PT178	0.892	0.017	0.081	-1.03	-1.72	-1.73
PT183	0.896	0.001	-0.001	-1.03	-1.73	-1.79
PT185	0.717	-0.03	-0.067	-1.17	-1.76	-1.42
PT194	-0.153	0.760	0.404	-1.85	-1.14	-1.81
PT198	0.877	-0.048	-0.102	-1.05	-1.77	-1.46
PT210	0.032	0.562	0.344	-1.71	-1.29	-1.77
PT217	0.911	-0.132	-0.047	-1.02	-1.84	-1.57
PT223	0.612	0.222	0.213	-1.25	-1.56	-1.10
PT236	0.067	0.339	0.813	-1.68	-1.47	-1.54

PT237	0.001	0.714	0.248	-1.73	-1.17	-1.41
PT251	0.268	0.338	0.413	-1.52	-1.47	-1.67
PT255	0.517	0.25	0.084	-1.33	-1.54	-1.29
PT265	0.194	0.263	0.564	-1.58	-1.53	-1.82
PT272	0.813	-0.24	-0.115	-1.10	-1.92	-1.54
PT274	0.713	0.334	0.246	-1.17	-1.47	-1.49
PT279	-0.262	0.823	0.315	-1.94	-1.09	-1.63
PT282	0.609	0.327	0.132	-1.26	-1.48	-1.66
PT296	0.519	0.427	0.099	-1.33	-1.40	-1.53
PT299	0.247	0.538	0.26	-1.54	-1.31	-1.69
PT301	0.682	0.329	0.053	-1.20	-1.48	-1.71
PT302	0.573	0.284	0.026	-1.28	-1.51	-1.72
PT305	0.828	-0.127	0.021	-1.08	-1.83	-1.65
PT314	0.818	0.218	0.106	-1.09	-1.56	-1.69
PT315	0.449	0.388	0.053	-1.38	-1.43	-1.57
PT319	0.671	0.136	0.202	-1.21	-1.63	-1.32
PT321	0.241	0.245	0.524	-1.54	-1.54	-1.59
PT324	0.637	0.217	0.187	-1.23	-1.56	-1.74
PT325	0.909	-0.064	-0.009	-1.02	-1.78	-1.57
PT329	0.423	-0.108	0.210	-1.40	-1.82	-1.67
PT345	0.68	0.242	0.075	-1.20	-1.54	-1.80
PT350	0.682	-0.044	-0.08	-1.20	-1.77	-1.81
PT351	0.822	0.057	-0.096	-1.09	-1.69	-1.42
PT352	0.487	-0.135	0.394	-1.35	-1.84	-1.60
PT354	0.771	0.124	0.165	-1.13	-1.64	-1.73
PT370	0.861	0.009	0.009	-1.06	-1.73	-1.61
PT380	0.696	0.249	0.158	-1.19	-1.54	-1.58
PT384	0.572	0.272	0.198	-1.28	-1.52	-1.66
PT389	0.598	0.454	0.097	-1.26	-1.38	-1.68
PT406	0.462	0.363	0.072	-1.37	-1.45	-1.60
PT500	0.438	0.565	0.169	-1.39	-1.29	-1.62
PT600	0.789	0.151	0.141	-1.11	-1.61	-1.73

5.5 Results

The results of the correlational analysis are presented in tables 5.2 – 5.7.

Regarding depressive symptomatology, the Reflective group tended to show a negative association throughout the assessment points, in terms of both HRSD and BDI scores. This means that the Reflective patient showed lower depression scores in comparison to the other MQS groups, as we hypothesised. This finding is congruent with the basic assumption about depression from a mentalisation perspective, e.g. that failures in the capacity to mentalise reflect responses to threats to attachment relations and thus threats to the self (Lemma, Target and Fonagy, 2011; Luyten et al, 2012). As this group of patients showed a better capacity to mentalise, as compared to the other two groups, it is not a surprise that their scores of depressive symptomatology are lower. Within that tendency, the scores produced were significant at three assessment points (at 6 and 12 months, and at the 2-year follow-up) for HRSD, and at two assessment points (at 6 months and at the 2-year follow-up) for the BDI. Although not significant, the only positive correlation (a slight increase in the depressive score) with the BDI occurred at 18 months, after the treatment had ended. The Easily Overwhelmed and Disconnected patients, on the other hand, correlated positively at all assessment points with both measures. The Easily Overwhelmed patient showed just one significant positive correlation, at 12 months into treatment with the HRSD, but correlated positively at two assessment points (at baseline and in the 6-month follow-up) with the BDI. There was a significant correlation with the overall BDI score. The Disconnected patient, although showing a tendency to correlate positively with both measures, had just one significant correlation, with the BDI at 2-year follow-up (tables 5.2 and 5.3).

Table 5. 2 Correlations between the three MQS groups and the HRSD-17

	The Reflective Patient T1	The Easily Overwhelmed Non-Mentalising Patient T1	The Disconnected Patient T1
Baseline Total HRSD-17	-.203	.163	.240
6-months Total HRSD-17	-.343*	.199	.292
12-months Total HRSD-17	-.338*	.427**	.151
18-months Total HRSD-17	-.167	.162	.089
6-months Follow-up HRSD-17	-.167	.192	.180
12-months Follow-up HRSD-17	-.281	.258	.196
24-months Follow-up HRSD-17	-.314*	.210	.194

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Table 5. 3 Correlations between the three MQS groups and the BDI.

	The Reflective Patient T1	The Easily Overwhelmed Non-Mentalising Patient T1	The Disconnected Patient T1
Baseline BDI Total Score	-.181	.324*	.153
6-months BDI Total Score	-.335*	.327	.263
12-months BDI Total Score	-.317	.278	.204
18-months BDI Total Score	.057	.134	.093
6-months Follow-up BDI Total Score	-.173	.376*	.127
12-months Follow-up BDI Total Score	-.157	.253	.278
24-months Follow-up BDI Total Score	-.363*	.313	.334*
BDI Total Score	-.142	.301*	.138

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

In relation to the indices of functioning, there were no significant correlations with any of the MQS groups, except for the employment status at baseline; according to this, unemployment correlates in a significant way with the Disconnected patient, suggesting that participants that were unemployed at the beginning of the study would be part of this cluster. It was interesting not to find any other correlation with other indices of functioning, particularly those relating to social and interpersonal issues, as the mentalising capacity for this group was characterised by an important inhibition of reflective capacities, evidenced during the sessions by a rather shallow narrative where little was transmitted about mental states. Instead, they seem to be overreactive to the perceived intentions of others.

The GAF, on the other hand, did show some significant correlations. As a general observation, the Reflective patient group correlated positively at all assessment points with the GAF, suggesting that these patients have better overall functioning compared to the other two groups of patients. Three assessment points, in particular, showed a significant correlation: at baseline, one-year follow-up and two-year follow-up. Conversely, the Easily Overwhelmed and Disconnected patients showed a general negative tendency in GAF score correlations, suggesting that these two groups were more impaired in their everyday functioning. However, the Easily Overwhelmed patient had just one significant correlation, at the 6-month assessment point. In the case of the Disconnected patient group, the only significant correlation happened at baseline (See tables 5.4 and 5.5).

Table 5. 4 Correlations between the three MQS groups and the assessed Indices of Functioning.

	The Reflective Patient T1	The Easily Overwhelmed Non-Mentalising Patient T1	The Disconnected Patient T1
Relationship Status	.107	.027	-.179
Lives alone	-.008	.064	.046
Social support	-.045	.046	-.078
Employment Status at Baseline	.170	-.142	-.351**
Educational Background	-.024	.191	-.101
Total Ave Sum for 17-item	-.186	.149	.233

Well-being Total Score	-.107	.161	.163
Social Functioning Total Score	.062	-.064	.002
Problem and Symptoms Clinical Score	.055	-.022	.019
Risk Total Score	-.176	.151	.205
Minus Risk Total Score	.038	-.011	.037
Global Distress Clinical score	-.003	.021	.074
Satisfaction with Physical Health Total Score	-.166	.024	.122
Satisfaction with Subjective Feelings of Well-being Total Score	-.097	.038	.028
Satisfaction with Leisure Time Total Score	.180	-.115	-.098
Satisfaction with Social Relations Total Score	.133	.034	-.216
Satisfaction with General Activities Total Score	-.117	-.001	.119
Previous suicide attempt	-.135	.136	.070
Number of previous suicide attempts	-.161	.157	.023
Self-harm	-.165	.246	.142
Significant loss	-.040	-.006	-.035
Traumatic experience	-.167	.106	.191

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Table 5. 5 Correlations between the three MQS groups and GAF.

	The Reflective Patient T1	The Easily Overwhelmed Non-Mentalising Patient T1	The Disconnected Patient T1
Baseline GAF Total	.311*	-.164	-.274*
GAF first rating Score	.284*	-.142	-.283*
18-months GAF Total	.112	-.116	-.155
6-months Follow-up GAF Total	.235	-.330*	-.291
12-months Follow-up GAF Total	.313*	-.289	-.296
24-months Follow-up GAF Total	.310*	-.267	-.158

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Correlations with octants of the PROQ-2a varied across the three MQS groups. Only two constructs yielded a significant relationship: The Reflective patient showed a meaningful positive correlation with the Upper Close Negative octant, while the Disconnected patient had a negative meaningful relationship with the Lower Distant Negative octant. The Reflective patient had a negative non-significant correlation with the Upper Close Negative, Lower Neutral Negative, Neutral Distant Negative, Upper Distant Negative, Neutral Close Positive and Neutral Distant Positive octants. The other non-significant correlations were positive.

The Easily Overwhelmed Non-Mentalising patient did not correlate significantly with any of the octants from the PROQ-2a. There were negative non-meaningful correlations with the Neutral Close Negative, Lower Distant Negative, Lower Close Positive, Lower Neutral Positive, Lower Distant Positive and Upper Distant Positive octants. The correlations with the other octants were positive and non-significant.

The Disconnected patient, besides the aforementioned meaningful negative correlation with the Lower Distant Negative octant, also displayed non-significant positive correlations with the Lower Neutral Negative, Neutral Distant Negative, Upper Distant Negative, Upper Neutral Positive, Lower Neutral Positive, Neutral Distant Positive octants. The correlations of this group with the other octants were negative and non-significant (Table 5.6).

Table 5. 6 Correlations between the three MQS groups and the PROQ-2a.

	The Reflective Patient T1	The Easily Overwhelmed Non-Mentalising Patient T1	The Disconnected Patient T1
Upper Neutral Negative	.099	.031	-.122
Upper Close Negative	.317*	.024	-.210
Neutral Close Negative	.138	-.027	-.013
Lower Close Negative	.041	.093	-.132
Lower Neutral Negative	-.215	.198	.083
Lower Distant Negative	.209	-.156	-.295*
Neutral Distant Negative	-.104	.068	.207
Upper Distant Negative	-.153	.164	.151
PROQ2a Negative Total score	.093	.086	-.091
Upper Neutral Positive	.011	.025	.067
Upper Close Positive	.184	.107	-.118
Neutral Close Positive	-.035	.150	-.066
Lower Close Positive	.088	-.055	-.006
Lower Neutral Positive	.030	-.117	.030
Lower Distant Positive	.177	-.160	-.169

Neutral Distant Positive	-.026	.181	.064
Upper Distant Positive	.061	-.021	-.063
PROQ2a Positive Total score	.131	.020	-.070

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Finally, the three MQS groups correlated with a few of the SWAP personality profiles. The Reflective patient showed no significant correlation with any of the DSM-IV personality disorder types; however, they tended to correlate negatively in all but one case (the Dependent category). In relation to the SWAP personality disorders, there were two significant negative correlations – with the paranoid and dysregulated sub-types – implying that Reflective patients show less paranoid and dysregulated characteristics. Although non-significant, further negative correlations were found with dysphoric, antisocial, avoidant, high-functioning depressive and hostile SWAP types. Conversely, there was a positive non-significant correlation with the schizoid, obsessive, histrionic, narcissistic, dependent and high functioning types. In terms of variable-centred or trait dimensions, the Reflective patient correlated negatively with the emotional dysregulation type, meaning that this group of patients have good emotion regulation skills. Finally, traits of psychopathy, hostility, dysphoria, schizoid orientation, obsessionality and sexual conflict, although non-significant, showed a negative trend in the Reflective patient.

The Easily Overwhelmed Non-Mentalising patient group showed just one significant correlation, with the SWAP dysregulated personality syndrome. In relation to the DSM types, there was a positive non-significant correlation with paranoid, schizoid, schizotypal, antisocial, narcissistic, avoidant, obsessive compulsive, depressive and passive-aggressive profiles, and a negative correlation with borderline, histrionic and dependent profiles. Regarding the other SWAP types, there was a positive non-significant correlation with dysphoric, antisocial, schizoid, paranoid and avoidant profiles, and a negative non-significant correlation with obsessive, histrionic, narcissistic, high-functioning depressive, dependent, hostile and high functioning profiles. Lastly, there were negative non-significant correlations with the psychopathy, narcissism, thought disorder, oedipal conflict and sexual conflict categories.

For the Disconnected patient, there were a few significant correlations. With regards to the DSM personality disorders, this MQS group had a significant correlation with borderline personality disorder, suggesting that the more disconnected a person becomes, the more they will exhibit borderline characteristics, as assessed in the DSM. Other positive, but non-significant, correlations were found in relation to paranoid, schizoid, antisocial, depressive and passive-aggressive personality disorders, while negative non-significant correlations were found with the schizotypal, histrionic, narcissistic, avoidant and dependent DSM types. There was no correlation with the OCD score. There were significant correlations with two SWAP personality syndromes, the paranoid and dysregulated sub-types, both of them positive. These correlations suggest that the more dysregulated and paranoid a patient is, the more disconnected they will become in mentalising terms. Other non-significant positive correlations were observed with the dysphoric and antisocial personality syndromes. There was one significant correlation with the trait dimensions: the more disconnected a patient is, the more hostile they are likely to be.

Table 5. 7 Correlations between the three MQS groups and the SWAP.

	The Reflective Patient T1	The Easily Overwhelmed Non-Mentalising Patient T1	The Disconnected Patient T1
DSM Paranoid T score	-.188	.118	.250
DSM Schizoid T score	-.075	.094	.024
DSM Schizotypal T score	-.093	.104	-.006
DSM Antisocial T score	-.090	.076	.089
DSM Borderline T score	-.203	-.005	.269*
DSM Histrionic T score	.031	-.057	-.089
DSM Narcissistic T score	-.001	.028	-.008
DSM Avoidant T score	-.114	.060	.142

DSM Dependent T score	.033	-.055	-.006
DSM OCD T score	-.004	.106	.000
DSM Depressive T score	-.146	.082	.201
DSM Passive Aggressive T score	-.070	.109	.137
SWAP Dysphoric T score	-.224	.163	.138
SWAP Antisocial T score	-.080	.083	.055
SWAP Schizoid T score	.004	.071	-.058
SWAP Paranoid T score	-.276*	.120	.335**
SWAP Obsessive T score	.176	-.064	-.178
SWAP Histrionic T score	.080	-.101	-.102
SWAP Narcissistic T score	.064	-.035	-.080
SWAP Avoidant T score	-.061	.075	-.011
SWAP High Functioning Depressive T score	-.016	-.010	-.005
SWAP Dysregulated T score	-.422**	.267*	.342**
SWAP Dependent T score	.058	-.078	-.059
SWAP Hostile T score	-.166	.183	.184

SWAP High Functioning T score	.145	-.087	-.164
Psychopathy Variable-centred	-.008	-.042	-.041
Hostility Variable-centred	-.151	.030	.297*
Narcissism Variable-centred	.111	-.063	-.205
Emotional Dysregulation Variable Centred	-.265*	.094	.162
Dysphoria Variable Centred	-.198	.023	.201
Schizoid Orientation Variable Centred	-.072	.182	.016
Obsessionality Variable Centred	-.051	.128	-.065
Thought Disorder Variable Centred	.006	-.013	-.053
Oedipal Conflict Variable Centred	.133	-.143	-.030
Dissociation Variable Centred	.044	.107	-.128
Sexual Conflict Variable Centred	-.161	-.141	.227

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

5.6 Discussion

The aim of the present study was to empirically test whether the three-factor structure identified at T1 can be reliably differentiated. For that purpose, we set out to investigate the convergent and discriminant validity of the observer-rated MQS by calculating the bivariate correlations between the natural occurring clusters identified in the LTPP

stream of the TADS study and the different measures – both observer and self-rated – used in that study.

Our hypothesis about the Reflective patient group having a correlation with lower scores in the two depression measures as compared with the Emotionally Overwhelmed and Disconnected patient, also considered other possible correlations with the various functioning indices, i.e. GAF, PROQ-2a or SWAP. The results of these analyses and our initial hypotheses are discussed in the following sections, focusing on one MQS group at the time.

5.6.1 Meaningful correlations with the Reflective patient group.

Table 5.8 presents a summary of the meaningful correlations of the Reflective patient group with the different assessment measures used in the TADS study.

The Reflective patient group was characterised by a fluent and spontaneous discourse. They would open up easily about their mental states and would keep a controlled mentalising stance, both in the present moment of therapy and when referring to events in their past. They tended to take some time to think things through and see different perspectives of the situation being discussed, and to engage in constructive argument instead of taking a less flexible position. The fact that they focused mostly on mental states and did not consider the behavioural cues offered by others as definitive of the meaning of their behaviour may have allowed them to maintain better interpersonal relations.

In their 2011 study, Taubner and colleagues found that Reflective Function, as measured in the Adult Attachment Interview, was not related to severity of depressive symptoms, as assessed by the BDI. As an overall observation, in the present study, the Reflective patient group tended to have a negative correlation with both the BDI and the HRSD, suggesting a link between good-enough mentalising capacity and lower scores for these two assessment measures, relative to the other groups, at different points of assessment. This was expected from our initial hypothesis and we link this finding to the capacity of these patients to maintain a degree of mentalisation despite their depressed mood (Luyten et al., 2012). Although we cannot say that we failed to replicate Taubner and colleagues' finding, as we did not use the same measures, we did see a tendency of patients with a good mentalising capacity to score lower for depression severity. It is important to note that Taubner et al. based their

observations on a sample of 20 patients, whereas we tripled that number (with 30 patients in the Reflective group alone). The variation in our data might therefore be the result of a difference in the sample size.

Another factor that may have impacted these results was the differing duration of treatment in the two studies: TADS offered 18 months of psychoanalytic psychotherapy, while Taubner's study offered only 8. From a psychodynamic perspective, it is suggested that the length of treatment for depression is consequential for two main reasons (Holmes, 2013). Firstly, the psychoanalytic approach can help to "change and modify implicit memory systems that are likely to be awry in individuals who have experienced trauma or neglect in early childhood" (p. 82). This is also a task of mentalisation-based interventions, albeit defined using different terms, such as epistemic trust (Fonagy & Allison, 2014; Fonagy, Luyten & Allison, 2015), affect modulation and mentalised affectivity (Jurist, 2005, 2010, 2018).

The patients in the Reflective group might have formed a safe and trusting relationship with their therapists, allowing them to learn about themselves through the therapeutic relationship and to gain a better understanding of their symptomatology by exerting a more controlled and cognitive-oriented capacity in mentalising. However, we cannot tell if mentalising is the cause of any improvement in their symptomatology, or the other way around (this topic will be addressed amply in the following chapter).

