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What's on your mind?

A Guide for Mentalization Assessment in Adults

Monika Olga Jańczak

Poznań 2021

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wydawnictwo

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Preface

The theory of mentalization, put forward by Fonagy (1996) over twenty years ago, indubitably remains one of the most dynamic concepts to have developed in clinical psychology in recent years. Mentalization is measured in a wide range of contexts, particularly in relation to pathogenesis and pathomechanism of mental disorders (including personality disorders, mood disorders, eating disorders, and developmental disorders)—but also in research into the effectiveness of psychotherapy, especially regarding mentalization-based therapy and psychodynamic therapies for patients with severe personality pathology (Bateman et al., 2019; Diamond et al., 2014; Kernberg et al., 2008). Recently, level of mentalizing proved to be related both to Criterion A and B of the DSM 5 Alternative Model of Personality Disorders (Ball Cooper et al., 2021; Rishede et al., 2021; Zettl et al., 2020). Furthermore, therapists' mentalizing abilities seem to have a very significant effect on the way in which the psychotherapeutic process unfolds (Shaw et al., 2019). Mentalization is also studied in the developmental context, with the aim to determine the relationships between the level of parental mentalization and various indicators of the child's functioning (Anis et al., 2020; Law et al., 2021). Likewise, the area of mentalizing in healthy individuals is attracting growing attention lately (Colle et al., 2020; Schwarzer et al., 2021). Undoubtedly, the assessment of this important and commonly used construct elicits the interest of researchers universally.

Since I have been personally involved in investigating the level of mentalization in a research context for over ten years, I have always been interested in examining the concomitant controversies and dilemmas. This book is a natural continuance of a 2016 chapter I wrote that was titled: "Methods of Measuring Mentalization" (Marszał, 2016). Little testifies as much to the increasing popularity of mentalization research as the sea change that has occurred in research measures over the past few years. There were very few instruments as recently as five years ago, and it was not entirely clear what is that they actually measured: their accuracy and reliability had not been established. Back then, we researchers were happy to do the best we could with what we had. Access to measures was a particular challenge, especially in validated versions other than English.

However, currently, the situation is completely different. With many more measures, we now find ourselves confronted with a completely different challenge: how can we choose the best ones, and what criterion should we use? Is the best measure the one that has been discussed in the literature for a long time and is considered the gold standard for measuring mentalizing? Or perhaps we want the one with the best psychometric properties, or one that can be administered rapidly? Or perhaps it is important for us to have a measure in a validated Polish or another language version? Perhaps it should measure mentalization most accurately in several dimensions? Needless to say, there is no one right answer to all these questions. The solution to this dilemma is a thorough analysis of the available measures with a view to helping researchers select the one that best meets the criteria they consider important. This book is designed to help you make that decision. I would like to explore and explicate the most pertinent issues concerning mentalization assessment and to systematically review the available measures. It is my earnest hope that researchers considering a mentalization measure will find here a fairly comprehensive list of tools, with a short but concise commentary, an overview of the research on each, and practical guidelines on its use.

What Is This Book About?

The theory of mentalization and all its accompanying applications have been elucidated elsewhere (Bateman et al., 2019; Fonagy & Luyten, 2009). Instead of explicating these details here, I would refer the reader to those exhaustive studies. In this book, I will explore the theoretical and empirical aspects relevant to the assessment of mentalizing. In the first part, I present the problems and challenges that researchers are confronted with when planning to measure mentalization. The second part presents an overview of research tools for measuring mentalization, describing how they are administered, how the results are calculated and interpreted, their psychometric properties, and their research applications. When deciding what to include in this second part, I had to make some difficult decisions about the measures to present

and the ones to omit. As I have deliberately confined myself to clinical measures of mentalization that are currently used in research into the pathomechanisms of mental disorders in adults, tools traditionally considered measures of theory of mind, which are mainly used in autism research, have been excluded in this book. Nor have I included measures of mentalization in children. Moreover, I also do not present methods of measuring mentalization in adults in nonclinical contexts unrelated to the pathomechanism and pathogenesis of mental disorders, such as parental mentalization and mentalization in therapists. Furthermore, although some of these measures can indeed be used in the context of individual clinical diagnosis, I describe them here only in the research context. I have presented the detailed selection criteria used in my study in the introduction to the second part of the book (p. 39). It is my earnest hope that readers will find this book valuable and useful.

Monika Olga Jańczak

PART 1:
MEASURING MENTALIZATION:
ISSUES AND CHALLENGES

Introduction

From the outset of research into mentalization, many authors have indicated that the topic entails specific challenges associated with the methods used (Choi-Kain & Gunderson, 2008; Luyten et al., 2011, 2019). These challenges curtail the study of mentalization, especially in smaller research centers and when dealing with large sample sizes. The problem is exacerbated by the lack of clarity of the definition of the concept, and by the various controversies over the nuances of operationalizing mentalization (Choi-Kain & Gunderson, 2008; Luyten et al., 2011; Jańczak, 2018b). The first ten to fifteen or so years after the formulation of Fonagy's model were marked by discussions on the semantic field of mentalization and by efforts to correctly verify the theoretical assumptions postulated in the literature, mainly on the mentalization deficits among borderline patients (Bouchard et al., 2008; Choi-Kain & Gunderson, 2008). Despite the passage of years, several dilemmas have remained unresolved and have gone on to become a permanent part of reflections on how to adequately measure mentalizing ability. Researchers who wish to study mentalization are thus still likely to fall prey to several traps. I would be outlining the deal most important of these traps in this part of the book.

The first problem concerns the lack of clarity in the definition of mentalization, and its position relative to other similar constructs. This problem is reflected in the difficulty of answering the question 'What are we actually measuring?'. As demonstrated by Dimitrijević et al. (2018), a sensible solution to this problem seems to involve designing measures based on mentalization theory, and then checking their theoretical validity by placing the measured construct among other measures of different but similar functions. Meanwhile, an opposing tendency is also visible: measuring mentalization with tools originally intended for measuring other constructs which tends to blur them instead of sharp-

ening the definition criteria (Dimitrijević et al., 2018). In a handbook on mentalization-based therapy, Luyten twice undertook the challenge of collecting and briefly analyzing all the available measures of mentalization, or some of its aspects (Luyten et al., 2011, 2019). This was certainly a difficult and ambitious task, although one that I believe fits with the narrative of the ambiguity surrounding the definition and of methods of operationalizing this concept. Luyten presented 66 measures of mentalization in many different contexts (adults, teenagers, children, parents, therapists); the titles of these measures contained the word "mentalization" in only six cases, and the phrase "reflective functioning" in another fourteen. The remaining measures relate to constructs such as empathy, mindfulness, intentionality, body consciousness, emotional recognition, imagination, and various aspects of the theory of mind. Although these concepts are similar to mentalization, there are underlying differences between them, which is why they must be duly addressed upon being measured (Choi-Kain & Gunderson, 2008; Dimitrijević et al., 2018; Górska & Marszał, 2014). This list also includes measures that are not used in mentalization research. Therefore, a researcher interested in the study of mentalization must deal with a multitude of imperfect diagnostic tools. I have attempted to address this problem by selecting measures on the basis of clear criteria (p. 39). In the first part of the book, I also discuss the similarities and differences between mentalization and the construct that is most closely related to it—the theory of mind (Chapter 1).

In the following chapters, I first present a brief analysis of two contexts for measuring mentalization: in the context of emotional arousal (online mentalizing) and in a neutral context (offline mentalizing; Chapter 2). Then, I discuss the different dimensions of mentalization in relation to their assessment (Chapter 3). Fortunately, there is an increasing number of tools that measure mentalization in ways that are not merely unidimensional. Some pending work does remain in terms of designing measures of mentalization disorders at the two extremes of reduced ability to mentalize (hypomentalizing) and excessive but erroneous mentalizing, accompanied by unjustified nebulousness surrounding the accuracy of the recognized mental states (hypermentalizing). I elaborate on this issue in Chapter 4. Another dilemma faced by the researcher when measuring mentalization is how to decide whether

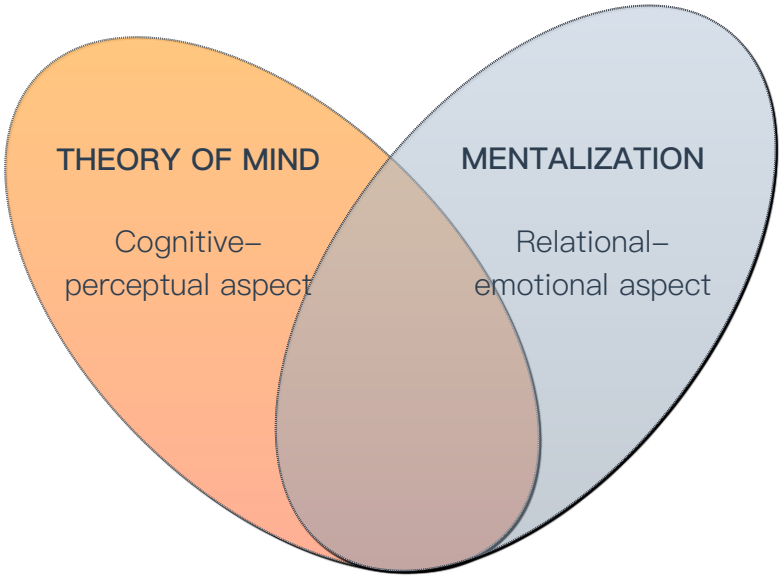
it is worth using a method given to the costs incurred, in terms of time, money, and effort. In Chapter 5, I elucidate different groups of methods with respect to the economics of measurement. This chapter also reflects on the perspective from which conclusions are drawn about mentalizing—whether from the perspective of the study participant (patient), that of an external independent observer (such as the interview rater), or that of the therapist. Each of these perspectives leads to specific consequences. I provide summary guidelines for the correct process of diagnosing mentalization (How can it be measured well? Chapter 6) at the end of this section and succinctly outline the challenges and directions of future research and work related to measuring mentalization (Chapter 7).