The second reason why Holmes considers treatment duration to be a factor in clinical outcomes concerns the link between childhood adversity and other impacts of the patient's environment on their depression. This requires a "relational and prolonged level" of therapy "if permanent change in the HPA axis reactivity is to be achieved" (p. 78). The hypothalamic–pituitary–adrenal system (HPA) is the biological system responsible for regulating stress (Brent et al, 2014). Given the assumed reciprocal relationship between attachment and mentalising (Fonagy & Bateman, 2006; Jurist & Meehan, 2009), it might be that the secure attachment relationship formed in the therapeutic setting promotes the development of mentalising skills, and that the patient's use of these skills affects positively the way they relate to the therapist, creating a benign cycle that repeats itself (Fonagy et al., 2017 a & 2017b), which in turn enables depressed patients to cope better with the stress of everyday life when confronted with adversity, decreasing the probability of relapse (Luyten et al., 2012). This would also account for the increase, albeit non-significant, in scores for depression when the treatment concluded, given that a caring, secure relationship was

coming to an end. This supposition could have been substantiated or disproved had a therapeutic alliance measure been included in the TADS study.

The Upper Close Negative octant from PROQ-2a tells us something about a patient's troubled approach to relating, which could be characterised as intrusive, restrictive or possessive. This strategy permits the individual to maintain a particular state of relatedness but at the same time express a fear of losing their relationship with others. Although we mentioned earlier that the Reflective group shows better mentalising abilities, we must remind ourselves that depressive symptomatology reflects, from a mentalising perspective, responses to threats to attachment relations and to the self (Lemma, Target, & Fonagy, 2011; Luyten, Fonagy, Lemma, Target, 2012). The experience of either or both of these threats is enough to trigger a response characteristic of this octant, which showed a meaningful correlation only with this group and, according to Birtchnell & Shine (2000), is not linked to any personality disorder from the DSM IV. Further research would enable us to make better sense of this correlation.

In relation to attributes measured by the GAF, the Reflective group correlated positively with healthier psychological, social and occupational functioning in comparison with the other groups, as was expected. At baseline, and at the one-year and two-year follow-up, the Reflective patient was also better able to function in their everyday activities. Being reflective requires a special level of controlled attention, awareness and effort (Fonagy & Luyten, 2009); these characteristics can benefit general functioning not just in relation to depressive symptoms but also in finding joy in social interactions, despite a slight impairment in social or occupational functioning (Hilsenroth et al, 2000). It is worth reminding ourselves that the ability to regulate distress in relation to others is another characteristic of the Reflective individual (Luyten et al, 2012).

Finally, in relation to the SWAP, the three negative correlations we found are linked to each other. The paranoid personality outlined in SWAP (Shedler, 2009) is characterised by prolonged resentfulness and the holding of grudges. These individuals also tend to see others as wanting to harm them, which makes them feel victimised and mistreated. The emotional dysregulation (variable-centred) and Emotionally Dysregulated Personality (person-centred) sub-types, although obtained by different analyses, are related in their description, as they also refer to difficulty in affect modulation and regulation, unpredictability and an inability of individuals to soothe themselves. From the Q factor descriptions, we observe that a Reflective

patient is far removed from these characteristics. This is confirmed by the negative correlations, which suggest that the absence of these and other characteristics can be added to the description of a Reflective patient. As the reflective stance is defined by a genuine interest in the motives and mental states of the self and others, together with an openness to exploring experiences and memories, such correlations make theoretical sense in distancing the Reflective patient from personality pathology.

Table 5. 8 Significant correlations between the Reflective Patient group and the TADS measures.

	The Reflective Patient
6 months Total HRSD-17	-.343*
12 months Total HRSD-17	-.338*
24 months Total HRSD-17	-.314*
6-Months BDI Total Score	-.335*
24-Months follow-up BDI Total score	-.363*
PROQ-2a Upper Close Negative	.317*
Baseline GAF Total	.311*
GAF First rating score	.284*
12-months Follow-up GAF Total	.313*
24-months Follow-up GAF Total	.310*
SWAP Paranoid T score	-.276*
SWAP Dysregulated T Score	-.422**
SWAP Emotional Dysregulation variable-centred	-.265*

** Correlations significant at the 0.01 level, *Correlations significant at the 0.05 level.

5.6.2 Meaningful correlations with the Easily Overwhelmed Non-Mentalising patient group.

Table 5.9 presents a summary of the meaningful correlations of the Easily Overwhelmed Non-Mentalising patient group with the different assessment measures used in the TADS study. This MQS group showed the fewest correlations with other variables, with no correlations at all with indices of functioning. There were seven correlations in total, which we will present here following the same structure used for the Reflective patient group.

Characterised by the readiness with which they lose their reflective capacity, this patient group seems to be constantly aroused affectively and, as a consequence, their mentalising is often undermined to the extent that some of the work of therapy cannot be done, as Bateman and Fonagy (2016) suggest. The combination of this arousal and an intolerance to alternative perspectives on lived experiences may obscure the meaning of interventions if the therapist does not first try to reduce the stress and arousal that the patient is displaying in the session (*Ibid*).

Although this group of patients had only positive correlations with both the HRSD and the BDI at all assessment points, the one meaningful correlation with the HRSD occurred at 12 months into treatment. In the case of the BDI, there was a significant correlation with the total score at baseline, at the 6-month follow up and in the overall total. As a group these patients correlated the most with depressive symptomatology, as we predicted might be the case. It is important to remember that, as has been suggested, depression is also characterised by the suppression of reappraisal and negative affect (Luyten et al, 2012), which can give rise to a predominance of implicit/automatic and affective mentalising. That an affective response is so easily elicited might explain the non-mentalising responses and assumptions toward others and themselves, as reflected in the correlations with the GAF scores. This relationship is not too surprising, given that psychological, social and occupational functioning will be impaired in cases where individuals struggle to form meaningful relationships (socially and with family members) and tend to experience the reactions of others as a cause of stress.

In contrast to the Reflective patient, and as expected from our hypothesis, this MQS group exhibited more characteristics of the emotional dysregulation profile measured by the SWAP. This profile is characterised by a deficiency in the capacity to regulate

and modulate affective states, which causes people to lose control easily and overwhelms their rational thought (Shedler, 2009). This description matches very well the mentalising style of the MQS group. It is also in tune with research suggesting that emotional dysregulation (mostly concerning anger and anxiety) underpins many forms of depression (van Praag, 1998; Gilbert, 2006).

More precisely, it may not be that this group of patients lacks the ability to mentalise, but that this ability is seriously inhibited by the heightened activation of the attachment system (Luyten & Fonagy, 2015; Jurist & Meehan, 2009). In relation to other studies of mentalising and depression, this group seems to match the sample in Fischer-Kern et al. (2013) in that their mentalising difficulties relate not only to issues of depression (as the correlation with the HRSD and BDI suggests), but also to a severe impairment in the interpretation of mental states of the self and others. This position also aligns with the findings of the study by Ekeblad, Falkenström & Holmqvist (2016), where low mentalisation (as measured by the RF scale) predicted worse outcomes.

Table 5. 9 Significant correlations between the Easily Overwhelmed Non-Mentalising Patient group and the TADS measures

	The Easily Overwhelmed Non-Mentalising Patient
12-Months Total HRSD-17	.427**
Baseline BDI total score	.324*
6-Months follow-up BDI Total Score	.376*
BDI Total score	.302*
6-months Follow-up GAF Total	-.330*
SWAP Dysregulated T score	.267*

** Correlations significant at the 0.01 level, *Correlations significant at the 0.05 level.

5.6.3 Meaningful correlations with the Disconnected patient group.

Table 5.10 presents a summary of the meaningful correlations of the Disconnected patient group with the different assessment measures used in the TADS study.

The patients in this group are characterised by a severe inhibition in mentalising capacity, to the point that they prefer to talk about others and make automatic and behavioural assumptions about them, instead of looking into aspects of the self and the impact these have on their mental states and interpersonal lives. Such patients may talk freely during a session, but the information they provide about their mental states is minimal. In general, they live their lives with a conviction that what they are doing is obvious and natural, and that others just do not get them.

As with the Overwhelmed patient, this MQS group showed a non-significant positive correlation with both measures of depression at all times of assessment. The only meaningful correlation appeared at the 2-year follow-up, making this the only group in the study to record significantly higher levels of depressed symptomatology at the final assessment point. Given that we were not expecting higher scores in depressive symptomatology for this group, due to the inability of patients to understand mental states in general, this increase two years after the end the treatment was a surprise. We view this as a possible topic of further research, as the LTPP intervention seemed to have no lasting effect on symptomatology in this group of patients. In any case, their disconnectedness may make these patients notably difficult to treat.

The Disconnected patient group also correlated negatively with the GAF at baseline and in the total score. This suggests that their mentalising rigidity goes hand in hand with the social and psychological aspects of their life, making everyday interactions difficult, to the extent that aspects of social functioning may be impaired. This observation is further substantiated by the correlation found between this group and employment status at baseline, the only index of functioning that correlated with any of the three groups. The finding also echoes the classic study by Brown and Harris (1978), which suggested that vulnerability to loss depends on factors such as not having a job or a loving relationship (quoted in Holmes, 2013), although in this case we do not know which is the cause and which is the consequence.

The Disconnected patient also had a single correlation with the PROQ-2a in the Lower Distant Negative octant, which is characterised by insecurity, withdrawn behaviour and a fear that others might take advantage of them. These patients withdraw from the world in order to avoid looking for other people they may actually need (Birtchnell, 1996), a characteristic that is also found in people who use attachment deactivating strategies when they feel threatened, a sort of defensive manoeuvre that inhibits mentalising (Luyten et al., 2012). Humphrey (1988) suggests, from an evolutionary standpoint, that the ability to predict one's own and others' responses, and to use that

information in the interpersonal field, has substantial survival value (quoted in Luyten et al., 2012).

Finally, the correlations with the different constructs of the SWAP support much of what has been said so far. This group had a meaningful correlation with three of the SWAP profiles (borderline, paranoid and dysregulated) and one of its trait dimensions (hostility). Patients tend to experience intense and volatile affective states, including deep states of despair and desperation. This constant struggle with emotionality is itself the source of extreme anxiety, sadness or rage. The hostility these patients express is considered a sub-type of depressive or dysphoric personality, marked by the externalisation of blame onto other people or social situations (Shedler, 2009). This can also be seen in the items (described in chapter 4) that ranked highly for this group, which confirm a state of affective instability (Bateman and Fonagy, 2016).

The high comorbidity of depression and personality disorders (mostly borderline personality disorder) has been researched extensively (Levenson, et al., 2012, Stringer et al., 2013; Bateman and Fonagy, 2016). A general disconnection of mental states, combined with such personality characteristics, is not a good prognostic. As Abbass, Town, & Driessen (2011, p. 58) note: “among factors undermining depression treatment, the presence of personality disorder (PD) stands out, potentially doubling the rate of poor outcomes”. This substantiates the already discussed findings of Fischer-Kern, et al. (2013) and Ekeblad, Falkenström, & Holmqvist (2016).

Table 5. 10 Significant correlations between the Disconnected Patient group and the TADS measures

	The Disconnected Patient
24-Months follow-up BDI Total Score	.334*
Baseline GAF Total	-.274*
GAF first rating score	-.283*
Employment Status at Baseline	-.351**
PROQ-2a Lower Distant Negative	-.295*

SWAP DSM Borderline T score	.269*
SWAP Paranoid T Score	.335**
SWAP Dysregulated T Score	.342**
SWAP Hostility variable-centred	.297*

** Correlations significant at the 0.01 level, *Correlations significant at the 0.05 level.

5.7 Limitations

There are limitations with any analysis of correlational data, the main one being the inability of such studies to establish cause and effect in the variables considered. However, in trying to establish the convergent and discriminant validity of the constructs (MQS factors) developed in this study, it is of paramount importance to try to find relationships with other constructs of theoretical and empirical relevance.

The MQS sample was drawn from a group of psychotherapeutic patients at the beginning of the treatment process, not at baseline. We mention this as it is possible that the mentalising factors observed in this study, both positive and negative, were strongly affected by the therapeutic relationship, including the mentalising ability of the therapist. We consider that the use of additional tools to evaluate the therapeutic relationship would be very valuable in this respect.

Another limitation of this study is the small sample size for factors 2 and 3, making generalisations of the results more difficult to ascertain. We are aware that our results are limited to the characteristics shown by the depressed patients from the TADS study. Certainly, more research is needed in order to make stronger statements relating to other types of measure, as well as to other clinical and healthy populations (including the replication of this study with a similar sample). Only then could we determine if the preliminary results contained in this research hold firm or should be viewed in a more restricted way.

5.8 Concluding Remarks

This chapter presents the results of a preliminary validation study regarding the newly developed MQS. The construct validity of this instrument was assessed by comparing the three different factors obtained in the Q analysis at T1, and their relation with other measures used in the TADS study. Our principal aim in the present study was to empirically test whether the three identified mentalisation profiles of depressed patients could be reliably differentiated. With this in mind, we examined how the MQS correlated with some of the measures used and their outcomes in the LTPP sample of TADS. To this end, we examined the convergent and discriminant validity of the MQS, comparing it with other validated instruments. Convergent and discriminant validity (Cohen and Swerdlik, 2009) can be defined as a conjunction of measures designed to assess the degree of accordance with similar conceptual constructs, and divergence from those which should not, at least theoretically, be related.

We found the three factors identified at T1 in the previous chapter are reliable and differentiated from one another in how they interacted with other constructs. They provided meaningful discriminant and convergent validity for the newly developed MQS, including, as hypothesised, a negative correlation between the Reflective group and scores of depressive symptomatology as measured by the HRSD and the BDI. The other two groups were found to have higher scores, and the Disconnected group increased their score at two-year follow up.

None of the groups correlated meaningfully with the indices of functioning examined, except for a link between the Disconnected patient group and unemployment. We consider it particularly important to note that the presence or absence of social support or satisfying relationships did not appear to correlate with the three MQS factors. Finally, the Reflective patient group showed no correlation at all with the constructs of the SWAPP-II, while the other two groups had some significant correlation with it, supporting the extant evidence that less emotional regulation or connection with mental states is a characteristic of personality disorders and personality disorder traits.

As the meaningful correlations of the MQS with depression were so apparent, the next issue to address is how this relationship plays out in the course of a patient's illness. Do the MQS groupings determine the trajectory of depression? We will try to answer this question in the next and final research chapter

Chapter 6: Initial Validity of the MQS – Part 2: The MQS Clusters and Treatment Response

Chapter Overview

This final study aims to establish an additional aspect of preliminary validity of the MQS by testing whether the three naturally occurring clusters of depressed patients (the Reflective Patient, the Easily Overwhelmed Non-Mentalising Patient and the Disconnected Patient) show differential treatment effects in response to once-weekly long-term psychoanalytic psychotherapy (LTPP) lasting for about 18 months.

Our focus is on the change in depression severity of these patients as measured by the HRSD-17 scale (described in detail in the previous chapter). A multi-level modelling (MLM) approach was adopted to capture between-individual and within-individual differences in growth curves over the treatment period and the 2-year follow-up.

6.1 Aims of the Current Study and Hypotheses

The aim of the current study is to test whether the three derived mentalisation profiles (MQS groups) respond differentially to LTPP in terms of changes in depression symptomatology. In line with theoretical assumptions outlined in the previous chapters, we hypothesised that the Reflective group would show greater benefits from treatment compared with the Easily Overwhelmed Non-Mentalising group and the Disconnected patient group at the end of the two-year follow-up.

Treatment outcome was defined in terms of scores on the HRSD, the primary outcome measure for the TADS. This is an observer-rated measure with excellent inter-rater reliability (ICC of 0.89) (Fonagy, Rost., et al., 2015)

6.2 Methods

6.2.1 Participants.

The study was carried out using data from participants randomised into the LTPP group (*N*= 60) of the TADS. One participant, on whom data was missing at several assessment points, was removed from the analysis.

6.2.2 Measure.

The Hamilton Rating Scale of Depression (HRSD-17, Hamilton, 1967), described in the previous chapter, was used to assess changes in depression severity over time. Depression severity was assessed as follows: 0 – 7 not depressed, 8 – 11 mildly depressed; 14 – 18 moderately depressed; 19 – 22 severely depressed; and 23 or over very severely depressed. All HRSD interviews were recorded, allowing an assessment of inter-rater reliability by an independent blinded assessor. The overall ICC was .89, which is considered excellent (Landis, & Koch 1977).

6.2.3 Assessment points.

The data was collected every 6 months during the 18-month treatment period and at 6 months, 1 year and 2 years during the follow-up period. Including baseline, there were 7 measurement points in total.

6.3 Brief Introduction to Multilevel Analysis

Multi-level modelling (MLM), also referred to as growth curve modelling, is often used to "model" possible relationships between a chosen reference variable and a set of explanatory variables. More precisely, MLM includes units of observation at different "levels" (Rabe-Hesketh & Skrondal, 2008): it considers these levels simultaneously and includes all of the possible explanatory variables contained within them. This type of procedure is recognised as avoiding two kinds of methodological fallacy: the ecological fallacy, where associations at a higher level are interpreted as belonging to a lower level, and the atomistic fallacy, where the reverse association is interpreted (Snijders & Bosker, 1999; Gnaldi, Tomaselli & Forcina, 2018).

MLM recognises the existence of data hierarchies by allowing for residual components at each level of the hierarchy, although this type of analysis can be fitted to non-hierarchical structures as well. The term "multi-level" is used in two ways: first, to denote a specific approach to the analysis of complex data, including the statistical techniques used for this purpose, and, second, to designate the methodology for using these statistical techniques. "The name of multilevel analysis is used mainly in the social sciences (in the wide sense: sociology, education, psychology, economics,

criminology, etc.), but also in other fields such as the bio-medical sciences" (Snijders & Bosker, 1999, p. 1).

This widely used methodology is helpful in disentangling processes that operate at different levels. It does so by considering the explanatory variables at different levels of the study and attributing unexplained variability to each level.

MLM arose from the coming together of two different streams of analysis (Snijders & Bosker, 1999). The first, contextual analysis, is associated mostly with the social sciences and focuses on the effects of the social environmental context on the behaviour of individuals within it. It was in this stream of multi-level analysis that Robinson (1950) discussed the issue of ecological fallacy. The second method, mixed effects model analysis, relates to the statistical models used in regression analysis and in the analysis of variance where it is assumed that certain coefficients in the analysis are fixed whilst others are random:

> "It was realized that in contextual modeling, the individual and the context are distinct sources of variability, which should both be modeled as random influences. On the other hand, statistical methods and algorithms were developed that allowed the practical use of regression-type models with nested random coefficients." (Snijders & Bosker, 1999, p. 1).

Starting in the 1980s, many authors and publications took advantage of these two perspectives by proposing and developing different techniques for calculating the estimates for mixed models with nested coefficients. As soon as 1986, the basis for multi-level analysis was well established. Developments since then have made it a very useful methodology, with many possible applications.

There are many different sources of multi-level data, including multi-stage surveys, cluster-randomised studies, multi-site studies and meta-analysis, family studies, longitudinal studies, measurement studies and spatial data. The present study uses longitudinal or panel data, where the unit of interest (depression severity) is measured at several points in time (over the course of the treatment and during the follow-up period) according to the study specifications (approximately every 6 months).

6.4 Statistical Analysis Design

6.4.1 Growth curve models.

As the data followed a hierarchically nested structure consisting of two levels – repeated measures time points (level 1) nested within patients (level 2) – it was

analysed by fitting growth curve models. Preliminary analyses confirmed the need for a multi-level analysis of the current data.