1. Mentalization and Theory of Mind: Similar but Different[1]

Two ways of understanding the relationship between mentalization and theory of mind can be seen in the literature on inferring mental states in the context of psychopathology: on the one hand, some studies demonstrate significant differences between the concepts of the theory of mind and mentalization (Fossati et al., 2018; Górska & Marszał, 2014), while others treat them as synonyms (see e.g., Sharp et al., 2011). This is an issue that certainly complicates the interpretation of research results and contributes to the ambiguity with regard to the tools used for this purpose. As has been shown elsewhere (Górska & Marszał, 2014; Sharp & Vanwoerden, 2015), there are reasons to differentiate between the theory of mind (which arose from the cognitive tradition) and the clinically and psychodynamically embedded multidimensional, complex concept of mentalization. Although both the theory and mentalization involve "explaining the behavior of others in terms of their thoughts, feelings or intentions", current research suggests that the two seem to differ profoundly, relating to different aspects of social cognition.

[1] This chapter, in a modified form, was published in: Jańczak, M. (2018). Mentalization in borderline individuals: An attempt to integrate contradictory research results. Current Issues in Personality Psychology, 6(4), 266–278. https://doi.org/10.5114/cipp.2018.80196

Figure 1
Relations Between Mentalization and Theory of Mind



Mentalization involves imaginative mental activity that allows one's own and other people's behavior to be treated in terms of intentional needs, desires, beliefs, goals, and feelings (Bateman et al., 2019; Fonagy & Luyten, 2009). This is related to a basic ability to differentiate between internal and external reality and to create representations of one's own and other people's mental states. On the one hand, it gives meaning to behaviors (the interpersonal context); on the other hand, it supports self-regulatory processes, such as emotional regulation and the formation of a coherent image of the self (the intrapersonal context; Bateman et al., 2019). From a developmental point of view, this is associated with secure attachment, emotional regulation, and parental mentalization of a child's mind (Ensink et al., 2016; Meins et al., 2002; Sharp & Fonagy, 2008). Mentalization and emotion regulation both develop in the context of secure attachment, mainly due to the caregiver's understanding and processing of the child's emotional states in the context of the dyadic regulatory system. In this approach, mentalization is described as a "hot", dynamic function; re-

vealed in a "here and now" relationship, it is strongly associated with the emotional functioning of the individual. Various studies have shown a relationship between mentalization understood in this way and emotional disorders, in particular borderline personality disorder (Fischer-Kern et al., 2010a; Ha et al., 2013; Müller et al., 2006a). The regulatory function of mentalization is particularly important, as demonstrated by research into the relationship between mentalization and emotional dysregulation (Fossati et al., 2017; Marszał & Górska, 2015; Marszał & Jańczak, 2017; Sharp et al., 2011). In this approach, mentalization is responsible for both navigation in the social world and the ability to self-regulate; it relates as much to one's own mental states as to others', given that both processes are closely associated with each other.

Table 1
Differences Between Mentalization and Theory of Mind

	Mentalization	Theory of Mind
Theoretical background	Attachment theory, object relations theory	Developmental psychology and cognitive psychology
Domain	The self and others	Others
Relational aspects	a context-specific, dynamic, here-and-now mentalization exploring functioning in close relationships	Neutral context, mentalizing about an abstract character
Emotional arousal	Mentalizing in the context of emotional arousal, and activation of the attachment system	Does not imply personal emotional involvement in the story of someone the mind is being recognized (no attachment system activation)

	Mentalization	Theory of Mind
Processing emotional experience	More or less mature defenses and/or reflection are triggered; their mutual interaction is revealed in the level of mentalization	Considered a deficit or no deficit in particular functions
Regulatory functions in relation to emotions	Presupposes the regulation and transformation of one's own emotions due to the understanding of someone's intentions, feelings, and beliefs	Not related to the function of regulating emotions
Genesis	Arises in the context of the attachment relationship; mentalization difficulties have defensive character against intense emotional experiences (such as early childhood trauma)	Difficulties stem from cognitive deficits (e.g., memory, attention, inference, language ability), which in the course of development did not reach the optimal level of functioning
Confirmed deficits	Emotional disorders, personality disorders	Autism, schizophrenia, brain injuries, depression

Note. Based on Górska and Marszał (2014).