The scores for the HRSD-17 were normally distributed at baseline and thus parametric statistics were used. Changes over time in depression scores were analysed using STATA ME statistical software (Statacorp, 2013), which fits mixed-effects models for data with missingness assumed at random (Rabe-Hesketh & Skrondal, 2008). This allowed the simultaneous estimation of how depression scores change over time and how particular covariates (i.e. MQS groups) affect the trajectory of change (Rabe-Hesketh & Skrondal, 2008).

In order to test whether, as hypothesised, the differential linear trajectories of change linked to treatment varied across the MQS groups, we added the MQS groups and their two-way interactions with time (linear time × MQS group) as covariates in the model. As the three groups (using categorical MQS scores) showed significantly different baseline severity scores, baseline HRSD scores were also added as a covariate. Covariates and interaction terms were added using a block-by-block approach, and model fit was tested using the likelihood ratio (LR) test

The time points were coded as -7 baseline, -6 (6 months), -5 (12 months), and -4 (18 months) of the treatment period, and -3 (24 months), -2 (30 months), and 0 (42 months) for follow-up. The regression coefficients involving time thus measured the linear rate of change from baseline to 42-month follow-up, while the intercepts reflected group differences at the 42-month follow-up point. Separate analyses revealed evidence of non-linear change effects in depression, and analyses were subsequently adjusted for a quadratic rate of change.

Two separate analyses were carried out, one using the dimensional MQS group scores and another where the MQS groups were categorised. For the latter, the four MQS groups (including the mixed group) were dummy coded, with Reflective patients serving as the reference group (0). To provide individual comparisons between groups, we repeated the analyses four times, changing the MQS reference group in each case.

As mentioned earlier, one of the advantages of Q factor scores is that they can be expressed as dimensional, categorical or both (Westen & Shedler, 1999b; Asendorpf, 2015). Categorical allocations were made after taking the dimensional scores (as described in the previous chapter) and assigning each participant to the sub-type for

which they received the highest score in the Q analysis (provided that the correlation achieved was ≥.40 and that the loading was at least .10 higher than on any other factors – Bradley, Heim & Westen, 2005). Using this method, 60 TADS participants were classified (one was taken out as there was not enough information for the assessment points). The largest group, 41 patients, conformed to the Reflective group, 9 patients conformed to the Easily Overwhelmed Non-Mentalising group, and 6 patients to the Disconnected group. Patients found to have positive correlations with more than one factor (4 in total) were categorised as a "Mixed" group. There were no instances of patients showing non-significant correlations with all three factors. Therefore all participants with enough data were included in the analysis.

For the second part of this study, the three clusters were dummy coded as follows: the Reflective group (the reference group) was coded as 0, the Easily Overwhelmed Non-Mentalising group was coded as 1, the Disconnected group was coded as 2 and, finally, the Mixed group was coded as 3. The criteria for statistical significance were $p < 0.05$; $p < 0.01$ and $p < 0.001$. Differences with regard to categorical data were analysed using chi-squared statistics. Post hoc tests included the comparison of specific cells and calculation of adjusted residuals.

Table 6. 1 Patient's allocation for categorical data

Cluster Group	Reflective	Easily Overwhelmed Non-Mentalising	Disconnected	Mixed
Number of participants	41	9	6	4

6.5 Results

The two analyses are presented separately below. First, the results of the MLM are presented with dimensional MQS groups. This is followed by the findings of the analysis with categorical allocations.

6.5.1 Predicting change in depression over time using dimensional MQS scores.

Table 6.1 presents a summary of all models that were estimated to determine the effect of the three MQS groups on depression severity over time. As emphasised above, model fit was determined using the LR test, which is presented in the final row of the table. As can be seen, each addition to the model yielded a statistically significant improvement over the previous model, except for the final model, which included both main group (MQS groups) and interaction (MQS group x time) effects ($p < 0.05$).

Table 6. 2 Summary of Multi-level Models for MQS groups and interaction terms using dimensional MQS scores.

Model description					
Parameters	**Unconditional Means Model**	**Level-1 Random intercept**	**Level-1 Random intercept and slope**	**Level-2 Added Predictors**	**Level-2: Predictors and interactions**
Regression Coefficients (Fixed Effects)					
Intercept	17.3 (0.6)***	9.51 (2.0)***	9.35 (1.9)***	9.59 (1.95)***	9.59 (1.95)***
linear time		-1.42 (0.32)***	-1.44 (0.31)***	-1.4 (0.31)***	-1.4 (0.31)***
quadratic time		0.15 (0.05)**	0.16 (0.04)***	0.15 (0.04)***	0.15 (0.04)***
Reflective				0.7 (1.07)	1.46 (1.87)
Overwhelmed				2.54 (0.76)**	3.25 (1.25)*
Disconnected				-1.76 (0.85)	-0.98 (1.47)
Reflective x time					0.14 (0.27)
Overwhelmed x time					0.13 (0.18)
Disconnected x time					0.12 (0.21)
Variance Components (Random Effects)					
Between-individual variance	19.3 (3.9)	19.3 (3.9)	37.27 (9.24)	31.67 (8.17)	31.17 (8.06)
Within-individual variance	16.53 (1.13)	16.35 (1.37)	14.41 (1.33)	14.41 (1.33)	14.4 (1.33)
Between-individual slope variance			2.79 (1.09)	2.74 (1.04)	2.66 (1.03)
Between-individual intercept-covariance			0.34 (0.16)	0.36 (0.16)	0.34 (0.16)
Wald $\chi 2$	27.61***	27.61***	23.17***	40.72***	41.76***
LR Test			13.79**	15.09**	0.88

Note: REF = reference group. Reference group for dimensional variables is also shown in parenthesis after the variable name. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

6.5.1.1 Unconditional means model. First, in order to test whether the use of MLM is justifiable, we employed an unconditional means model (see column 1), which revealed an average depression score of 17.3 (*SE* = 0.6). The between-individual variation was estimated to be 19.03 (*SE* = 3.9). The within-individual variation around that constant was estimated to be 16.53. The ICC was 0.54, which indicates that 54% of the variation in depression scores is due to differences between individuals, while 46% was within-individual variation. As this is a substantial variation, the use of a multi-level approach is justified (Muthén, 1994).

6.5.1.2 Trajectory of change for the MQS groups. The first model we tested (column 2 of table 6.2) was level-1, a random intercept model. Individual depression trajectories over the seven time points were modelled by introducing a time predictor variable (both linear and quadratic time), which allowed the changes in each patient's depression score to vary. The second model estimated patients' depression trajectories by allowing both the intercept and slope to vary across individuals. This model estimated that the rate of change in depression severity varied significantly between time-points between individuals. Overall, the estimate tells us that the average HRSD score at the final follow-up point was 9.34 (in the mild depression range), and that the rate of change consisted of a decrease of 1.44 score points, on average.

In the third model, the dimensional scores for the three mentalisation groups were added as a fixed effect to explore how the level-2 explanatory variables impacted the mean depression trajectory – in other words, to test for differences between the mentalisation groups in the intercept and slope of the mean depression trajectory. The *p*-value of the LR test indicated a significant improvement over the previous model ($p < 0.01$). As shown in column 5, the statistically significant estimates indicate that the HRSD was on average 2.54 score points higher for the Easily Overwhelmed Non-Mentalising individuals at the final follow-up point, two years after the treatment ended ($\beta=2.54$, $z=3.34$, $p<0.01$). The estimated parameters for the Reflective ($\beta=0.7$, $z=0.65$, $p<0.5$) and the Disconnected ($\beta=1.6$, $z=-1.92$, $p<0.05$) MQS groups were statistically non-significant, suggesting that the trajectory of the depressive symptoms could not be predicted by belonging to any of these two groups, however individuals from the Easily Overwhelmed Non-Mentalising group showed a worsening of their symptoms.

The final model, which included the MQS groups x time interaction (see column 6 of table 6.2), was found not to be a better fit than the previous model. The *p*-value of the LR test was non-significant ($p > 0.05$). As shown in Table 6.2, the interaction estimates are all highly non-significant, suggesting that there was no association between the rate of improvement of depressive symptoms and the three mentalising clusters.

In order to gain a clearer picture of the trajectory of change for each MQS group, we plotted the predicted mean of depression scores for individuals with high and low MQS group membership. In the following figures -1 indicates a low membership and +1 high membership of the specified factor (see figures 6.1 to 6.3).

As can be seen in figure 6.1, the Reflective group, which ranged from moderately depressed to very severely depressed at the beginning of the trial, showed a slight decrease in HRSD scores at 6 and then at 12 months. Scores rose at 18 months, when treatment was over, and stabilised at 30 months. The comparison group, on the other hand, began with a lower mean score, in the mildly depressed range. This seemed to increase over the first 12 months of treatment before returning to the starting range. The score went up slightly again at the one-year follow-up and then dropped to its lowest point at 30 months, where it stabilised.

Interestingly, the Disconnected group showed an opposite trajectory to that of the less disconnected sample. Scores for these patients were lower at the first two assessment points during treatment. At 18 months, when the treatment was finished, they showed a small increase before falling slightly at the one year follow-up, and stabilising at 30 months. The less disconnected group, despite following a completely different trajectory, ended up with a very similar mean (see figure 6.3).

Finally, the Easily Overwhelmed Non-Mentalising patients started the trial with a significantly higher score than the less overwhelmed group. These scores did not change much across the different assessment points, but reached their lowest point at 24 months. At 30 months scores went up slightly – entering the very severely depressed range – and stayed there until the end of the follow-up period. By contrast, the less overwhelmed group had a lower score trajectory throughout the assessment points, recording the lowest scores 30 months after the trial started (see figure 6.2).

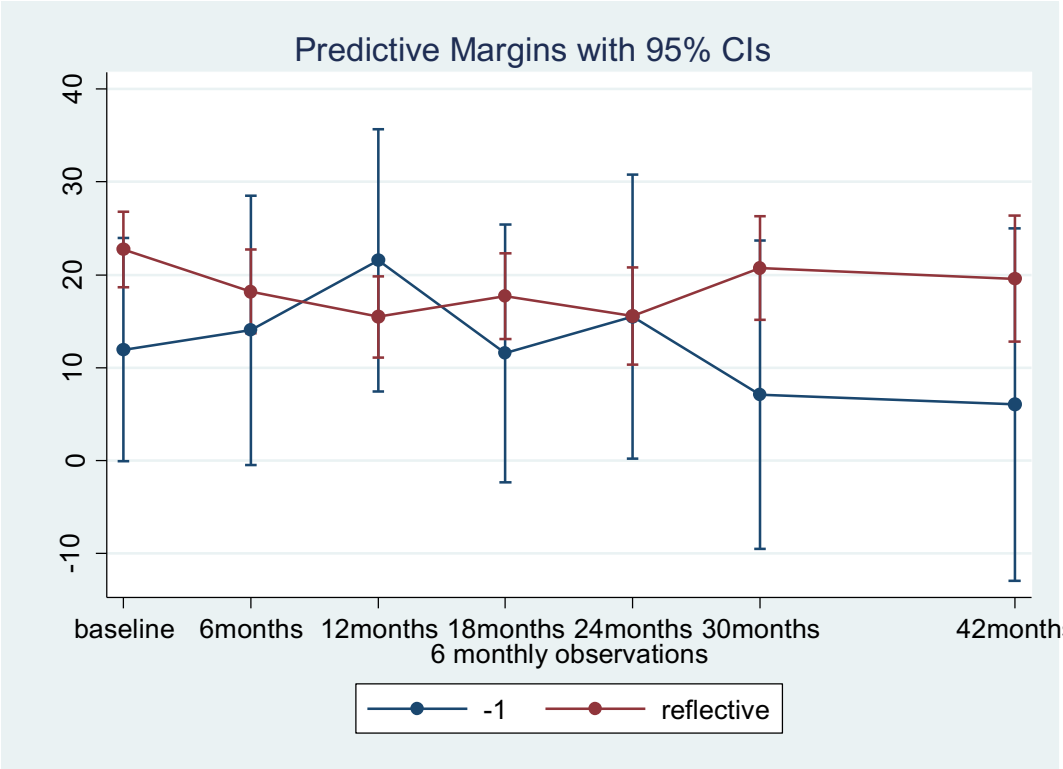

Figure 6. 1 Predicted mean scores of depression severity for the Reflective patient group.

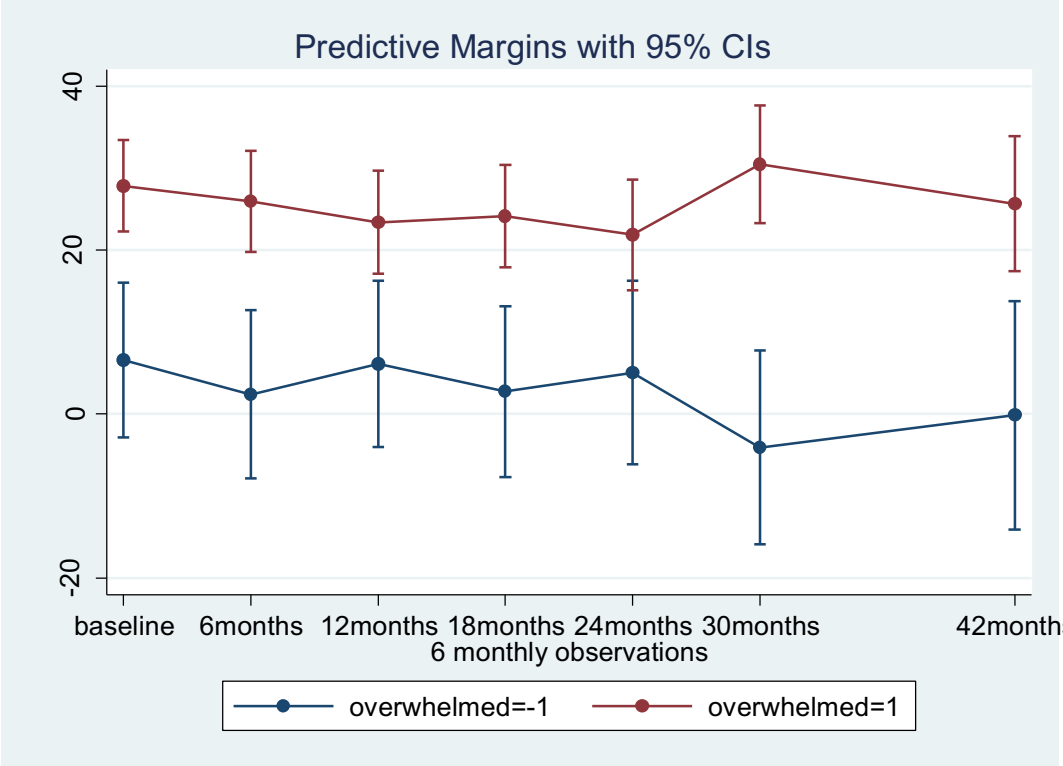

Figure 6. 2 Predicted mean scores of depression severity for the Easily Overwhelmed Non-Mentalising patient group.

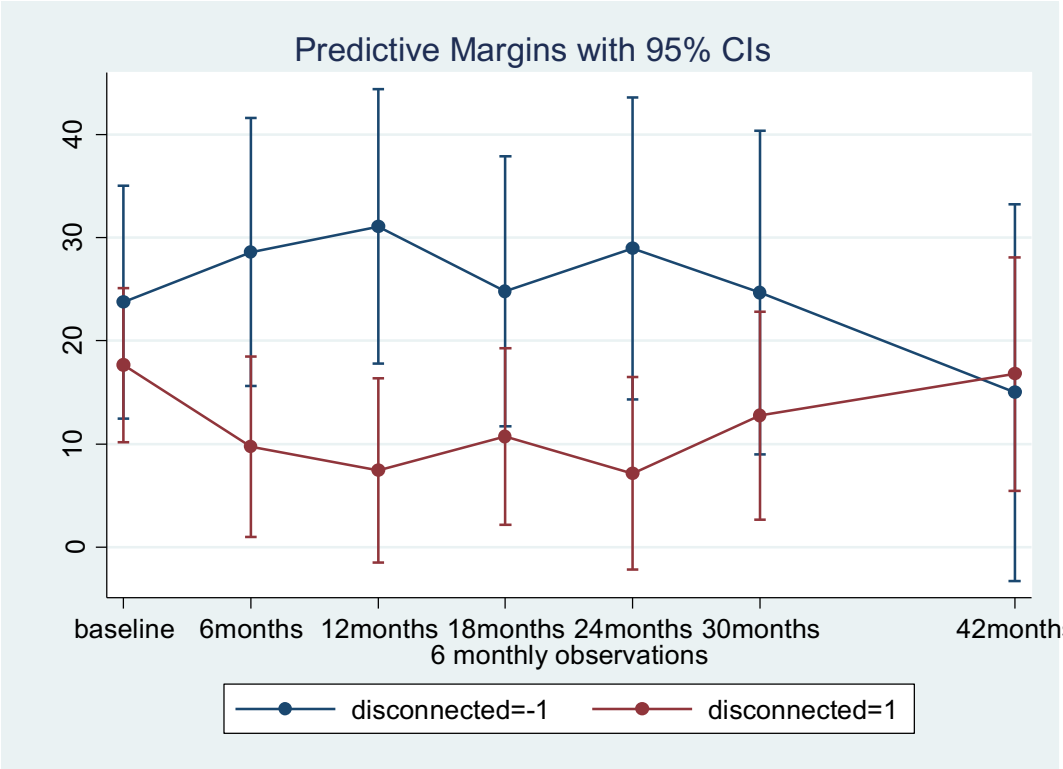

Figure 6. 3 Predicted mean scores of depression severity for the Disconnected patient group.

6.5.1.3 Predicting change in depression over time using categorical MQS scores. The second analysis, carried out using the categorical scores of the MQS groups, tested for differences between the mentalising groups in both the intercept and slope of the mean depression trajectory.

Table 6. 3 Parameter estimates of the final linear growth model for each MQS group.

Fixed and random effects	**MQS Reference group[1]**			
	Reflective	**overwhelmed**	**dissociated**	**mixed**
MQS and treatment effects of follow-up				
Intercept	-7.4 (2.5)**	-3.8 (3.3)	-5.5 (3.4)	-4.5 (3.9)
Baseline HRSD	0.78 (0.07)***	0.78 (0.07)***	0.78 (0.7)***	0.77 (0.7)***
Group comparisons				
The Reflective Patient	REF			
The Easily Overwhelmed Non-Mentalising Patient	3.6 (2.6)	REF		
The disconnected Patient	1.8 (2.9)	-1.8 (3.6)	REF	
Mixed	2.9 (3.5)	-0.7 (4.1)	1.1 (4.2)	REF

Changes over time as a function of MQS group				
Linear Time	-1.6 (0.3)***	-1.2 (0.4)**	-1.3 (0.5)**	-1.1 (0.5)
Quadratic Time	0.2 (00.4)***	0.2 (0.04)***	0.2 (0.04)***	0.2 (0.04)***
Group comparisons (of linear time effects only)				
Reflective x Time	REF			
Easily Overwhelmed Non-Mentalising x Time	0.37 (0.38)	REF		
Disconnected x Time	0.3 (0.4)	-0.1 (0.5)	REF	
Mixed x Time	0.5 (0.5)	0.1 (0.6)	0.3 (0.6)	REF
Random effects				
Level 1: within-person	35.9 (8.7)			
Level 2: in initial status	13.19 (1.1)			
Wald chi2 (9)	152.5 ***			
LR chi2 (4)	73.9***			

Note: REF = reference group. Reference group for categorical variables are also shown in parenthesis after variable name. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
[1]Each column presents the same linear mixed model, re-parameterized so that model terms are with reference to each of the RFQ groupings.