On the other hand, the theory of mind mainly deals with cognitive functioning, particularly emotion recognition and reasoning about cognitive or/and affective mental states (Davidsen & Fosgerau, 2015; Quesque & Rossetti, 2020). This is a "cold", more abstract type of knowledge of mental states that involves understanding someone else's mind, rather than one's own. Developmentally, it alludes to the relationship between the theory of mind and the level of linguistic functioning of the child, its temperamental characteristics, executive functions,

family structure, socioeconomic status, and parental mind-mindness of the child (Poulin-Dubois, 2020). Some studies have, however, indicated that there is a limited relationship between the theory of mind and attachment (Fossati et al., 2017; Laranjo, Bernier, Meins, & Carlson, 2014; Meins et al., 2002). For example, a child's theory of mind predicts the mother's verbal abilities, but not her mentalization or secure attachment (Meins et al., 2002; Ontai & Thompson, 2008). Severe deficits in this function have been shown in many mental disorders such as autism, schizophrenia, depression, brain injury, and anorexia (Bora & Pantelis, 2013; Oldershaw et al., 2011; White et al., 2009). Research into the relationship between the theory of mind and emotional disorders has been much less conclusive, yielding contradictory results regarding anxiety, mood, and obsessive-compulsive disorder (Inoue et al., 2004; Sayin et al., 2010). This may indicate the limited nature of the relationship between theory of mind and emotional functioning. Equally, there have been inconclusive results regarding borderline personality disorder (Fertuck et al., 2009; Gooding & Pflum, 2011; Németh et al., 2018; Scott et al., 2011). Correlational studies have shown no relationship between the theory of mind measured with the Strange Stories test (Happé, 1994) and mentalization measured by the Mental States Task (Beaulieu-Pelletier et al., 2013), in both healthy individuals and in those with borderline personality features (Górska & Marszał, 2014).

In summary, the theory of mind is related to a different developmental context than mentalization; it denotes a different mechanism responsible for the recognition of mental states, despite being related to mentalizing to some point. In mentalizing, we observe an interplay between a reflection and the defenses against this reflection, as recognition of mental states proved to be threatening in the developmental context of attachment trauma (Luyten et al., 2020). Little is known about the relationship between the theory of mind and defensive activity, as more specific cognitive impairments are discussed as a potential mechanism of observed deficits. Finally, mentalization plays an important role as a regulatory function where, besides understanding someone's mental states, it covers the underlying transformation and regulation of one's own emotions; this is not present in the theory of mind, as it mainly covers the other-oriented process. Given these considerations, I will not describe tools that are considered to measure the theory of mind

in this book—but only those that show high validity as measures of mentalization, as understood by Fonagy and his team.

2. Online and Offline Mentalization

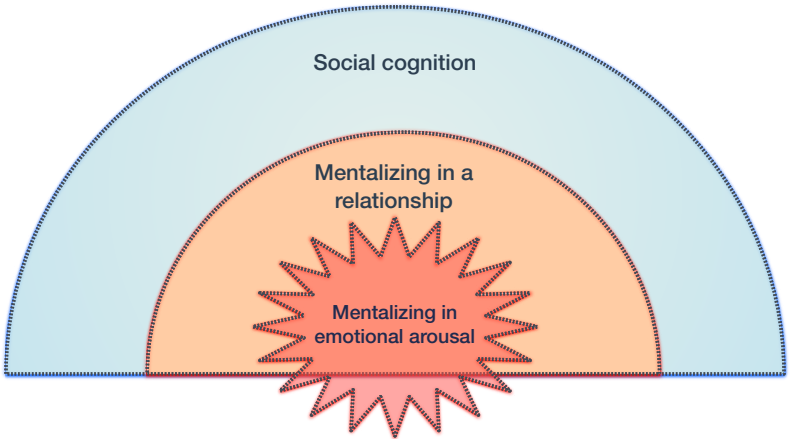
It is also important to consider how we define the two contexts that mentalization can be measured in: (a) retrospectively, as a personality trait—a constant, individual level of ability that manifests similarly in different situations (offline mentalizing), (b) and in the here and now, as a state that dynamically changes and is predicated on the situation (online mentalization). Each of these contexts has specific consequences for understanding mentalization and the generalization of the results. In some situations, it may be advisable to measure mentalization in one context or the other. Here I will discuss the measures that are available in terms of their usefulness for measuring mentalization in its online and offline context.

Mentalizing in a Relationship (Online Mentalization)

Recent research has confirmed that mentalization changes with situational factors (Bateman et al., 2019; Fonagy et al., 2011). This is found not only in people in various clinical groups but also in healthy individuals (Colle et al., 2020; Górska, 2015). Considering the reports on the relationship between an individual's level of mentalizing and the type of relationship in which this process takes place, it would seem to be very important to take the relational context into account when measuring mentalization (Bączkowski & Cierpiałkowska, 2015; Górska & Soroko, 2017; Fonagy et al., 2011; Fonagy & Luyten, 2009; Sharp & Vanwoerden, 2015). Depending on the intensity of emotional arousal and the interpersonal context, understood as the activation of relational and emotional representations; a relationship-specific internal working model of attachment, or the representation of the self-object dyad, there are different levels of mentalization activation (Bateman et al., 2019; Bączkowski & Cierpiałkowska, 2015; Herrmann et al., 2018; Kernberg

et al., 2008). Recent studies have shown that the context of competition or other threats to self-esteem can also lead to a change in the level of mentalization (Colle et al., 2020; Franzen et al., 2011). This implies that an individual's level of mentalizing can thus vary depending on the context of the measurement. As a case in point, it has been suggested that mentalization proceeds abnormally in individuals with borderline personality disorder only in the context of activation of insecure attachment representations; and that the higher the activation level and the stronger the attachment, the greater the anomalies in mentalizing should be expected (Bateman & Fonagy, 2010; Luyten et al., 2019).