The unconditional means model, Model 1 and 2, are the same as presented in table 6.2 above. Model 3 added the categorical, dummy-coded MQS groups and the interaction term as predictor variables. The *p*-value of the LR test indicated that this model was not a significant improvement ($p > 0.05$). However, adding baseline depression as a control variable significantly improved the model fit ($p < 0.001$). As a second step, the groups were compared (by using each in turn as the reference group). The results of the comparisons can be found in Table 6.3. The estimate of trajectories of depression scores for each dimensional MQS group compared with all other individuals is displayed in figures 6.4. – 6.7. Figure 6.8 shows the average change trajectory for each MQS group.

As shown in figure 6.4, the intercept, which corresponds to the mean depression score at 42 months for the Reflective group, showed significantly lower depression scores for this group than for all the others, with a difference of 2- 3 points ($\beta = –7.34$, $SE = 2.47$, 95% CI: [–12.21, –2.53], $t = –2.98$, $p = 0.003$). The group showed on average a reduction in 7 points on the HRSD. No other group differences in the overall mean score at the final follow-up point were statistically significant (all *p*'s > 0.05).

In general, there was a consistent linear effect over time in HRSD score points, with all groups showing declines in depression. There was also a quadratic effect of time,

indicating that rates of change slowed in all groups. However, there were no statistically significant differences in overall linear rates of change for any of the MQS groups, as shown in the figures below.

Within the Reflective group there was a decline in HRSD scores at six months. This trend continued until the one-year follow-up assessment, when there was a slight increase in scores, but this is followed by a further decrease by month 42. The Easily Overwhelmed patient group showed a non-significant decline in scores at 6 and 12 months. As with the Mixed type group, there was a slight increase by 18 months, when the treatment ended, after which the score oscillated between the 24-month and 42-month assessments. In line with the dimensional analysis, the Disconnected patient group showed the lowest score at the beginning of the assessment, reaching a peak at 12 months and with little variation thereafter. Finally, the Mixed type group showed little variation overall, with the lowest score point at 6 months into treatment and the highest at 30 months.

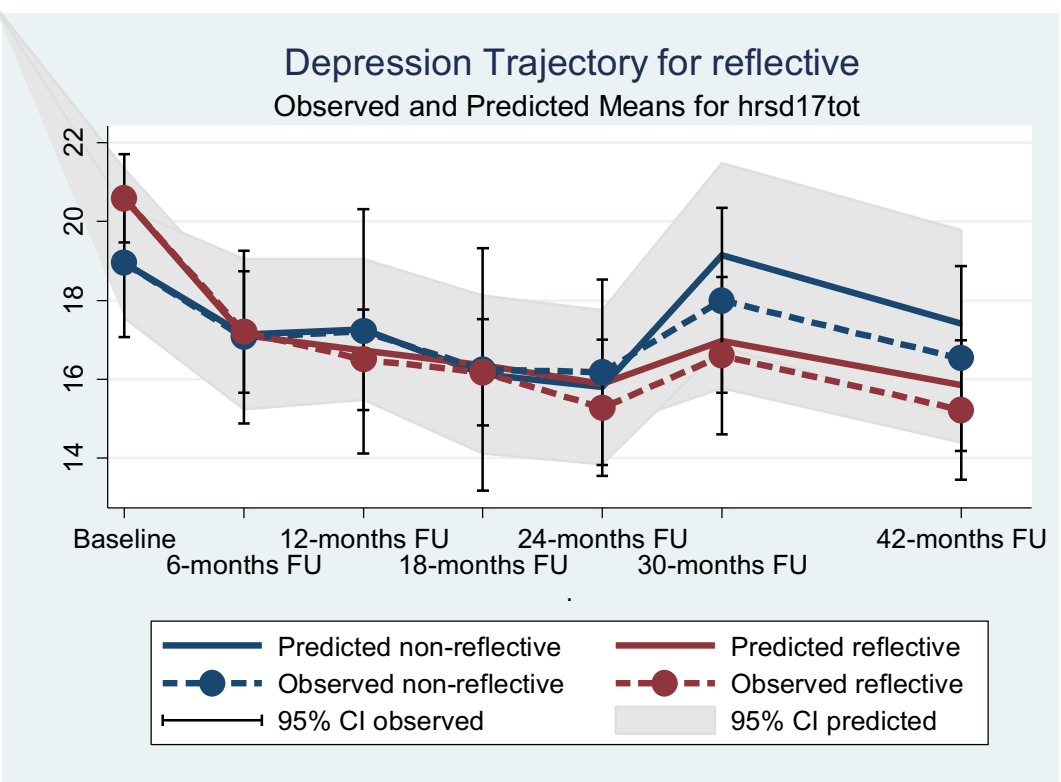

Figure 6. 4 Predicted mean scores of depression severity for the Reflective patient group compared with all other participants, using categorical allocation.

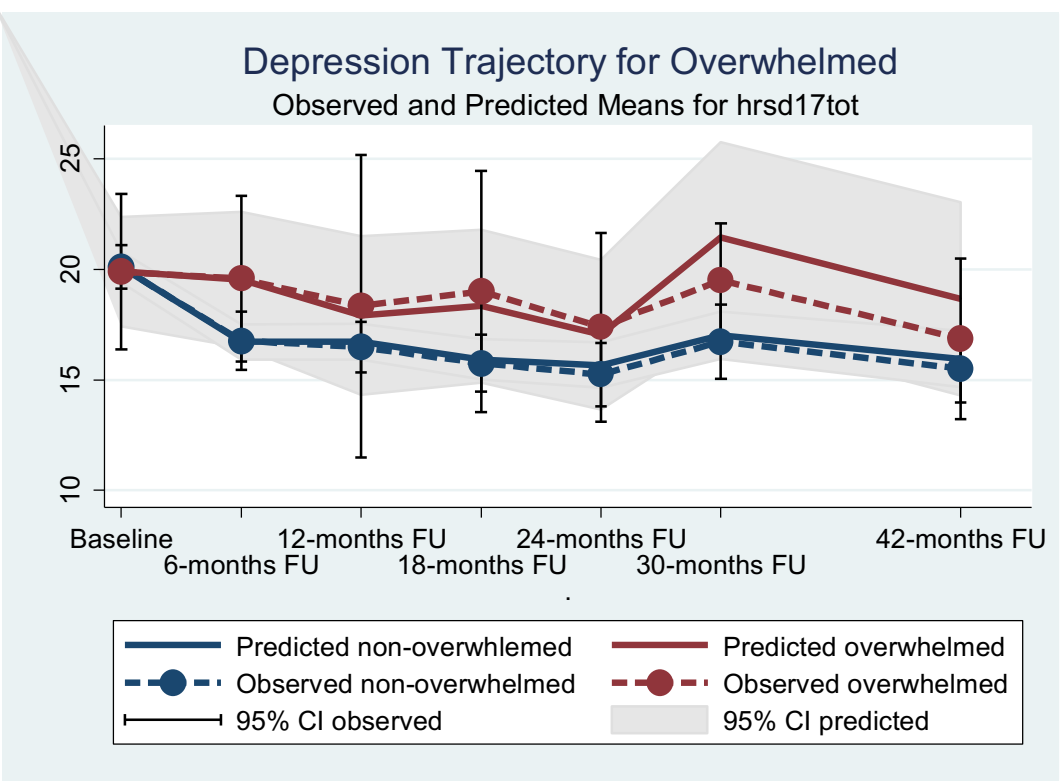

Figure 6. 5 Predicted mean scores of depression severity for the Easily Overwhelmed Non-Mentalising group compared with all other participants, using categorical allocation.

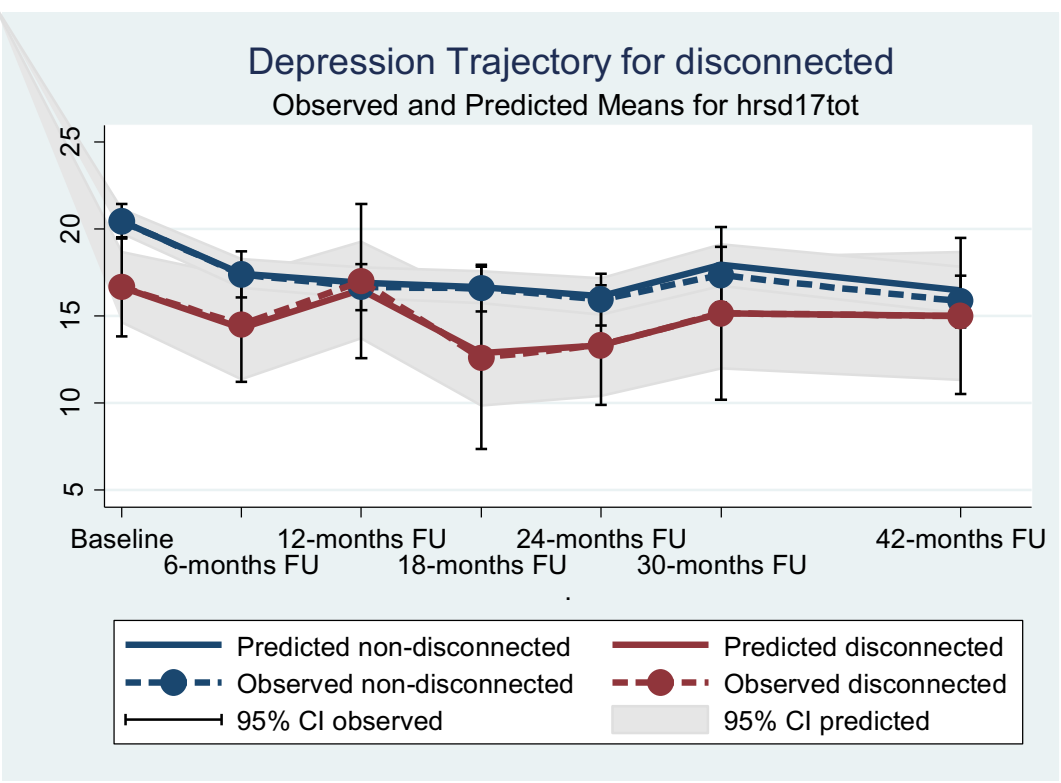

Figure 6. 6 Predicted mean scores of depression severity for the Disconnected patient group compared with all other participants, using categorical allocation.

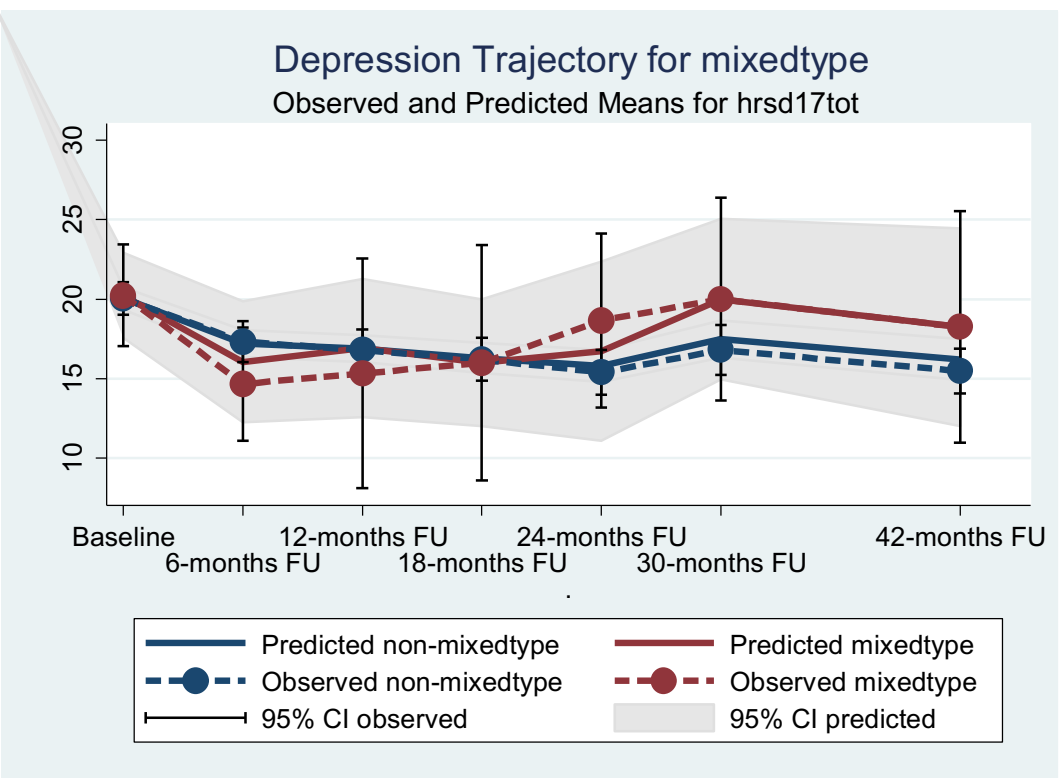

Figure 6. 7 Predicted mean scores of depression severity for the Mixed type patient group compared with all other participants, using categorical allocation.

In this final model (see table 6.4), we followed the same process as for the dimensional scores, but controlled for the HRSD-17 at baseline. The LR model showed a significant improvement in relation to the other models tested. The Reflective, Overwhelmed and Mixed patient groups started treatment with the highest depression scores, all in the severely depressed range (19 to 22 score points). The trajectory of depression did not change much for the Overwhelmed and the Mixed patient groups. Similar results were observed for the Disconnected group, but in this instance depression scores started significantly lower, in the moderately depressed range (14 to 18 score points). By assessment point three they had fallen into the mild depression range (8 to 13 score points).

At this level of analysis, we see depression scores decrease over time by an average of 7.4 score points for the Reflective patient group, which was significant. This group of patients recorded a lower score after the first six months of LTPP and stayed in the mild depression range (8 to 13) (see figure 6.8). As an overall tendency, all four groups showed a decrease in depression scores within six months of LTPP and an increase in scores at the one-year follow-up stage. By the second-year of follow-up scores had fallen again.

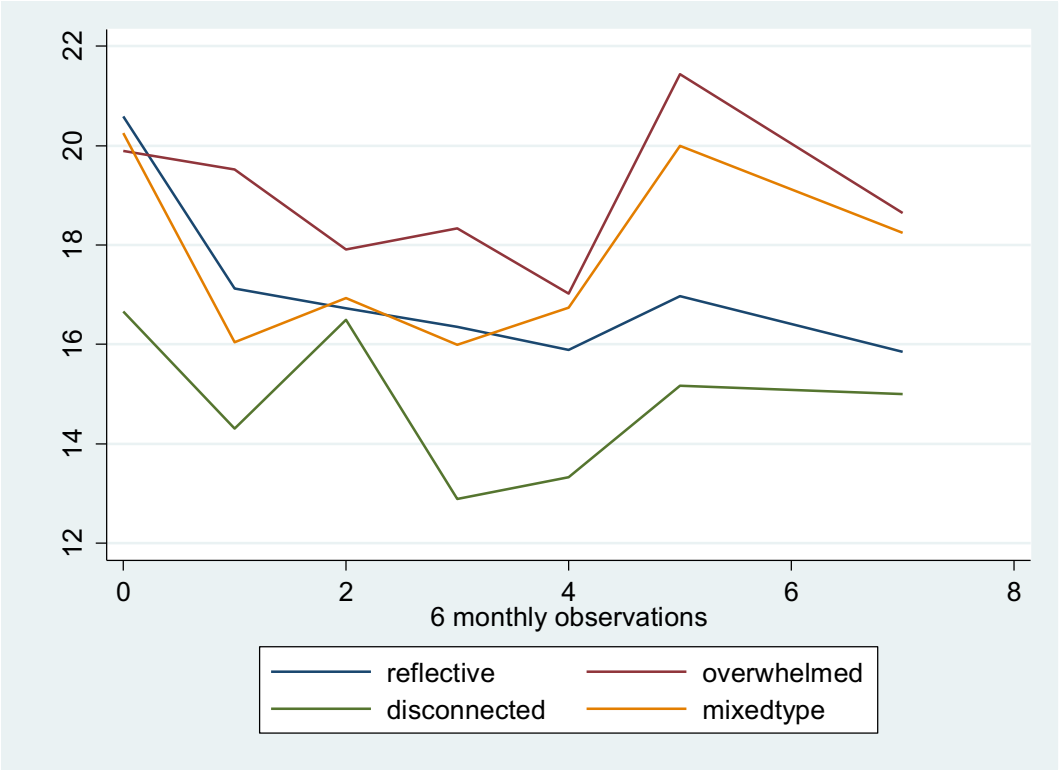

Figure 6. 8 Trajectories of depression scores measured by the HDRS-17, for categorical allocation of the MQS groups and a Mixed group, 95% CI.

Table 6. 4 MLM using categorical data, and the Reflective Patient as a reference group

Computing standard errors:

Mixed-effects ML regression	Number of obs	=	343
Group variable: id	Number of groups	=	60
	Obs per group: min	=	1
	avg	=	5.7
	max	=	7
	Wald chi2 (9)	=	152.50
Log likelihood = -981.2842	Prob > chi2	=	0.0000

HRSD-17tot	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
time2	.1616206	.0406332	3.98	0.000	.081981	.2412601
Reflective cat						
Overwhelmed	3.612712	2.639636	1.37	0.171	-1.56088	8.786304

Disconnected	1.832608	2.936703	0.62	0.533	-3.923224	7.588439
Mixed	2.92073	3.49535	0.84	0.403	-3.930031	9.771491
t6mz	-1.581602	.3138619	-5.04	0.000	-2.19676	-.9664439
Reflectivecat#c.t6mz						
Overwhelmed	.3713684	.3798899	0.98	0.328	-.373202	1.115939
Disconnected	.2859317	.4178355	0.68	0.494	-.5330108	1.104874
Mixed	.521117	.4978549	1.05	0.295	-.4546608	1.496895
HRSD Base	.7769913	.0714413	10.88	0.000	.6369689	.9170136
_cons	-7.36991	2.469633	-2.98	0.003	-12.2103	-2.529519

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
id: Unstructured				
var (t6mz)	.4814222	.1622244	.2487124	.9318688
var (_cons)	35.88155	8.773367	22.22003	57.94257
cov (t6mz,_cons)	4.156221	1.177648	1.848074	6.464368
var (Residual)	13.19707	1.101705	11.20517	15.54306

LR test vs. linear regression: Chi2 (3) = 122.79 Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference

Estimate store m4

LR test m4 m3

Likelihood-ratio test LR chi2 (1) = 71.48

(Assumption: m3 nested in m4) Prob > chi2 = 0.0000

6.6 Discussion

The main objective of this study was to further test the validity to the MQS by investigate its ability to predict differential treatment outcomes among the three depression clusters identified during the by-person analysis described in chapter 4. As in the previous studies, we used the data from participants of the LTPP stream of the TADS study to trace trajectories of depression severity, as measured by the HRSD-17 scale, during treatment and after two years of follow-up.

The overall results of the TADS study (Fonagy, Rost, Carlyle, et al., 2015) showed that at the final follow-up point, two years after treatment, 40% of the LTPP participants showed remission of depressive symptoms, compared with 10% of the TAU group. A further 29% of patients showed no improvement, while 14% showed significant improvement at the end of treatment but had not maintained this progress at the 2-year follow-up.

Although the findings of the present research are preliminary, and will depend on further investigation of the reliability and validation of the MQS, they provide some provisional insights into individual differences between participants who found once-a-week therapy beneficial and those who did not. In a very general sense, they indicate that patients in the Reflective cluster showed the greatest benefits. Patients in the Easily Overwhelmed cluster, by contrast, did not show any symptomatic gain. Hence, patients with better mentalising abilities thus appeared to have better outcomes in the TADS.

6.6.1 The three clusters and their depressive trajectories.

From a mentalising perspective, depression is closely associated with mentalising deficiencies caused by serious difficulties in attachment experiences, such as separation, rejection or loss. In situations of significant stress or adversity, individuals with poor mentalising capacity resort to familiar strategies in order to cope with or avoid negative mental states (Lemma, Target & Fonagy, 2011). Impairments in the capacity to mentalise in such circumstances lead to a resurgence of so-called pre-mentalising modes, seriously distorting an individual's perception of self, other people and the current and future state of the world. These impairments, and the presence of maladaptive internal working models of the self and other, reciprocally reinforce each

other (Luyten et al, 2012), triggering a malign cycle of negative experiences and diminished mentalising capacity.

The findings of this chapter suggest that the strategies individuals employ in situations of stress or arousal will greatly affect their ability to regain mentalising capacity, as we hypothesised at the beginning of the chapter.

The therapeutic relationship has been studied and conceptualised as an attachment relationship from various clinical traditions (Mitchell, 1988; Aron, 1996; Holmes, 2001). This helps us to understand the regulatory and modulatory role the therapist can play when the patient is in stress. From this perspective, it was no surprise to find that depression scores decreased for the three groups at the 6-month stage of psychoanalytic psychotherapy, but that their trajectories changed subsequently. In the following section, we discuss the results for each group in turn.

The Reflective group.

After controlling for HRSD scores at baseline, the finding that, at six months, the Reflective group showed an important decline in symptomatology indicates that these individuals may indeed be more suited for an insight-oriented approach (Jennissen, et al., 2018), in line with the findings of Taubner et al (2011). These authors also observed that depressed patients with higher reflective functioning capacities established a therapeutic relationship more quickly than those who scored lower on the RF scale. As noted, Reflective patients find it easier to follow the structure of sessions and to open up to the therapist. As a consequence, they may have found easier to experience the therapeutic situation as a secure environment that allowed them to venture into the mental lives of other people and at the same time explore their own mental states. In this way, the therapeutic relationship may become a "playground" in which to learn about mental states in general (Bateman & Fonagy, 2016). However further research is needed to investigate these assumptions.

Another characteristic of the Reflective group was the ability of these patients to think about what the therapist was telling them, even when this presented a different understanding of their experience. As Holmes suggested, one of the defining elements of psychoanalytically-oriented psychotherapy is that it "can help transmute and modify implicit memory systems that are likely to be awry in individuals who have experienced trauma or neglect in early childhood" (Holmes, 2013, p. 82). The fact that patients are

able to consider the possibility of opaqueness in their thinking may help them in the process of making explicit those implicit elements they encounter in their everyday life.

The meeting of these elements in the Reflective group can be thought of as initiating a benign cycle that, as well as fostering mentalising abilities, enables patients to find new and improved ways of coping with arousal caused by the stresses and adversities of life, maintaining their clinical achievements and possibly protecting them from relapse (Luyten, 2012). These findings relate to previous studies that suggest that patients with difficulties concerning self-definition ("introjectives" in Blatt's terminology) have better results in long-term, insight-oriented treatments (Blatt, 2008; Luyten, Blatt and Mayes, 2011; Jennissen et al., 2018). This was shown in their score trajectories, which were the lowest of the comparison groups.

The Easily Overwhelmed Non-Mentalising group.

The Easily Overwhelmed Non-Mentalising patient displays a combination of pre-mentalising modes, such as the teleological mode and psychic equivalence. Arousal is an enduring feature of these individuals' lives, leading to failure in the use of controlled/explicit mentalising in favour of the automatic polarity, with the concomitant predominance of affect-dominated mentalising (Luyten et al., 2012). The important role that unmodulated automatic affect plays in their experience of the world highlights their incapacity to consider alternative perspectives or seemingly incompatible emotions:

> "The imbalance between cognitive and affective aspects of mentalizing would also be congruent with findings of diminished ability to recruit the dorsal anterior cingulate cortex, which is involved in the integration of reinforcement history during reward outcomes by girls at risk for depression (Gotlib et al. 2010) and the failure of depressed patients to disengage from self-reflection when appropriate and to activate the anterior medial areas associated with positively valenced thoughts (Johnson et a1. 2009). (Luyten et al, 2012, p. 398)"

The fact that the trajectories for this group show little variation replicates what Ekeblad, Falkenström & Holmqvist (2016) found in their sample of 85 patients diagnosed with MDD. Patients with lower scores on both the RF scale and the DSRF (developed by the authors, and presented in chapter 1) had worse outcomes in cognitive behavioural and interpersonal psychotherapy. This may be one of the characteristics of "what does not work for whom", as these patients obtained no clinical benefit after 18 months of intensive treatment.

The possibility that the therapeutic relationship is not experienced as a co-regulatory system by these patients may lead to a constant suspicion towards others. These patients seem to be living in a constant interpersonal dilemma, where an intense desire to seek reassurance is met with what is experienced as an extreme need for separateness (Fonagy, Luyten & Allison, 2015). As we mentioned above, further research is needed to investigate these assumptions.

The Disconnected group.

Finally, the disconnected patient experiences mental states through the prism of hypomentalising and hypermentalising strategies which tend to inhibit mentalising in a defensive way. This might be due to a deactivating attachment strategy in response to threats or attachment relationships (Luyten et al, 2012). Characterised by a severe inhibition of reflective capacities, focusing on other's behaviours instead of looking at possible appreciations of mental states in themselves or others, they exhibited a sort of empty narrative where little is transmitted about mental states. Instead an inflexible perspective is presented, leading to an overly sensitive reaction to the imagined opinions of others.

A teleological stance can be observed in this group, where the observable behaviour of others, including the therapist, dominates the consideration of intentions or thoughts. For this group of patients, the main objects of attention are external and tangible, conforming to generalised, rigid conceptions. Patients may seem to offer a mentalising narrative, but on closer inspection this lacks content (Bateman and Fonagy 2016). As has been suggested, it may be that this group of patients tends to use attachment deactivating strategies in response to threats to attachment relationships, using a defensive mixture of hypermentalisation and overactivity to inhibit mentalising capacity. Similarly to the Easily Overwhelmed patient group, patients with a low score in reflective functioning are likely to benefit least from psychoanalytic psychotherapy, a finding also reported by Hörz-Sagstetter, et al., (2015).

6.7 Conclusions

The present study aimed to provide further evidence of the reliability of the novel three-factor structure identified in the previous chapters. To this end, we proposed the use

of Multilevel analysis to substantiate the validity of the MQS. This yielded some interesting findings. As has been reported in other research papers, patients with low mentalising capacity tended to do worst in either long or short-term psychotherapy. On the other hand, we found that patients with a reasonable mentalising capacity were able to gain some symptomatic relief from LTPP. This was particularly true of patients whose problems focused on self-definition.

We conclude that the MQS has some promising applications as an observer-rated measure to delineate the mentalising profile of patients in actual psychotherapeutic sessions. At the same time, it is clear that more research is needed into its psychometric properties.

6.8 Limitations

As suggested in previous chapters, the results presented in this multi-level study should be interpreted carefully. It is important to keep in mind that the naturally occurring groups we found in the LTPP stream of the TADS sample were identified retrospectively and were not used at any point during the main TADS study, either for purposes of randomisation or to test hypotheses.

We noted previously that the methodological approach adopted by TADS was designed to test whether LTPP was more effective than TAU in the treatment of patients diagnosed with refractory depression. The statistical power of the study was therefore not determined by taking patient effects into account. Moreover, we focused on just one of the two streams of the TADS study, reducing the number of participants by half. One direct consequence of this is that the three groups identified by the Q analysis contained a small sample size (particularly for the Easily Overwhelmed and the Disconnected patient groups). As a consequence, the statistical analyses were always restricted. Had a power analysis been conducted, it would have impacted our ability to report a more meaningful effect. We consider that further research with a larger sample of participants would help to resolve some of these methodological difficulties.

More importantly, the TADS study did not employ a mentalising approach, nor did it envision any subsequent research based on this perspective. Both the therapeutic modality used, comprising 18 months of once-a-week sessions, and the participants treated were particular to this study. Therefore, the results presented here might not

be generalisable to other modes of psychotherapy (psychoanalytic or otherwise), other providers, or even other geographical locations and cultures.

The literature on mentalising has been growing rapidly, and future research will address the current shortage of studies into how mentalising changes during psychotherapeutic treatment, and whether improvements in mentalising are empirically linked to clinical outcomes. Clarification of how mentalising relates to symptom reduction or aggravation, as a mediator or moderator, is very much needed.

Another limitation of our study is our focus on just one outcome variable, relating to depression severity across the trajectory of treatment. As not many studies have explored the link between mentalising and depression, the construct validity of this conceptual approach has yet to be established. We see this study as a step forward in promoting an understanding of mentalisation that could help in future approaches to psychotherapy process research. We would like to further investigate the effect of our derived mentalisation profiles on a wider range of outcome measures, populations and diagnostics.

Finally, mentalising occurs in the context of a relationship, a fact that was not comprehensively explored in the current research. We have explained that, while we chose to develop a patient-focused measure, we are aware that what happens in the therapeutic relationship has an effect on the mentalising capacity and arousal levels of both the patient and therapist: mentalising begets mentalising. Although the PQS developed by Enrico Jones was one of the instruments used in the TADS, its primary aim was to assess whether psychodynamic or cognitive-behavioural elements were more prominent in sessions. This deterred us from using it as a measure of the degree of mentalising in the clinical dyad.

6.9 Concluding Remarks

We consider that, despite the limitations outlined above, the findings of this study encourage the use of the MQS to assess mentalising in actual psychotherapeutic sessions. Additional studies are needed to substantiate the validity and reliability of the Q set, but for now, we have grounds to propose that the mentalising capacities a patient displays at the beginning of therapy will have an impact on the symptomatology of treatment-resistant depression.

But while the results of this study are instructive, the dearth of research into the role of mentalising in depression and its treatment means it is not yet clear how depression is associated with specific or more general mentalising impairments, or whether it acts as a moderator or mediator of treatment outcome. More research is needed to elucidate the relationship between mentalising and depression, as well as that between mentalising and therapeutic outcomes. It is also clear that to enable research in this domain, more sophisticated measures of mentalising and its dimensions are required.

Chapter 7: Summary, Conclusions and Final Remarks

Chapter Overview

This final chapter presents an overall summary and integration of the findings from the studies described in chapters 3 to 6. We will focus on the principal contributions of this research to our present knowledge and will discuss the theoretical and methodological implications of these findings. We will comment on the limitations presented throughout and recommendations for future research with the Mentalising Profile Q set (MQS).

Introduction

This thesis has provided an initial report of the development and preliminary validation of the MQS, an observer-rated measure that aims to describe the mentalising capacity of individual patients during psychotherapeutic sessions. This project had as one of its objectives filling a gap in the mentalising literature, namely the absence of a valid and reliable measure for use with audio-recorded sessions in mentalising terms.

The MQS was developed to be as jargon-free as possible with regards to mentalising theory, so that a patient's ability could be assessed through objective observation as opposed to subjective interpretations, in tune with mentalisation-based theoretical and empirical constructs (Bateman and Fonagy, 2016). The MQS was designed to capture elements belonging to the four polarities of mentalising (controlled/explicit vs automatic/implicit, cognitive vs affective, internal vs external and self-oriented vs other-oriented), as well as the pre-mentalising modes (psychic equivalence, teleological stance and pretend mode) (Fonagy, Gergely, Jurist & Target, 2002; Fonagy & Luyten, 2009; Luyten, Fonagy, Lowyck & Vermote, 2012). The results from the studies presented in this research show the MQS to be a reliable and valid instrument in assessing mentalising capacities and offering a profile of patients who are attending psychotherapy.

Yet, at the same time, it is clear that much more research concerning the psychometric features of the MQS is needed.

7.1 The Development, Validity and Reliability of the MQS

One of the main aims of the MQS was to create items that were relevant and suitable for assessing mentalising capacity during a psychotherapeutic process. The empirical data and feedback from experts suggested that this goal was achieved. Particularly, the feedback provided by a group of 9 research colleagues and 18 experts in mentalisation theory and practice helped us to identify items that were unclear or were not characteristic of the category they were supposed to represent. The experts considered, on average, that the overall items were representative of 82% of the different characteristics of each category. Based on their feedback we decided to remove from the first universe of Q items those that did not achieve a threshold rating (i.e. were deemed not to represent properly a mentalising category or were confusingly worded). We ended up with 112 items out of the 134 that were sent for further review. We were aware that this was a relatively high number according to Q methodological researchers such as Watts and Stenner (2012) and Brown (1980), but were committed to reducing the item set further using other statistical procedures that would improve its reliability.

Another important aspect of the process of developing the MQS was to avoid the possibility of a high level of inference or interpretation on the part of observer/raters when immersed in the task of Q sorting. In this regard, the items were worded in the most concrete way possible, where the "observable" linguistic cues were used as the objective parameter of the importance given to a specific item. At the same time, the wording was pivotal to the inter-rater reliability process, since higher levels of inference would result in lower levels of inter-rater agreement. The latter was evaluated using a random sample of 15 sessions from the REDIT trial (Fonagy & Lemma, 2013). A modest ICC was achieved (ICC=0.58); hence further efforts are needed to increase the reliability of the MQS.

There is one aspect of the therapeutic process that could not be reflected in the MQS items. As the sessions being assessed were audio recorded, the behavioural and gestural cues which form part of the external self-other polarities could not be examined *in vivo*, except in cases where these were specifically discussed by the patient and/or therapist[21]. Hence, research with video recorded sessions may be

[21] Such items as "Patient notices and responds to non-verbal cues (e.g., facial expressions, use of eye contact, body posture and movements, etc.) from other people" or "Patient is overly sensitive to how others look or behave".

needed to further explore the psychometric properties of the MQS, and particularly those items that refer to externally-based and automatic/implicit mentalising.

7.2 Deriving Naturally Occurring Groups in a Clinical Sample

While the development and initial validation of the MQS was the basis and initial purpose of this research, we wanted to test the possible identification of naturally occurring clusters or groups of persons through Q methodology. This step was very important in this research, as it was the work of Enrico Jones (2000, Ablon & Jones, 1998, 1999) that inspired our initial proposal. But it also seemed to fit our methodological thinking for the preliminary validation of our measure, an implementation of a mixed methods approach where Q and R analysis are used at different stages of the overall research.

With this in mind, Q methodological or by-person research was carried out using data from the Tavistock Adult Depression Study (TADS) (Taylor et al., 2012; Fonagy, Rost et al., 2015). The participants of this clinical trial were severely depressed individuals. Sessions were rated at two separate points in the therapeutic process for patients undergoing LTPP, one at the beginning of treatment and another closer to the end of treatment.

The Q analysis yielded three discernible empirical groups at both times of assessment. Two of these groups were very similar at times 1 and 2 (the Reflective and the Easily Overwhelmed Non-Mentalising groups), but a third and smaller group varied (at time1 it was labelled the Disconnected group, and at time 2 the Other-Reflective group). These two cluster groups, although composed by fewer Q sorts, proved to be distinct from the others, with clearly identifiable characteristics. This is a good example of how in Q methodological research a smaller sample size is not a major disadvantage; however, we followed the necessary analysis to provide statistically sound results.

At time 1, the largest cluster (N = 30, which explained 40.91% of the variance) was labelled as the Reflective patient group. It was characterised by fluent narratives and openness about mental states. These patients made use, mostly, of a controlled mentalising stance: they would make some effort to reflect on what they were saying and to see different perspectives of the situation being discussed. They were also flexible, being able to argue instead of maintaining a rigid perception or idea of a situation, and seemed to enjoy better interpersonal relations than other patient groups.

The second-largest cluster (*N* = 8, which explained 11.60% of the variance), was labelled the Easily Overwhelmed Non-Mentalising group. As its name suggests, patients in this cluster tended to be easily overwhelmed by their own and others' affective states. They did not generally understand the reasons for their affective responses, which predicated against the possibility of a reflective stance, leaving them at the mercy of more automatic and visceral modes of relating.

The final cluster derived at time 1, the Disconnected patient, consisted of a handful of individuals (*N* = 6, which explained 5.2% of the variance), and was characterised by a severe inhibition of reflective capacities. Patients focused on the behaviour of the people around them instead of looking for possible explanations of this in terms of their own and others' mental states. They exhibit a sort of "empty" narrative where little is transmitted about mental states; instead an inflexible perspective is presented.

At time 2, when the end of treatment was approaching, we found similar groups to those described for clusters 1 and 2 at time 1, but with different numbers of participants (21 for the first group, that explained 50.66% of the variance, and 9 for the second, that explained 12.76 of the variance). However, the third group we identified at this assessment point seemed to form a distinct cluster, which we named the Other-Centred patient (*N* = 4, that explained 4.80% of the variance). These individuals tended to have a more other-oriented mentalising inclination, and were able to respond with empathy to the mental states of other people. It is important to mention, in terms of correlations among these cluster groups, that this smaller group might be a variant of one or both of the other two, but distinct in its characteristics. For instance, at time 1, the third group seemed to share the non-mentalising attributes of the Easily Overwhelmed patient, while at time 2 it was closely related to the Reflective group. Nevertheless, these smaller groups had some unique characteristics that reminded us of the different depressive polarities extensively researched by Blatt (2004) and colleagues, which will be discussed below.

Therefore, despite the limitations of this study, results suggest that there were at least three different clusters of depressed patients, when assessed by their mentalising capacities. Nevertheless, the size of our sample, and the number of patients in the third groups, make us cautious about forming generalisations based on this data. Although we made use of a mixed methods approach for the analysis of our data, the replication of our findings in similar clinical populations, and in other types of patients, would lend more confidence to our results.

7.3 Reliability and Validity

The final chapters in this thesis further focused on the initial validity of the MQS. For that purpose, we carried out two different studies to test whether the three identified mentalisation profiles at T1 could be reliably differentiated. In the first study we looked at the correlations between the three MQS groups found at time 1 and baseline measures from the TADS study, to make the reliability of the newly developed MQS more robust by investigating its convergent and discriminant validity.

In chapter 5, the first of these studies, we found that the Reflective patient group correlated negatively with depression scores as measured by both the HRSD-17 and the BDI. Hence, it seems that, consistent with theoretical assumptions (Lemma, Target & Fonagy, 2011; Luyten et al, 2012), patients with a more reflective stance tended to score lower when assessed for depression, possibly because they are able to find different ways to deal with situations that might trigger a depressive response, such as an attachment threat. Conversely, the groups that were more impaired in their reflective functioning, the Easily Overwhelmed Non-mentalising and the Disconnected groups, were found to have higher levels of depression severity as measured by the two assessment tools mentioned, as we hypothesised.

The overall trend was supported by the scores in the GAF. These showed that the Reflective group tended to have better psychological, social and occupational functioning in comparison to the other two groups, where the correlation was negative, indicating less ability to function in these areas. As these activities require awareness, effort and a controlled reflective stance (Fonagy & Luyten, 2009), it is understandable that the two non-mentalising groups found them more challenging, as these patients were characterised by a more automatic and externally-oriented perspective, making it difficult for them to enjoy normal social interactions. For the Disconnected patient, there was a further correlation with being unemployed: one can hypothesise that marked interpersonal difficulties and a withdrawn and paranoid stance (as the correlation with the PROQ-2a suggested) make building new relations or coping with old ones more difficult, increasing mistrust in the perception of other people's intentions. On top of this an epistemic petrification (Fonagy, Luyten & Allison, 2015) sets in, making it difficult to interpret and update the signals received from other people and the environment, and to understand personal experiences from a different perspective.