Figure 2
Contexts of Measuring Mentalization



Note. Adapted from *Mentalizacja z perspektywy rozwojowej i klinicznej* (p. 16), by L. Cierpiałkowska, L., and D. Górska, D., 2016, Poznań: Wydawnictwo Naukowe UAM. Adapted with permission.

Taking this into account, it seems important to consider mentalization in relation to the specific interpersonal context and the level of arousal—as opposed to merely an ability that represents a constant characteristic of the person, regardless of the situation. This is incorporated in the

methods of clinical evaluation used by therapists (see, e.g., Chapter 11), and in interview coding systems, where mentalization is assessed in the context of stimulating representations of close relationships. For example, in the case of the Reflective Functioning Scale (Fonagy et al., 2002), the interviewee's statement directly concerns people who are attachment figures; in the case of other narrative methods, therapeutic sessions, or interviews about close relationships are evaluated. This session or interview itself activates the attachment system, so this type of assessment refers to mentalizing when internal representations of relationships are stimulated. In a specific relationship, mentalization is also investigated experimentally by activating the relevant internal working models of attachment before making the measurement (Fizke et al., 2013; Marszał, 2015). When measuring mentalization, considering the impact of the interviewer or researcher is also worthwhile (Luyten et al., 2011). Knowing the extent to which interaction with another person is useful for the subject in regulating the level of arousal may assume significance in accurately determining the ability to mentalize in a specific interpersonal context.

Mentalizing in a Neutral Context (Offline Mentalization)

Meanwhile, when intending to measure mentalization using self-reported questionnaire methods, we need to bear in mind that we are not taking here into account any specific relational context. Instead, we measure the 'abstract' mentalization that research participants usually manifest in various relationships (and in fact, beliefs about their mentalization level as well; see Chapter 5). Here, mentalization is considered an unchanging feature of a person's functioning, which manifests at the same level, albeit in many varying contexts. We might thus have doubts about the validity of conclusions drawn about respondents' everyday functioning when these are based on results of research measures that do not consider the relational context or emotional arousal. This is thus a concern about the ecological validity of self-reporting methods. With a questionnaire result, we are unsure if it can be translated into a specific relationship of the study participant—for example, whether the level of mentalization indicated by the questionnaire result will be seen in the

relationship with a partner. It can be assumed with greater probability that while this questionnaire measurement will, on one hand, reflect the level of mentalization in a neutral, undemanding situation, in the absence of emotional stress and activation of the attachment system, this will also heavily rely on the self-esteem of the study participant. Therefore, this will be the level of mentalization usually experienced in neutral relationships and situations (see, e.g., Dimitrijević et al., 2018). For a complete picture of mentalizing, these measurements should be supplemented with other methods related to more demanding, emotionally engaging conditions (in the online context). This is one of the reasons why self-report methods are not useful for the individual clinical diagnosis of mentalization; they can only be used for statistical quantitative analysis of large sample sizes.

Performance-based methods, especially the Movie for the Assessment of Social Cognition (Dziobek et al., 2006), lie somewhere in the middle of this range. They are close to real-life situations, and their ecological validity is greater than that of questionnaire methods as they use complex social stimuli. It is likely that when responding to stimuli close to a natural context, subjects unconsciously activate their own representations about emotions and relationships, emotionally engaging in the performance of the task (Jańczak, 2018b). On the other hand, these methods test the mentalization of the minds of neutral characters—those with whom the subject is not in a close relationship, although he or she may identify with them to some extent. Therefore, we cannot infer that this mentalization is measured in the context of a close interpersonal relationship or high arousal; however, these methods are more ecologically accurate than approaches based on self-report.