Another set of important correlations, adding to the reliability of the MQS, was obtained with the SWAP and its different categories for personality psychopathology. Whilst the Reflective patient group correlated negatively with emotional dysregulation and paranoid characteristics, the other two groups correlated positively with the first profile, while the Disconnected patient group correlated positively with both. However, the Disconnected group also presented characteristics of borderline personality disorder and hostility, as expected due to the difficulty of these patients to maintain a cohesive sense of self and others. Other approaches to research and clinical practice have spoken about the correlation of personality psychopathology and failures in mentalisation (i.e. Abbass, Town & Driessen, 2011; Kernberg, 2012). It is recognised that emotion dysregulation, impulsivity and social and interpersonal dysfunction are the main characteristics of the borderline patient (American Psychiatric Association, 2000) and that the dysregulation of emotional arousal causes major imbalances in mentalising ability (Bateman & Fonagy, 2016). As there is rigidity in the affective and automatic dimensions, an inability to represent other's mental states ensues, decreasing the level of attention, impulsivity and acting out (*ibid*).

The second study of the reliability of the MQS, reported in chapter 6, used a multi-level analysis approach. We investigated whether the three clusters showed differential treatment effects to the LTPP, using data from the TADS study. The results showed that the three groups had distinct trajectories of change, with the Reflective group showing a meaningful reduction at the end of the follow-up treatment, and the Easily Overwhelmed Non-Mentalising group seemingly experiencing no change in depressive symptomatology throughout. The finding for the Reflective patient group is consistent with the notion that longer-term insight-oriented psychoanalytic treatment is more appropriate for patients with higher levels of functioning (Roth & Fonagy, 1996; Fonagy, Rost et al., 2015). The Disconnected group, on the other hand, tended to show more fluctuation at the different assessment points, consistent with the emotional dysregulation and instability that characterises this group. However, at the end of treatment, overall levels of depression were broadly unchanged. As has been discussed, the comorbidity of Major Depression and personality psychopathology potentially doubles the rate of unsatisfactory outcomes (Abbass, Town & Driessen, 2011).

Overall, the group of patients that were able to make use of their reflective capacities in treatment sessions showed a better response to long-term psychoanalytic psychotherapy compared with those who resorted to pre-mentalising modes of functioning. This substantiates previous findings on the efficacy of psychoanalytic

approaches to the treatment of depression (i.e. Abbass & Driessen, 2010; Blatt, 2004, 2008; Driessen, et al, 2015). But although all participants in the TADS study shared a diagnosis of Major Depressive Disorder, such patients tend to form a heterogenous group, as Blatt (2004, 2008) has strongly argued. This reveals itself in the naturally occurring clusters derived in this research, and by the work of Rost, Luyten & Fonagy (2018) with the TADS cohort. Further research would help to clarify the factors that make it difficult for the patients in the Easily Overwhelmed and Disconnected groups to achieve meaningful gains from this psychotherapeutic approach.

7.4 Limitations and Advantages of This Research

7.4.1 Limitations.

Throughout this research we have pointed out certain limitations in the methods and analysis presented. The issue of the number of participants, in relation to the generalisability of the results, is a major consideration – and the subject of ongoing discussion in the academic community (Kline, 1994; Mundfrom, Shaw & Ke, 2005). However, from the perspective of conventional Q methodology, the participant group size, or P set, should be smaller than the number of items in the Q set: it is generally agreed that somewhere between 40 and 60 items is the normative range (Watts and Stenner, 2012). Although we complied with this general principle, the fact that we were aiming to elaborate a standardised measurement through a mixed methods approach called for as many participants as possible. We were also dependant on the number of participants in the TADS study, and the volume of information gathered for these patients. This further limited our options.

Finally, we consider that the absence of any assessment of the therapist's participation in sessions produced a lop-sided perspective of the therapeutic process. This problem can be described along two different lines. Firstly, there is an assumption, widespread in research trials, that there is some kind of uniformity among patients and therapists (Kiesler, 1966; Blatt and Auerbach, 2003), meaning that at baseline patients are broadly similar to each other and that therapists follow the same principles and rarely diverge from manualised treatment protocols.

The second line of thought regarding therapist participation emerges from investigations, past and present, which estimate that at least 30% of patient improvement can be attributed to the therapeutic relationship (Lambert, 1992; Greenberg, 2018). As any psychotherapeutic approach is delivered within an

interpersonal context, requiring interaction between the therapist and patient, the relationship that develops between the two is considered one of the main events in the process, and a common factor in effective psychotherapy (Greenberg, 2018). With all the weight that is put behind the role of the therapist, and keeping in mind that mentalising is an interpersonal ability, studies which take no account of this are overlooking an integral element of the therapeutic enterprise (Luyten, Blatt & Mayes, 2011). From a contemporary attachment perspective, but contrary to Bowlby's perspective, Holmes has reminded us that it is the quality, more than the quantity, of interaction that matters (2014). Future research could address this limitation by investigating the relationship of the MQS to other measures of therapeutic alliance, or even with tools such as the PQS (Jones, 2000).

7.4.2 Advantages of the approach taken.

There are, however, some advantages to the approach taken in this research. Foremost among these is the flexibility of the data from a Q analysis. As other authors have mentioned, the ability to use data in the comparison of group sessions (nomothetic research design) and single case studies (idiographic research designs) is something to be highlighted (Asendorpf, 2003, 2015; Calderon et al, 2017). To this, we also add the possibility of translating factor loadings into dimensional scores and categorical data, thus broadening their use in a mixed methods approach, as adopted by this research.

We considered that one of the advantages of this research is that the MQS offers an approach that relies on exploratory, rather than confirmatory, hypotheses or analyses. It is not that the latter cannot be done, but given that mentalising capacity is attachment-specific, the ability to pick up on subtle, unexpected cues in any given patient's experiences when talking about other people, including the therapist, is of clear benefit. One of the consequences of this approach was a reduction in the variance within groups, as the clusters derived from Q analysis were based not on preconceived notions of how patients should be grouped, but on the data itself. It was Stephenson's (1954) belief that a theoretical perspective could benefit the gathering of meaningful data (his concept of abduction). But as the MQS is composed of many constructs, expressed in 71 items, and due to the exploratory nature of the by-person analysis, its purpose was to find relations *within* the data rather than to confirm the researcher's hypothesis or that of previous research.

Finally, we recognise that psychodynamic concepts are very difficult to test empirically. The fact that they usually have more than one meaning, not always clearly defined (Blatt & Auerbach, 2003; Levy, Ablon, et al., 2011), makes the task of establishing some sort of inter-rater reliability very challenging. The approach that we took involved making use of constructs that could be inter-subjectively observable, allowing different observers to judge independently the presence and importance of mentalising characteristics (as was discussed in chapters 2 and 3).

7.5 Mentalising, Depression and Therapy

The few studies that have researched the link between mentalisation and depression have found that depressed individuals are characterised by a significant impairment in mentalising ability, as assessed by the Reflective Functioning scale within the AAI (Fischer-Kern, et al., 2013; Ekeblad, Falkenström & Holmqvist, 2016). From a mentalising perspective, these impairments may manifest themselves as cycles of hyper and hypomentalisation in response to threats to attachment relationships (Luyten, et al., 2012), which lead to defensive inhibition and a distorted mode of mentalising.

These non-mentalising modes are characterised by the re-emergence of states such as the psychic equivalence mode, where the equation of inner and outer reality (Fonagy et al., 2002; Bateman & Fonagy, 2016) makes symbolisation, play and secure mental exploration impossible (Luyten et al., 2012), as was seen in the patients belonging to the Easily Overwhelmed Non-Mentalising group. Another important characteristic of this cluster of patients is the equation of physical and psychological pain. This was expressed in such items as number 61, "patient tends to describe his-her mental states with a correlated physical experience (e.g., 'I was shocked and got sick'; 'When I am depressed I feel tired and want to sleep all day')", and by a limited appreciation of mental states when describing other people's actions. Such characteristics might help explain the high comorbidity of fatigue and pain in some depressed patients (Hudson et al. 2004; Van Houdenhove & Luyten, 2008).

The Q-sort findings also point to a re-emergence of teleological modes of experience, where desires and feelings tend to be linked to what is observable in the behaviour of others. This can be seen in the repercussions that such behaviour has on patients' lives, as was observed in both the Easily Overwhelmed and the Disconnected patient groups.

A recent refinement of mentalisation theory has incorporated elements of the "developmental cascade model" of depression put forward by Luyten and Fonagy (2018). This suggests that there are three important aspects of impairment in depressed people, relating to stress regulation, reward (the incentive value of attachment and agency/autonomy in particular) and mentalising (ibid). The interaction of these elements leads to a vicious cycle of impaired stress regulation and attachment sensitivity. As well as extending current theory, such ideas offer a broader framework in which difficulties in achieving or regaining a mentalising capacity in psychotherapy can be understood.

7.5.1 Epistemic trust and the communication systems.

The concepts of epistemic trust (Fonagy & Allison, 2014) and epistemic vigilance (Fonagy, Luyten & Allison, 2015) emerged simultaneously in mentalisation research. They highlight "the social and emotional significance of the trust we place in the information about the social world that we receive from another person—that is, the extent and ways in which we are able to consider social knowledge as genuine and personally relevant to us" (Bateman & Fonagy, 2016, p. 23). If the information a person receives is deemed valid and representative of their inner state, it is more likely to be trusted and incorporated into the repertoire of emotional experience and knowledge about the self and others.

Fonagy and colleagues have suggested that epistemic trust lies at the heart of all effective psychotherapeutic interventions (Fonagy and Campbell, 2017; Bateman and Fonagy, 2018). The idea they are promoting is that the generation of epistemic trust in the therapeutic setting can help to diminish the epistemic vigilance that patients exhibit in ordinary social interactions in a way that can be observed and worked through in the therapeutic relationship. In our research, we observed aspects of epistemic vigilance in the Easily Overwhelmed and the Disconnected patient groups, including a tendency to rush to quite rigid judgements and to concretise mental states in themselves and others. The Reflective patient group, on the other hand, seemed able to loosen their epistemic vigilance during treatment, for example by accepting positive social information they might previously have disavowed and acknowledging the possibility of altering their previous beliefs and expectations (Bateman & Fonagy, 2016). However, the authors recognise that in order for such a change to take place there must be a "workable" level of epistemic trust (Fonagy and Campbell, 2017) because "[…] in the absence of trust the capacity for change is absent" (Fonagy, Luyten & Allison, 2015, p. 591).

Therefore, they propose three distinct processes of communications to make the psychotherapeutic process more effective. The “communication system 1” relates to the teaching and learning of content. Different approaches to psychotherapy make use of this system when they transmit to the patent a coherent model for understanding the mind; they usually do so in a way that is accessible to the patient and that resonates with their recognition of their own mental states.

“Communication system 2” deals with the re-emergence of robust mentalising. Once the patient is open to social communication in new contexts, they may be able to use the therapist’s mind and be curious about the therapist’s use of thoughts and feelings, which at the same time will enhance and strengthen the patient’s reflective capacity. The therapist’s stance becomes crucial at this point: if they are not able to recognise when the patient is open to learning about mental states, their attempt to mentalise the patient’s experience will be met with a non-mentalising stance. “Nonmentalizing in the patient cannot be met by mentalizing in the clinician; it can be met only by ‘switching on’ mentalizing in the patient” (Bateman & Fonagy, 2016, p. vii).

Finally, the “communication system 3” sees the re-emergence of social learning, one of the most effective ingredients of therapy (Bateman & Fonagy, 2016). Once the patient’s epistemic vigilance has decreased via the first two communication systems the patient becomes increasingly open to social learning as well, outside the therapeutic setting. This exercising of the mentalising capacity, however, is dependent on the strength of the patient’s social environment and how benign it is (Fonagy & Allison, 2014; Fonagy & Campbell, 2017; Bateman & Fonagy, 2018). The therapeutic process is more likely to achieve good-enough results if it equips the patient with the necessary tools to negotiate his present and future relationships from a different stance. In other words: “change is probably due to how the person comes to use his social environment – not the truth of what is specifically discovered in therapy” (Allison & Fonagy, 2016, p. 295).

This brings us back to the three profiles identified by the MQS in the TADS sample. As there is no single form of mentalising within a heterogenous group of depressed patients, the participation of the therapist will be pivotal to the task of helping patients to regain a mentalising stance before more unconscious underlying psychological issues are exposed. As we discovered, two of these groups had little or no mentalising disposition, in which case proceeding to address unconscious dynamics and their relationship to the patient’s present symptomatology and interpersonal relatedness

may have been counterproductive (Luyten et al, 2012). The question remains about the precise impact of the therapists' technique in these particular cases, and of the openness of the patient to epistemic trust in the TADS setting. In a psychotherapeutic research process, "understanding what doesn't work for whom is as much a priority as what does" (Clarke, 2018, p. 98).

7.6 Some Ideas for Future Research

Throughout this thesis we have put forward ideas for future research. These can be organised into three interrelated categories: 1) future research into the validity and reliability of the MQS, 2) addressing methodological questions raised by this thesis, and 3) future research into the practical use of the MQS.

One aspect of the MQS that could be developed and validated in future research is the creation of mentalising prototypes, allowing mentalising capacity to be assessed on a continuum and not just through categorical scores (i.e. present or absent). This idea has been well developed by Westen and Shedler (1999a, 1999b, 2007) in the case of personality psychopathology, and more recently by Rost, Fonagy and Luyten (2018) in the case of depression, and has proved clinically useful. A scheme of this type would help therapists in drawing up a clinical plan with the patient, thereby tailoring interventions to the patient's needs.

Another area that we would like to explore is the usefulness of this measure in clinical supervision and in charting a patient's mentalising style across sessions. The tool could be helpful in training sessions, allowing trainees and supervisees to conceptualise their casework in mentalising terms, and at the same time reflect on their patient's mentalising capacity. There are suggestions that understanding a patient's level of mentalising can be helpful both for therapy indication and treatment planning (Hörz-Sagstetter et al., 2015), and is therefore worth assessing in early psychotherapeutic sessions.

As both the pilot and the Q analysis were carried out with samples of depressed patients receiving some kind of psychodynamic psychotherapy (DIT in the case of the pilot, LTPP in the case of the TADS), it would be interesting to code and compare sessions from other psychotherapeutic traditions. In so doing we could test Fonagy and colleagues' assertion that mentalising is a common ingredient in all effective psychotherapies (Fonagy & Allison, 2015; Bateman & Fonagy, 2016).

Another area of interest could be that of attachment and mentalising. Although the importance of attachment in mentalisation has been re-conceptualised (Fonagy et al., 2017), it is still a very important part of mentalising theory and practice. We consider that assessing both constructs (attachment and mentalising) and analysing their relationship would help us to understand the mentalising strategies of people with different attachment styles. We found that an Easily Overwhelmed patient, besides lacking self-regulation, is also very concerned with what they receive from the outside world, fitting the description of a preoccupied attachment style (Holmes, 2014). On the other hand, the Disconnected patient seems to have difficulties integrating his experiences of self and others, and may possibly adopt strategies found in a dismissive attachment style (Ibid). Could we find a similar mentalising profile linked to an attachment style? Future research would be needed to answer this, although we speculate that variations may exist.

Finally, it would be interesting to evaluate whether specific clinical interventions, such as clarifications, confrontations and interpretations, promote or inhibit better mentalising ability – a line of inquiry first suggested by Hörz-Sagstetter (2015).

7.7 Final Remarks

The MQS is a newly developed, jargon-free, observer-rated measure that allows the independent assessment of a patient, or a group of patients, in terms of their mentalising ability. It provides a picture of the mentalising style that a patient is employing during a psychotherapeutic session, and of their preferred mentalising strategies or difficulties when describing mental states in themselves and others, providing a vocabulary that has psychometric properties and detailed clinical descriptions.

The studies presented in this thesis show that the MQS has the potential – once certain of our findings have been replicated – to become a reliable and valid instrument for exploring the mentalising capacity of the patient during a psychotherapeutic process. The measure helps to fill a gap in mentalising theory and clinical research by putting forward a better definition of the mentalising aspects that could make a therapy a success or a failure, while at the same time contributing to current debates in psychotherapy process research.

We consider that the MQS offers a unique approach to the assessment of mentalising by linking clinical judgement and inference by external observers to the more empirical dimension of clinical research. In this way it builds a bridge between research and practice through the quantifying of clinical observations and expertise. It also makes mentalisation theory more accessible to systematic investigation in the clinical setting, offering a less ambiguous language to describe the variations in the mentalising capacity of the patient.

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APPENDICES

Appendix 1: Instructions for Experts

Instructions

We are currently working in the *Q-Sort Mentalising Profile* as part of a research project at the PhD program in the Unit of Psychoanalysis at University College London (UCL).

We would be very grateful if you could spare us around 20 minutes of your time in helping us to evaluate the items we have created so far.

Please rate each of the items in terms of the item's accuracy to capture the characteristics and features of the mentalising POLARITY o PRE-MENTALISING MODE that it is intended to describe from a 0 (not at all prototypical) to 7 (highly prototypical).

Finally, we would like to know any comments you have about the items and if you have any other ones that you think we should consider.

We appreciate, in advance, your support.

Appendix 2: List of Items Sent to Experts for their Assessment

Controlled

1. Patient tends to spontaneously consider different possibilities of what other people might be thinking or feeling.
2. Patient is able to reflect, after the event, on his/her loss of mentalizing capacity when under stress.
3. Patient has the ability to correct his/her opinion about his/her own or other people's thoughts or feelings when challenged by others.
4. Patient is capable of listening to and taking in information that is emotionally difficult (i.e., information that challenges cherished beliefs, perceptions, and self-perceptions).
5. Patient is articulate – that is, he/she expresses him/herself well when talking to the therapist.
6. Patient is capable of considering alternative viewpoints, even in topics that stir up strong feelings in him/her. (SWAPP II-111).
7. Patient reflects on what made him/her act in a certain way in a given situation. (PMS-8)
8. Patient keeps track of his/her own thoughts and feelings. (CAMS-8)
9. Patient is introspective – that is, he/she allows him/herself to explore his/her inner thoughts and feelings. (PQS-97).

Automatic

1. Patient tends to quickly come up with explanations about his/her own behaviour and the behaviour of other people without giving much thought to it.
2. Patient becomes easily stressed and then readily loses the capacity to reflect on his/her mental states.
3. Patient seems unable or unwilling to modify his/her behaviour in response to feedback.
4. Patient tends to respond to others in stereotypical ways, without giving much consideration to the reasons why others behave in a particular way.
5. Patient tends to easily "jump to conclusions" about the mental states of others.
6. Patient tends to perceive things in broad and generic ways (e.g., he/she misses details and/or glosses over inconsistencies).
7. Patient tends to think in "concrete" terms (i.e., he/she interprets things in overly literal ways and has only limited ability to appreciate metaphor, analogy or nuance. (SWAPP II-75)
8. Patient tends to pay little or no attention to what others think or feel; he/she seems to be functioning "on autopilot."
9. Patient has a tendency to think of his/her own choices or feelings as being "natural", self-evident or obvious.

Internally Focused

1. Patient tends to talk about other people in psychological terms – that is, as being motivated by feelings, thoughts, desires, and beliefs.
2. Patient tends to be easily affected by his/her beliefs about others' states of mind.
3. Patient seems to have difficulties understanding non-verbal indicators of others' states of mind (e.g., facial expressions, use of eye contact, body posture and movements, etc.).
4. Patient tends to be in touch with his/her own bodily states (e.g., physical sensations, emotions) and their influence on how he/she feels.
5. Patient is overly focused on what other people feel and think.
6. Patient recognizes that feelings such as guilt, happiness and depression influence how he/she feels.
7. Patient has rigid assumptions about the reasons for his/her or others' behaviour.

Externally Focused

1. Patient notices and responds to non-verbal cues (e.g., facial expressions, use of eye contact, body posture and movements, etc.) from other people.
2. Patient is able to understand and empathize with others' feelings.
3. Patient is overly sensitive to how others look or behave.
4. Patient tends to talk about or describe others mainly in "concrete" terms, such as their physical attributes (handsome, sexy, ugly) or in terms of their activities or social status.
5. Patient tends not to consider the fact that other people have feelings and thoughts (i.e., he/she appears to be blind" to others' states of mind).
6. Patient has a tendency to attribute how he/she feels to external or environmental factors (e.g., the weather, fate, other people's actions).

Cognitive Oriented

1. Patient tends to give thoughtful explanations of his own and/or other people's behaviours, thoughts and feelings.
2. Patient presents and discusses his/her experiences in a detached manner.
3. Patient tends to consider the advantages and disadvantages of a specific situation and take them into account when making decisions about the situation.
4. Patient tends to think in abstract and intellectualized terms even when considering matters of personal importance.
5. Patient tends to see him/herself as logical, rational and uninfluenced by emotion, and prefers to operate as if emotions were irrelevant or inconsequential.
6. Patient seems to easily grasp the meaning of mental states in him/herself and others, and focuses on the understanding and implications of these mental states.

7. Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest and/or fear.

Affect Oriented

1. Patient tends to explain his/her behaviour and the behaviour of other people in terms of emotions and feelings.
2. Patient tends to rely on his/her intuition or “gut feeling”.
3. Patient tends to be driven by his/her emotions without giving them much thought.
4. Patient tends to be easily overwhelmed by his/her own feelings or the apparent feelings of others.
5. Patient is in touch with his/her own feelings.
6. Patient tends to be empathic, sensitive and responsive to other people’s feelings and needs.

Self Oriented

1. Patient tends to attribute their own feelings or thoughts to others.
2. Patient shows interest in knowing his own emotions and motivations.
3. Patient tends to reflect spontaneously about the motives for his own actions and the reasons for his mental states.
4. Patient tends to describe his mental states with a correlated physical experience (e.g. I was shocked and got sick; when I am depressed I feel tired and want to sleep all day).
5. Patient is curious about the motives behind his actions and the reasons of his mental states.
6. When in difficult situations, or when having distressing images or thoughts in mind, patient is able to pause without reacting immediately to them.
7. Patient can perceive his emotions and thoughts without having to react to them.
8. Patient is aware of bodily changes when in presence of certain emotion or thought (e.g. blushing, breath speed, etc.)
9. Patient tends to get lost in his own thoughts or feelings.
10. Patient takes responsibility for his own actions.
11. Patient tends to express verbally, spontaneously, his own feelings and thoughts.
12. Patient is able to express his feelings and thoughts to other people.

Other Oriented

1. Patient tends to be easily influenced by other’s mental states.
2. Patient tends to focus on others mental states, actions or behaviour.
3. Even when talking about him/herself, patient tends to put other’s mental states as the prominent feature of their narrative.
4. Patient shows interest in knowing other people’s emotions and motivations.
5. Patient is curious about the reasons people behave as they do.
6. Patient finds it helpful to talk to other people about his worries.
7. Patient seems to recognise that others have their own minds with desires, thoughts and feelings and that they can be different from his own.
8. Patient tends to reflect spontaneously about the possible motives for other people’s actions and the reasons for their mental states.

9. Patient can perceive other people's emotions and thoughts without having to react to them.
10. Patient tends to express his vision of other's emotional experiences and thinking processes.
11. Patient manifests that he understands what he feels better when someone else describes their own feelings or thoughts in similar circumstances.
12. Patient tries to understand what other people feel and say based on his knowledge of them.
13. Patient is aware of the impact of his words in other people.
14. Patient is able to find an intended different meaning of a communication produced by someone else.
15. Patient is able to see things from the other's perspective.
16. When talking to other people, patient tends to talk more about their concerns or interests than the patient's.
17. Patient can intuitively tell how another person feels.

Mentalising

1. Patient is open to explore experiences and memories even if they are painful.
2. Patient recognises that his memories could be opaque or distorted due to his involvement on them.
3. Patient is able to switch from automatic to controlled mentalization spontaneously.
4. Patient acknowledges that people can have different emotions and thoughts, even contradictory ones, at the same time (including himself)
5. Patient shows a realistic predictability and controllability of emotions, thoughts and behaviour in himself and others.
6. Patient shows ability to be relaxed and flexible, can contemplate more than one perspective to the issue in discussion.
7. Patient can be playful with humour, it helps him/her relate to him/herself and/or others.
8. Patient recognises ownership of his own behaviour rather than believing that "it happens to one".
9. Patient shows curiosity about his and other people's perspectives, motivations and expectations.
10. Patient is aware of his/her own limitations.
11. When challenged Patient can be critical and constructive about his assumptions.
12. Patient understands that there is a difference in thinking and feeling related to development, and that processing those in adulthood varies from childhood and adolescence, for instance.
13. Patient recognises his tendency to modify his mental states in order to reduce negative affect. e.g. "he tends to put aside thoughts that will make him feel angry.
14. Patient finds easily the words to describe his/her feelings (this includes the identifying, naming and distinguishing amongst them).
15. When patient communicates affects he/she is aware of and has concern for others in the way they are expressed.

Non-Mentalising

1. Patient engages in excessively sparse or overdetailed explanations about thoughts or emotions in himself or others.
2. Patient finds it difficult to consider both one's own and other perspectives at the same time.
3. Patient shows a dominance of unreflective, naïve, distorted automatic assumptions about himself and others.
4. Patient shows an unjustified certainty about mental states of self and/or others.
5. Patient shows confusion or complete lack of prevision of mental states in him and others (e.g. tends to blaming or fault-finding).
6. Patient seems to be "stuck" in one point of view, not allowing conversation and his own train of thought to flow.8. Patient uses humour as a hurtful or distancing strategy.
7. Patient focuses on external social factors, such as the school, the council, the neighbours, etc., avoiding any responsibility or agency.
8. Patient manifests lack of interest in mental states, changing the subjects to avoid mentalising.
9. Patient is oblivious of his own limitations or has excessive preoccupation with rules, responsibilities, 'shoulds' and 'should nots' which are not reflected upon.
10. Patient tends to have a rigid adherence to his own perspective or is excessively flexible in changing perspectives.
11. Patient tends to focus on "empty", purely behavioural physical or personality descriptors ("tired", "lazy") or diagnoses.
12. Patient seems to present identity diffusion (has a distorted perception of himself and others, talks in all good and/or all bad terms, idealises or denigrates people, including himself, without question).
13. Beliefs and expectations, in the patient, seem clichéd or stereotypical, as if taken from storybooks or movies. (SWAPP II-83)
14. When asked or prompted by the therapist, patient becomes aggressive or manipulative, changes the subject, or acts otherwise non-cooperatively (I don't know).

Pre-Mentalising Modes

Teleological Mode

1. Patient tends to demand attention from others in a way that is verifiable for him/her, like phone calls or visits. These interactions serve more his/her personal needs/interests than the other's.
2. Patient tends to feel that he/she is not loved unless he/she gets constant reassurance of this.
3. When experiencing stress or psychical pain patient favours the use medication or sleep instead of reflecting on the causes for it.
4. Patient asks for more sessions with the therapist as a way to show that therapist cares for him/her.
5. Patient tends to take gestural cues and behaviour as "proofs" of other's intentions (e.g. yawning means that people is not interested).
6. Patient yearns constant physical contact.
7. When the session is getting to and end and the Therapist is trying to end the session patient tends to manifest that the therapist is not interested in him/her.

8. Patient tends to harm him/herself when in pain in order to avoid reflecting on what upset him/her.
9. Patient tends to focus on the understanding actions in terms of their physical as opposed to mental outcomes.
10. Patient cannot accept anything other than a modification in the realm of the physical as a true index of the intentions of the other.
11. For the patient, only action that has physical impact is felt to be able to alter mental state in both self and other.

Psychic Equivalence

1. Patient tends to remain in his position, even when thinking that other possibility could be better.
2. Patient tends to maintain ideas that seem to be implausible.
3. Patient tends to have rituals in order to reduce anxiety.
4. Patient is superstitious.
5. Patient seems to think in his/her present life as a re-enactment of his/her past.
6. Patient seems intolerant of alternative perspectives in situations he/she is involved in.
7. When feeling depressed, patient justifies his feeling by describing himself as bad and giving to that quality the responsibility for his actual emotional state.
8. Patient tends to experience psychical pain in an intensified way, usually accompanied with reproaches and blame.
9. Patient tends to assume and state that is always right.
10. Patient assumes that he knows what other people are thinking, including the therapist.
11. Patient tends to refer that nobody understands him/her.
12. Patient tends to think that he is more important than other people give him/her credit for.
13. Patient tends to idealise other people easily.

Pretend Mode

1. Patient tends to intellectualise or rationalise.
2. Patient gives minute descriptions of overwhelming situations maintaining a serene stance.
3. Patient has a flowing discourse but it lacks information about the patient him/herself.
4. Patient tends to talk about feelings without reflecting upon them.
5. Patient seems to lack stamina (vital energy).
6. Patient talks about thinking and feeling in a dissociated manner (what he expresses does not match what he says and vice versa).
7. Patient tends to employ most of his time rummaging about trivialities either related or not to him (e.g. How a person in his work looked at him, a movie he watched, the order of the universe).
8. The ideas that the patient has seem to be decoupled with what the patient do in his external life.
9. Patient tends to have feelings of emptiness or meaninglessness.

Appendix 3: Items Used to Do the Piloting, With the Median From the Expert Ratings

MENTALISING

Item/Expert's Rating	Median
Patient is open to exploring experiences and memories even if they are painful.	5
Patient recognises that his/her memories could be opaque or distorted due to his/her involvement in them	6
Patient acknowledges that people (including him/herself) can have different emotions and thoughts, even contradictory ones, at the same time	6
Patient shows a realistic understanding of the predictability and controllability of emotions, thoughts and behaviour in him/herself and others	6
Patient shows the ability to be relaxed and flexible, can contemplate more than one perspective in relation to the issue under discussion.	6
Patient can be playful with humour, it helps him/her relate to him/herself and/or others.	5
Patient shows curiosity about his/her and other people's perspectives, motivations and expectations.	6
When challenged, patient can be critical and constructive about his/her assumptions.	5
Patient understands that there is a difference in thinking and feeling related to development, and that processing thoughts and feelings in adulthood varies from that in childhood and adolescence, for instance.	5
Patient recognises his/her tendency to modify his/her mental states in order to reduce negative affect, e.g., he/she tends to put aside thoughts that will make him/her feel angry	5
Patient easily finds the words to describe his/her feelings (this includes identifying, naming and distinguishing among feelings**).**	5
When patient communicates his/her affects, he/she is aware of and has concern for others in the way they are expressed	6

PSYCHIC EQUIVALENCE

Item/Expert's Rating	Median
Patient sticks to an explanation of his/her behaviour, even when there are clear alternative explanations.	6
Patient seems intolerant of alternative perspectives in situations he/she is involved in.	7
When feeling depressed, patient justifies his/her feeling by describing him/herself as 'bad' and giving the responsibility for his actual emotional state to that quality.	5
Patient tends to assume and state that he/she is always right.	6
Patient assumes that he/she knows what other people, including the therapist, are thinking.	6.5
Patient tends to think that nobody understands him/her.	5

PRETEND MODE	Median
Patient tends to intellectualise or rationalise.	5
Patient tends to give minute descriptions of overwhelming situations.	5
Patient has a flowing discourse but it lacks information about the patient him/herself.	6
Patient tends to talk about feelings without reflecting upon them.	5
Patient talks about thinking and feeling in a dissociated manner (i.e., what he/she expresses does not match what he/she says, and vice versa).	7
Patient tends to use most of his/her time expounding on trivialities that may be either related or unrelated to him/her (e.g., how a person in his/her workplace looked at him/her; a movie he/she watched; the order of the universe).	5
The ideas that the patient has seem to be decoupled from what he/she does in his/her life.	6

TELEOLOGICAL MODE	Median
Patient tends to demand attention from others in a way that is verifiable for him/her, such as phone calls or visits. These interactions serve his/her personal needs/interests more than the other person's.	7
Patient tends to feel that he/she is not loved unless he/she is given constant reassurance of this.	5

When experiencing stress or psychic pain, patient favours the use of medication or sleep instead of reflecting on the causes.	5
Patient asks for more sessions with the therapist as a way to show that the therapist cares for him/her.	6
Patient tends to take gestural cues and behaviour as 'proof' of the other's intentions (e.g., yawning means that the other is bored and not interested in the patient).	7
When the session is coming to the end and the therapist is trying to end the session, patient tends to think that the therapist is not interested in him/her.	5
Patient tends to harm him/herself when in emotional/psychic pain in order to avoid reflecting on what upset him/her.	5
Patient tends to focus on understanding actions in terms of their physical as opposed to mental outcomes.	7

NON-MENTALISING

Item/Expert's Rating	**Median**
Patient engages in excessively sparse or overdetailed explanations about thoughts or emotions in him/herself or others.	6
Patient finds it difficult to consider both his/her own and others' perspectives at the same time.	5
Patient shows a dominance of unreflective, naive, distorted, and/or automatic assumptions about him/herself and others.	6.5
Patient shows an unjustified certainty about the mental states of him/herself and/or others.	7
Patient shows confusion or complete lack of understanding of mental states in him/herself and others (e.g., tends to engage in blaming or fault-finding).	7
Patient seems to be 'stuck' in one point of view, not allowing conversation and his/her own train of thought to flow.	6
When considering problems or conflictual situations, patient focuses on external social factors (e.g., his/her employer, the local council, the neighbours, etc.), avoiding any responsibility or agency.	6
Patient shows a lack of interest in mental states, changing the subject to avoid a focus on his/her own mental states and/or those of others.	6
Patient is oblivious of his/her own limitations or has excessive preoccupation with rules, responsibilities, 'shoulds' and 'should nots', which are not reflected upon.	5.5

Patient tends to either rigidly adhere to his/her own perspective or is excessively flexible in changing perspectives.	5.5
Patient tends to focus on 'empty', purely behavioural physical or personality descriptors (e.g., 'tired', 'lazy') or diagnoses (e.g., 'I have ADHD and that explains why I am so difficult').	7
Patients' beliefs and expectations seem clichéd or stereotypical, as if taken from storybooks or movies.	5

EXPLICIT/CONTROLLED

Item/Expert's Rating	**Median**
Patient tends to spontaneously consider different possibilities of what other people might be thinking or feeling.	5
Patient is able to reflect, after the event, on what he or she felt or thought.	6.5
Patient has the ability to correct his/her opinion about other people's thoughts or feelings when challenged by others.	6.5
Patient is capable of listening to and taking in information that is emotionally difficult (i.e., information that challenges cherished beliefs, perceptions, and self-perceptions).	6
Patient is capable of considering alternative viewpoints, even in topics that stir up strong feelings in him/her.	6.5
Patient reflects on what made him/her act in a certain way in a given situation.	6
Patient keeps track of his/her own thoughts and feelings.	6
Patient is introspective – that is, he/she allows him/herself to explore his/her inner thoughts and feelings.	5

IMPLICIT/AUTOMATIC

Item/Expert's Rating	**Median**
Patient tends to quickly come up with explanations about his/her own behaviour and/or the behaviour of other people without giving much thought to it.	6
Patient becomes easily stressed and then readily loses the capacity to reflect on his/her mental states.	5
Patient seems unable or unwilling to modify his/her behaviour in response to feedback.	5
Patient tends to respond to others in stereotypical ways, without giving much consideration to the reasons why others behave in a particular way.	6.5
Patient tends to easily 'jump to conclusions' about the mental states of others.	6.5

Patient tends to perceive things in broad and generic ways (e.g., he/she misses details and/or glosses over inconsistencies).	4.5
Patient tends to pay little or no attention to what others think or feel; he/she seems to be functioning 'on autopilot'.	6.5
Patient has a tendency to think of his/her own choices or feelings as being 'natural', self-evident or obvious.	5

INTERNALLY FOCUSED

Item/Expert's Rating	**Median**
Patient tends to talk about other people in psychological terms – that is, as being motivated by feelings, thoughts, desires, and beliefs.	7
Patient tends to be easily affected by his/her beliefs about others' states of mind.	3
Patient seems to have difficulties understanding non-verbal indicators of others' states of mind (e.g., facial expressions, use of eye contact, body posture and movements, etc.).	3
Patient tends to be in touch with his/her own bodily states (e.g., physical sensations, emotions) and their influence on how he/she feels.	7
Patient recognises that feelings such as guilt, happiness and depression influence how he/she feels.	6

EXTERNALLY FOCUSED	**Median**
Patient notices and responds to non-verbal cues (e.g., facial expressions, use of eye contact, body posture and movements, etc.) from other people	7
Patient is able to understand and empathise with others' feelings.	6
Patient is overly sensitive to how others look or behave.	4
Patient tends to talk about or describe others mainly in 'concrete' terms, such as their physical attributes (handsome, sexy, ugly) or in terms of their activities or social status.	4
Patient has a tendency to attribute how he/she feels to external or environmental factors (e.g., the weather, fate, other people's actions).	4

COGNITIVE

Item/Expert's Rating	**Median**

Patient tends to give thoughtful explanations of his/her own and/or other people's behaviours, thoughts and feelings.	7
Patient tends to consider the advantages and disadvantages of a specific situation and take them into account when making decisions about the situation.	4
Patient seems to easily grasp the meaning of mental states in him/herself and others, and focuses on the understanding and implications of these mental states.	7
Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest.	5

AFFECTIVE

Item/Expert's Rating	**Median**
Patient tends to explain his/her behaviour and the behaviour of other people in terms of emotions and feelings.	6
Patient tends to be easily overwhelmed by his/her own feelings or the apparent feelings of others.	5
Patient is in touch with his/her own feelings.	6
Patient tends to be empathic, sensitive and responsive to other people's feelings and needs.	7

SELF ORIENTED

Item/Expert's Rating	**Median**
Patient shows interest in knowing his/her own emotions and motivations.	6
Patient tends to reflect spontaneously about the motives for his/her own actions and the reasons for his/her mental states.	7
Patient tends to describe his/her mental states with a correlated physical experience (e.g., 'I was shocked and got sick'; 'When I am depressed I feel tired and want to sleep all day').	5
Patient is curious about the motives behind his/her actions and the reasons for his/her mental states.	7
When in difficult situations, or when having distressing images or thoughts in mind, patient is able to pause without reacting immediately to them.	5
Patient can perceive his/her emotions and thoughts without having to react to them.	5
Patient is aware of bodily changes when experiencing certain emotions or thoughts (e.g. blushing, speed of breathing, etc.)	5

Patient takes responsibility for his/her own actions.	5
Patient tends to spontaneously express verbally his/her own feelings and thoughts.	6
Patient is able to express his/her feelings and thoughts to other people.	5

OTHER ORIENTED

Item/Expert's Rating	**Median**
Patient tends to focus on others' mental states, actions or behaviour.	5
Even when talking about him/herself, patient tends to put others' mental states as the prominent feature of the narrative.	6
Patient shows interest in knowing other people's emotions and motivations.	6
Patient is curious about the reasons people behave as they do.	6
Patient finds it helpful to talk to other people about his/her worries.	5
Patient seems to recognise that others have their own minds with desires, thoughts and feelings, and that these can be different from his/her own.	7
Patient tends to reflect spontaneously about the possible motives for other people's actions and the reasons for their mental states.	7
Patient can perceive other people's emotions and thoughts without having to react to them.	5
Patient tends to express his/her vision of others' emotional experiences and thinking processes.	5
Patient states that he/she understands what he/she feels better when someone else describes their own feelings or thoughts in similar circumstances.	5
Patient tries to understand what other people feel and say based on his/her knowledge of them.	5
Patient is aware of the impact of his/her words on other people.	6
Patient is able to see things from the other's perspective.	6
When talking to other people, patient tends to talk more about their concerns or interests than his/her own.	5
Patient can intuitively tell how another person feels.	5

Appendix 4: MQS "Manual"

Mentalising

1. **Patient is open to exploring experiences and memories even if they are painful.**
2. **Patient acknowledges that people (including him/herself) can have somewhat incompatible emotions and thoughts, even contradictory ones, at the same time.**
3. **Patient shows realistic expectations and accurately anticipates the extent to which their own and others' emotions, thoughts and behaviour may be adequately controlled or regulated under challenging circumstances.**
4. **Patient shows the ability to be relaxed and flexible in relation to the views held by others and can readily move between perspectives adopted about the issue under discussion even when they have fairly firm views of their own.**
5. **Patient shows genuine curiosity about his/her and other people's perspectives, motivations and expectations.**
6. **Patient understands that there is a difference in thinking and feeling related to development, and that processing thoughts and feelings in adulthood varies depending on current psychological states including changes that occur between childhood and adolescence.**
   Patient is able to judge current situations in the light of a developmental understanding of personal or others' experience. There has to be an explicit mental association between a developmental stage and a change in the understanding of it. i.e. "I don't blame my mother for how she treated me; her own mother was abusive and I suppose that she could never possibly understand the impact of her withdrawal from me. It still hurts, but I understand it".
7. **Patient easily finds the words to describe his/her feelings (this includes identifying, naming and distinguishing among feelings).**
8. **When patient communicates his/her affects, he/she is aware of and has concern for others in the way they are expressed**
   This includes the relationship with the therapist and the recounting of external situations.