3. Assessing the Various Dimensions of Mentalization

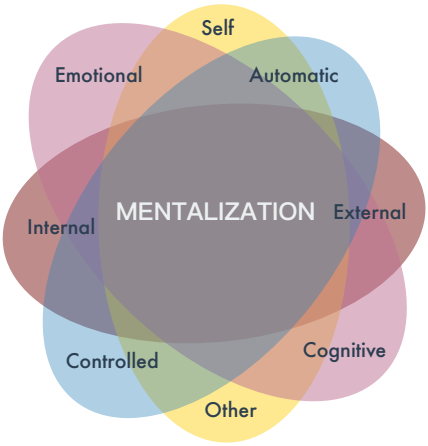
Fonagy and his team have described different dimensions of mentalizing, presenting it as a complex and heterogeneous construct, varied both in content and in the manner in which it transpires. This is problematic because—despite the understanding of mentalization and its deficits—this team has collected empirical material over twenty years using a tool that does not measure these dimensions, but instead only

gives a single, general score of mentalization (The Reflective Functioning Scale, RFS, Fonagy et al., 2002). Notably, several theoretical analyses of dimensions of mentalizing have been postulated (Bateman et al., 2019; Choi-Kain & Gunderson, 2008; Fonagy & Luyten, 2009). Another team using a slightly different theoretical background undertook research using a tool that actually measured all the dimensions explicated by Fonagy, along with some other dimensions (Carcione et al., 2010; Semerari et al., 2003). However, these Italian authors emphasize the differences between metacognition and mentalization, and these two approaches have never been considered equivalent despite being closely related. It is only recently that measures of the mentalization dimensions described by Fonagy have been developed (see above). In addition, Fonagy's team is currently working on such a measure (UCL, 2018). Hopefully, years of research incorporating these improved measures will provide further answers regarding the nature of mentalization and the characteristics of people from different clinical groups in relation to its dimensions. Currently, we have a partially confirmed (Luyten & Fonagy, 2015) theoretical model derived from studies on the neuroanatomical basis of mentalizing (Fonagy et al., 2011; Fonagy & Luyten, 2009; Gabbard et al., 2006). However, this brings us to one of the fundamental issues in the assessment of mentalization and in characterizing specific measures: does the tool measure mentalization in one dimension, or in multiple dimensions—and if so, which ones?

Dimensions of Mentalization in Fonagy's Model

Regardless of empirical status, the dimensions described by Fonagy are most widely discussed in the literature, especially in the context of psychopathology. According to Fonagy, mentalization can be defined along four main dimensions: (a) aspect: cognitive or affective; (b) person: self or other; (c) mode: automatic or controlled; and (d) focused on external features or internal mental states (Fonagy & Luyten, 2009). I refer to the literature (Bateman et al., 2019) for an exhaustive description of the dimensions; here I will discuss issues related to its assessment.

Figure 3
Four Dimensions of Mentalization in Fonagy's Model



For many years, the Metacognition Assessment Scale-Revised was the only measure to refer to the dimensions of mentalization: the first two directly, the other two indirectly. The MAS-R lacks the subscales related to the third and fourth dimensions of mentalization, but its data can indirectly infer the level of automatic or controlled mentalization and determine whether it is oriented toward external features or internal mental states. However, questionnaire measures have recently been developed to address all dimensions described by Fonagy: these include the Mentalization Imbalances Scale (Gagliardini et al., 2018) and the Multidimensional Mentalizing Questionnaire (Gori et al., 2021). This important step forward may catapult mentalization research to a different level, disseminating the study of the dimensions of mentalizing across different groups, using a variety of measures. This will contribute to further consolidation of the hypothesis on mentalization profiles in individuals with various mental disorders (especially personality disorders), also answering questions about mentalization and its myriad properties.

Meanwhile, other measures that were not originally designed to capture the specific dimensions of mentalization can be analyzed in terms of the dimensions they actually measure. The most comprehensive evaluation has been provided by Luyten (Luyten et al., 2011, 2019).

For example, performance-based methods involve inferring the mental states of others (the others dimension), without measuring mentalizing about oneself (the self-dimension). On the other hand, interview coding systems and questionnaires relate to both the self and to others. There are no such clear differences for the affective–cognitive dimension, and most tools measure both aspects of mentalization, sometimes separately (i.e., giving a separate score for each aspect). To illustrate, the Metacognition Assessment Scale-Revised (Carcione et al., 2010) has separate subscales for cognitive and emotional mentalization, while the Mentalization Questionnaire (Hausberg et al., 2012) has subscales for emotional processing. Then there is a measure that focuses on the affective aspect of mentalization itself (so-called mentalized affectivity): Mentalized Affectivity Scale (Greenberg et al., 2017).

As for other dimensions, most measures enumerated in the literature allow assessment of controlled mentalization—a process that runs consciously and reflectively, closely related to verbal functioning. Controlled mentalization manifests itself in situations where people express themselves on the topic of their own or other people's mental world. This is thus the mentalization measured by a questionnaire (respondents are asked to reflect on their own mentalizing and share their beliefs about its level), besides being observed in parts of interviews where the researcher directly asks about the respondent's mentalizing (e.g., demand questions in the Reflective Functioning Scale). On the other hand, automatic mentalization is unconscious and nonreflective, requiring minimal attention and effort. It is based on a nonverbal reflection of other people's mental states (Fonagy & Bateman, 2008; Luyten et al., 2011). Automatic mentalization can be measured using medical devices (EEG measurement, neuroimaging methods), with methods based on the priming paradigm, such as the Mental State Task (Beaulieu-Pelletier et al., 2013), and in research using complex social stimuli, such as the Movie for the Assessment of Social Cognition (Dziobek et al., 2006). The authors of the Mentalization Questionnaire also indicate that the Refusing Self-Reflection subscale may partially examine deficits in controlled mentalizing (Hausberg et al., 2012). In all likelihood, it is also possible to indirectly measure the automatic process using interview coding systems: mentalizing during an interview concerning close relationships requires the involvement of both the unconscious and the conscious/controlled aspects of the process.