Psychic Equivalence

9. **Patient sticks to an explanation of his/her behaviour, even when there are clear alternative explanations.**
10. **Patient seems intolerant of alternative perspectives on situations he/she is involved in.**
    Even when challenged by the therapist patient seems unwilling to take into consideration what they are saying; or other people in their everyday life. Patient seems to stick rigidly to his own explanation or experience of an event.

11. **Patient assumes that he/she knows what other people, including the therapist, are likely to be thinking.**
    Patient does not offer explanations in terms of plausible mental states, but rather seems to make generalisations such as "what else could had he been thinking, all men are the same", or just jumps into conclusions without exploring the possible causes for the event in questions.
12. **Patient shows an unjustified certainty about the mental states of him/herself and/or others.**
13. **Patient's language is dominated by statements of absolutes (always, never, totally, absolutely, etc.)**

Pretend Mode

14. **Patient has a flowing discourse but it lacks information about the patient him/herself.**
15. **Patient tends to use most of his/her time reporting on issues and events that appear unimportant that fill space in the session (e.g., how a person in his/her workplace looked at him/her; a movie he/she watched; the order of the universe).**
16. **There is a distinct loss of connection between the communication of patient and therapist.**
    Both participants seem to be talking about different things and the conversation seems to not have a point or focus.
17. **The patient's narrative is confusing and quite difficult to follow.**
18. **There is a great deal of jargon in the patient's narrative reflecting the language of therapy rather than the patient's experience.**

Teleological Mode

19. **Patient tends to demand attention from others in a way that is verifiable for him/her, such as phone calls or visits. These interactions serve his/her personal needs/interests more than the other person's.**
20. **Patient asks for constant reassurance in relation to their thoughts and feelings being acceptable and/or being generally liked as a person.**
21. **When experiencing stress and/or distress, patient favours the use of activity (e.g. exercise), inactivity (e.g. sleep) or medication rather than engaging with possible psychological causes.**
22. **Patient exclusively focuses on the significance of actions by others in terms of their practical implications rather than what they imply about the patient's or others' mental states.**

General Ineffective Mentalising

23. **Patient's narrative is dominated by non-reflective, naive, seriously distorted, and/or unwarranted assumptions about thoughts and feelings of others.**
24. **Patient seems to be 'stuck' in one point of view, is repetitive and his/her train of thought does not seem to flow freely.**
25. **When considering the reasons for problems or difficult situations, patient focuses on external social factors (e.g., his/her employer, the local council, the neighbours, etc.), avoiding thinking about reasons in terms of people's feelings, thoughts or wishes.**
26. **Patient has limited insight into his/her own limitations.**
    Patient seem to be disconnected with his/her own mental states, there is no real acknowledgement of them, giving the impression of a hollow or empty discourse.
27. **Patient focuses on stereotypes or general 'categories or superficial descriptions when explaining people's actions (e.g. descriptors such as 'tired', 'lazy' or diagnoses such as, 'I have ADHD and that explains why I am so difficult').**
28. **Patients' beliefs and expectations seem clichéd or 'canned', as if taken from storybooks or movies.**

Controlled

29. **Patient is able to reflect, after the event, on what he or she felt or thought.**
    This includes doing it spontaneously and when suggested by the therapist.
30. **Patient has the ability to correct his/her opinion about other people's thoughts or feelings when challenged by others.**
    Not just the therapist, but also people from his/her everyday life.
31. **Patient is capable of listening and/or elaborate to and taking in information that is emotionally difficult (i.e., information that challenges cherished beliefs, perceptions, and self-perceptions).**
32. **Patient is capable of considering alternative viewpoints, even in topics that stir up strong feelings in him/her.**
33. **Patient reflects on what made him/her act in a certain way in a given situation.**
34. **Patient keeps track of his/her own thoughts and feelings.**
    Patient names and distinguishes the mental states and thoughts that they are experiencing and is able to link them with events in their everyday life.
35. **Patient is introspective – that is, he/she allows him/herself to explore his/her inner thoughts and feelings.**
    Either prompted by the therapist or spontaneously, patient is able to question their assumptions and reflect upon them.

Automatic

36. **Patient tends to quickly come up with explanations about his/her own behaviour and/or the behaviour of other people without giving much thought to it.**
37. **Patient becomes easily stressed and then readily loses the capacity to reflect on his/her mental states.**
    This can be rated from the narrative of patient's life or by what happens in the clinical setting
38. **Patient seems unable or unwilling to modify his/her behaviour in response to feedback.**
    Either by the clinician or by other people in the patient's life, e.g. "T: you seem to always have an answer for everything. P: No, I don't".
39. **Patient tends to respond to others in stereotypical ways, without giving much consideration to the reasons why others behave in a particular way.**
    Patient reacts either emotionally or behaviourally in a concrete and non-flexible manner to the events around them. Such as changing the topic or leaving the room when confronted with a specific topic. In and outside therapy.
40. **Patient tends to easily 'jump to conclusions' about the mental states of others.**
    Even if after giving it a thought they acknowledge that they can be wrong. This Item measures the immediacy of the mentalising process not the accuracy of it.
41. **Patient has a tendency to think of his/her own choices or feelings as being 'natural', self-evident or obvious.**
    The choices and responses that the patient mentions seem to be automatic, generic and non-reflective. i.e. when a mother is challenged about their mixed feelings for her child she would say "a mother always loves their children". Patient "naturalises" his/her mental states and think that they should be accepted.

Internally Focused

42. **Patient tends to talk about other people in psychological terms – that is, as being motivated by feelings, thoughts, desires, and beliefs.**
43. **Patient tends to be easily affected by his/her beliefs about others' states of mind.**
    Patient changes easily his states of mind and/or behaviour in relation to what other people think or feel about the patient.
44. **Patient seems to have difficulties understanding non-verbal indicators of others' states of mind (e.g., facial expressions, use of eye contact, body posture and movements, etc.).**
45. **Patient tends to be in touch with his/her own bodily states (e.g., physical sensations, emotions) and their influence on how he/she feels.**

46. **Patient recognises that feelings such as guilt, happiness and depression influence their mental states and their perception of mental states in others.**

Externally Focused

47. **Patient notices and responds to non-verbal cues (e.g., facial expressions, use of eye contact, body posture and movements, etc.) from other people**
48. **Patient is able to understand and empathise with others' feelings.**
49. **Patient is overly sensitive to how others look or behave.**
    Externally, not necessarily focusing on mental states.
50. **Patient tends to talk about or describe others mainly in 'concrete' terms, such as their physical attributes (handsome, sexy, ugly) or in terms of their activities or social status.**
51. **Patient has a tendency to attribute how he/she feels to external or environmental factors (e.g., the weather, fate, the traffic, other's behaviour).**
    E.g. "I have been feeling like this since she looked at me like that".

Cognitive

52. **Patient tends to give thoughtful explanations of his/her own and/or other people's behaviours, thoughts and feelings.**
53. **Patient tends to consider the advantages and disadvantages of a specific situation and take them into account when making decisions about the situation.**
54. **Patient seems to easily grasp the meaning of mental states in him/herself and others, and focuses on the understanding and implications of these mental states.**
55. **Patient is able to elaborate his/her own thought processes related to issues that capture his/her interest.**

Affective

56. **Patient tends to explain his/her behaviour and the behaviour of other people in terms of emotions and feelings.**
    Patient names feelings and emotions on which other people's behaviour is based upon.
57. **Patient tends to be easily overwhelmed by his/her own feelings or the apparent feelings of others.**

58. **Patient is in touch with his/her own feelings.**
59. **Patient tends to be empathic, sensitive and responsive to other people's feelings and needs.**

Self-Oriented

60. **Patient tends to reflect spontaneously about the motives for his/her own actions and the reasons for his/her mental states.**
61. **Patient tends to describe his/her mental states with a correlated physical experience (e.g., 'I was shocked and got sick'; 'When I am depressed I feel tired and want to sleep all day').**
62. **Patient is curious about the motives behind his/her actions and the reasons for his/her mental states.**
63 **Patient is aware of bodily changes when experiencing certain emotions or thoughts (e.g. blushing, speed of breathing, etc.)**
64. **Patient takes responsibility for his/her own actions.**
65. **Patient tends to spontaneously express verbally his/her own feelings and thoughts.**

Other Oriented

66. **Patient tends to focus on others' mental states, actions or behaviour.**
    This does not mean that the majority of the session is focused on the others, but that when speaking about others tends to do it.
67. **Even when talking about him/herself, patient tends to put others' mental states as the prominent feature of the narrative.**
    Mental states and not behaviour.
68. **Patient tends to reflect spontaneously about the possible motives for other people's actions and the reasons for their mental states.**
69. **Patient can perceive other people's emotions and thoughts without having to react to them.**
70. **Patient tends to express his/her vision of others' emotional experiences and thinking processes.**
71. **When talking to other people, patient tends to talk more about their concerns or interests than his/her own.** (Not to the therapist but to other people)

Appendix 5: Calculation of Factor Arrays and Z-Scores for the Three-Factor Solution at T1

Items	Factor 1 z-score	Factor 1 array	Factor 2 z-score	Factor 2 array	Factor 3 z-score	Factor 3 array
1	1.703	4	0.189	2	-0.629	1
2	0.024	2	-0.960	1	-0.266	2
3	0.772	3	-0.728	1	-0.913	1
4	0.084	2	-1.221	1	-0.678	1
5	1.321	4	-0.325	2	-0.266	2
6	-0.327	2	-0.895	1	-0.865	1
7	1.252	4	0.363	2	-0.098	2
8	-0.057	2	-1.328	1	-0.439	1
9	-1.100	1	0.320	2	-0.059	2
10	-1.025	1	1.455	5	-0.112	2
11	-1.129	1	-0.667	1	-0.693	1
12	-1.106	1	-0.065	2	-0.394	2
13	-1.111	1	0.812	3	-0.287	2
14	-1.085	1	-0.086	2	1.954	5
15	-1.104	1	-0.920	1	2.018	5
16	-1.133	1	-1.328	1	-1.230	1
17	-1.101	1	-1.328	1	-1.362	1
18	-0.713	1	-1.038	1	-0.178	2
19	-0.849	1	-0.246	2	-0.409	2
20	-0.686	1	0.041	2	-0.532	1
21	-0.638	1	1.298	4	-0.846	1
22	-0.712	1	1.222	4	-0.362	2
23	-1.102	1	1.667	5	-0.421	1

24	-1.020	1	1.312	4	2.473	5
25	-0.635	1	1.503	5	-0.506	1
26	-1.063	1	1.315	4	2.595	5
27	-0.812	1	0.056	2	-1.230	1
28	-1.039	1	-0.378	2	-1.362	1
29	1.816	5	1.047	3	0.244	3
30	-0.439	2	-1.249	1	0.165	3
31	0.763	3	-0.243	2	-0.038	2
32	0.769	3	-0.800	1	0.271	3
33	1.773	5	0.702	3	1.021	4
34	1.225	4	0.560	3	-0.123	2
35	2.472	5	0.154	2	0.094	3
36	0.390	3	0.905	3	0.474	3
37	-0.585	2	2.703	5	1.660	4
38	-1.023	1	0.999	3	2.306	5
39	-0.652	1	1.139	4	1.246	4
40	-0.109	2	0.274	2	0.741	3
41	-1.127	1	0.730	3	0.989	3
42	0.499	3	-0.650	1	0.096	3
43	-0.073	2	0.953	3	1.673	4
44	-1.130	1	-1.135	1	-1.362	1
45	-0.228	2	-0.652	1	-1.080	1
46	0.214	2	0.591	3	-0.383	2
47	-0.712	1	-1.328	1	-1.045	1
48	0.470	3	-1.171	1	-0.397	2
49	0.133	2	1.132	4	1.572	4
50	-0.962	1	-0.524	1	-1.080	1
51	-0.643	1	0.733	3	0.044	2
52	1.239	4	-0.322	2	-0.521	1

53	0.564	3	-0.461	1	-1.163	1
54	1.117	3	-0.743	1	-0.453	1
55	2.159	5	0.263	2	1.731	4
56	0.825	3	0.386	3	-0.440	1
57	-0.270	2	2.555	5	1.192	4
58	1.165	4	-0.428	1	0.036	2
59	0.380	3	-1.249	1	-0.555	1
60	1.690	4	-0.127	2	0.230	3
61	-0.166	2	1.048	4	-1.146	1
62	1.591	4	0.384	3	0.055	3
63	-0.778	1	-0.426	2	-1.230	1
64	1.043	3	-0.396	2	0.977	3
65	1.887	5	1.201	4	-0.322	2
66	0.146	2	-1.093	1	1.006	4
67	-0.595	2	-1.024	1	0.645	3
68	0.243	2	-0.946	1	-0.465	1
69	-0.358	2	-1.105	1	-0.519	1
70	0.262	3	-1.102	1	0.028	2
71	-0.592	2	-1.328	1	-1.080	1

Appendix 6: Calculation of Factor Arrays and Z-scores for the Three-Factor Solution at T2

Items	Factor 1 z-score	Factor 1 array	Factor 2 z-score	Factor 2 array	Factor 3 z-score	Factor 3 array
1	1.101	4	-0.216	2	0.831	3
2	0.736	3	-0.681	1	0.112	2
3	0.445	3	-0.998	1	-0.187	2
4	0.727	3	-0.985	1	0.580	3
5	0.893	3	-0.568	1	0.144	2
6	-0.458	2	-1.323	1	-0.671	1
7	1.377	4	1.458	4	0.415	3
8	-0.186	2	-1.054	1	1.145	4
9	-1.031	1	0.889	3	-1.071	1
10	-1.126	1	1.564	5	-0.906	1
11	-1.038	1	-0.553	1	-1.071	1
12	-1.088	1	-0.150	2	-1.071	1
13	-1.064	1	1.502	4	-0.688	1
14	-0.566	1	-0.692	1	-0.688	1
15	-0.720	1	-0.821	1	-0.906	1
16	-0.978	1	-1.141	1	-1.071	1
17	-1.126	1	-0.921	1	-1.071	1
18	-0.573	1	-1.141	1	-1.071	1
19	-0.895	1	0.990	4	-0.432	2
20	-0.684	1	-0.345	2	-0.533	2
21	-0.632	1	-0.143	2	-0.970	1
22	-0.900	1	1.150	4	-0.970	1
23	-1.095	1	0.496	3	-1.071	1
24	-0.547	2	2.144	5	-0.906	1

25	-0.659	1	0.848	3	-1.071	1
26	-0.816	1	0.540	3	-0.523	2
27	-1.014	1	-0.952	1	-1.071	1
28	-1.049	1	-0.328	2	-0.970	1
29	1.701	4	1.012	4	1.380	4
30	-0.241	2	-1.103	1	0.346	3
31	0.514	3	-0.232	2	0.261	2
32	1.474	4	-1.123	1	0.431	3
33	1.842	5	0.662	3	1.434	4
34	1.798	5	0.311	2	1.135	3
35	2.165	5	0.026	2	1.333	4
36	0.931	3	0.819	3	0.633	3
37	-0.492	2	2.455	5	-0.805	1
38	-0.939	1	1.523	5	-0.688	1
39	-1.060	1	1.429	4	-1.071	1
40	-0.302	2	-0.010	2	0.048	2
41	-1.126	1	0.043	2	-1.071	1
42	0.108	3	-0.519	2	2.131	5
43	-0.397	2	1.125	4	0.015	2
44	-1.126	1	-1.323	1	-1.071	1
45	-0.016	2	-0.913	1	-0.735	1
46	1.022	3	0.988	3	-0.021	2
47	-1.005	1	-1.172	1	-1.071	1
48	0.061	2	-1.014	1	1.246	4
49	-0.176	2	0.860	3	0.334	3
50	-1.065	1	-0.937	1	-1.071	1
51	-0.605	1	0.787	3	-0.634	2
52	0.755	3	-0.143	2	0.698	3
53	0.893	3	-0.028	2	-0.123	2

54	0.838	3	-0.620	1	0.149	2
55	2.070	5	0.885	3	1.901	5
56	0.813	3	0.072	2	1.098	3
57	-0.217	2	2.515	5	-0.422	2
58	1.395	4	0.114	2	-0.086	2
59	-0.104	2	-0.765	1	1.412	4
60	1.790	4	0.511	3	0.698	3
61	-0.029	2	-0.180	2	-0.869	1
62	1.552	4	-0.097	2	-0.021	2
63	-0.352	2	-0.985	1	-1.071	1
64	1.153	4	0.566	3	-0.086	2
65	2.007	5	1.476	4	1.518	4
66	-0.404	2	-0.386	2	2.265	5
67	-0.927	1	-1.141	1	1.566	4
68	-0.048	2	-0.921	1	1.780	5
69	-0.454	2	-1.232	1	0.196	2
70	0.016	2	-0.765	1	2.131	5
71	-0.851	1	-1.141	1	0.548	3