The fourth dimension of mentalization seems to have a different status than the others. Gagliardini et al. (2018) indicate that, while the dimensions described above can be presented as a spectrum, in that an increase in one pole leads to deficits in the other (e.g., excessive focus on mentalizing about others leads to deficits in recognizing one's own states), this does not apply to the fourth dimension. From a clinical standpoint, it is difficult to imagine a scenario where the participant places too much importance on the recognition of the internal mental states of another person. Only one of the poles of this dimension (excessive focus on a person's external, physical characteristics) is therefore significant from the perspective of psychopathology. Moreover, Gagliardini et al. (2018) indicate that only emotions have both an external component (expression) and an internal component (the experience of emotions), which makes it difficult to relate this division to other mental states pertaining to cognitive functioning, such as beliefs or fantasies. This dimension is therefore quite problematic with respect to operationalizing and understanding it against the backdrop of possible deficits. Regardless of these controversies, Luyten points out that only experimental and observational methods measure the external dimension of mentalization directly (Luyten et al., 2019).

Mentalizations: One or Many?

So it is now fairly clear that mentalization is a multidimensional concept. Should mentalization be operationalized as a global skill consisting of the dimensions described earlier, or as a set of different, relatively independent component functions? In this sense, it becomes important to decide whether we can talk about mentalization disorders in general, or only about specific irregularities manifesting in an individual's disturbed functioning in some of the dimensions, which are dependent but rather different from each other (Dimaggio et al., 2007, Semerari et al., 2007; Vanheule, et al., 2009). Sharp and Kalpakci (2015) postulate that mentalization should be treated as intelligence (IQ) is treated in psychology: as a function in which various specific factors contribute to an overall level of functioning. Semerari et al. (2007) described three criteria that must be met to recognize mentalizing as comprising relative-

ly independent functions: (a) some of its dimensions works incorrectly even when others are not disturbed; (b) a different neuroanatomical basis of each function can be demonstrated; (c) different development paths can be shown for each. Distinguishing several dimensions, most clinical studies and observations (Gagliardini, Gullo, et al., 2020; Luyten et al., 2019; Semerari et al., 2007) support the complex structure of mentalization. If mentalization consists of distinct functions, then it becomes important to determine the functioning of the individual on each of the dimensions described by Fonagy, and possibly, on other dimensions as well. Although the two research teams cited above differ on the fundamental issue of the nature of mentalization—the Italian team views metacognition as a set of distinct, independent functions, while the British team takes it as a general skill that can recognize fluctuations and imbalances in relation to its individual dimensions—overall, it can be surmised that the conclusion ultimately remains unchanged: measuring these aspects is necessary to adequately reflect the mentalizing of people from different clinical groups.

4. The Two Faces of Mentalization Disorders: Hypomentalization and Hypermentalization

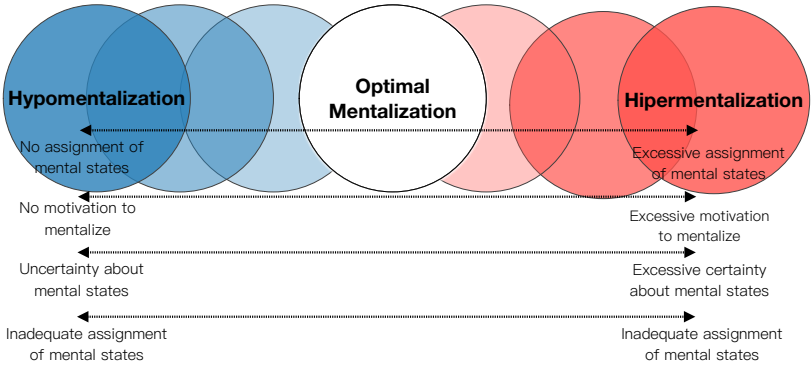
Recently, the literature on the subject has increasingly pointed out two tendencies to have emerged as problems with mentalizing: (a) hypomentalization, a lack of or reduction in the ability to recognize and infer mental states, accompanied by a lack of motivation to recognize them, coupled with problematic interpretation of these states when attempts have been made to recognize them; and (b) hypermentalization, the excessive assignment of mental states in a way that goes far beyond the available data, or in a manner not conforming to reality. This is accompanied by overconfidence in the recognition of mental states and increased motivation to mentalize (Sharp et al., 2011; Sharp & Vanwoerden, 2015).

Fonagy elucidated three types of mentalizing disorders: his non-mentalizing and concrete thinking modes correspond to hypomentalization, while pseudomentalizing (and overactive pseudomentalizing in

particular) corresponds to hypermentalization (Bateman et al., 2019). This distinction appeared in research reports as a consequence of the Movie for the Assessment of Social Cognition because this was the only measure that allowed measurement of both hypomentalization and hypermentalization for a long time (see, e.g., Chapter 4). The interrelationships between these two types of mentalization disorder are very problematic, and the dimensions that comprise the definition of these concepts are also quite vague. Seemingly, at least four different indicators of mentalization problems need to be addressed when considering under and overattribution of mental states (Figure 4):

1. The ability to assign mental states; this ranges from not assigning mental states at all in hypomentalization (not understanding behavior in terms of mental states—e.g., "he is getting angry because he is hungry, not because he is offended"), through the optimal attribution of mental states where justified ("I said something unpleasant to him, so now he is irritated"), to the overattribution of mental states in hypermentalization (explaining in terms of mental states when this is unjustified, e.g., "he is yawning because he is bored and disgusted, not because he is very tired").
2. The motivation to assign mental states, ranging from a lack of motivation to mentalize in hypomentalization, through the optimal level of motivation in optimal mentalization, to an excessively strong emphasis in recognizing mental states in hypermentalization (even a "compulsion" to mentalize).
3. Certainty about correctly recognizing mental states, which ranges from high levels of uncertainty about assigned mental states in hypomentalization, through an optimal balance between certainty and doubt about the accuracy of one's own judgments in optimal mentalization, to overconfidence about mental states in the case of hipermentalization.
4. Accuracy of assigning mental states: is the right mental state-recognized and assigned? Here, problems can be identified for both hypermentalization and hypomentalization. This is attributed to the fact that in both situations, the person assigns mental states in a manner that is incongruent with reality.

Figure 4
From Hypomentalization to Hypermentalization



These dimensions are not necessarily separate: in mentalizing disorders, they seem to reinforce each other, as in "I never even try to guess what he means (lack of motivation), because I am always wrong about what he thinks about me (inadequate mentalizing)."

This is a proposal for understanding the two types of mentalization disorders, but it needs empirical confirmation and further analysis. At the moment, we do not know much about the nature of either hypomentalization or hypermentalization due to the limited number of tools that measure mentalization in these two aspects (Sharp & Vanwoerden, 2015). I have already mentioned one such measure, the Movie for the Assessment of Social Cognition. In several pioneering studies, Carla Sharp (Sharp et al., 2011, 2013) has shown that mentalization disorders take the form of excessive focus on mental states in adolescents with high borderline features. Thus, researchers' attention turned to the "other pole" of mentalization difficulties, thus resulting in the creation of the Reflective Functioning Questionnaire (RFQ) tool; this comprises two subscales: uncertainty and certainty about mental states (Fonagy et al., 2016; Fonagy & Ghinai, 2008). Unfortunately, the validity of the RFQ in grasping these two types of mentalization difficulties has not been impervious to scrutiny (see Chapter 8; e.g., Müller et al. 2020). However, this is unsurprising, given the deceptive nature of hypermentalization

which, is sometimes confused with correct mentalization even in a psychotherapist's office (Bateman et al., 2019; Jańczak, 2018a). However, most of the available tools measure only hypomentalization: the lack of motivation to recognize mental states or the incorrect assignment of mental states. The available interview coding systems lack indicators of hypermentalization, although an experienced clinician can easily observe these during a qualitative analysis of narrations (Carcione, et al., 2009; Gullestad & Wilberg, 2011; Sharp & Vanwoerden, 2015). As for the questionnaires, apart from the Reflective Functioning Questionnaire, only the Modes of Mentalization Scale (Gagliardini & Colli, 2019) has a subscale for hypermentalization, understood as excessive involvement in the abstract, intellectualized "mentalizing", and in conjunction with overconfidence in one's own knowledge of other people's mental states. The Modes of Mentalization Scale is a measure based on the therapist's clinical assessment of the patient's level of mentalization. Psychometric analysis has shown this subscale to be highly reliable and valid; high rates of hypermentalization were achieved by narcissistic patients, which was also associated with disorganized attachment (Gagliardini & Colli, 2019; Gagliardini, Gatti, & Colli, 2020). The good psychometric properties for hypermentalization obtained by the Movie for the Assessment of Social Cognition and the Modes of Mentalization Scale, as well as the difficulties with measuring this using the Reflective Functioning Questionnaire, suggest that hypermentalization is a very complex and ambiguous construct that can be difficult, or perhaps even impossible, to investigate using self-report measures, but which is relatively easy to detect with clinical judgment, or from the perspective of an outside observer in performance-based and observer-based measures.

5. Other Problems With Mentalization Assessment

Different Information Sources

Some authors have rightly pointed out that most studies measure mentalization from only one informant—either the subject (self-report methods)—or an external observer (interview coding systems or per-

formance-based measures; Gagliardini et al., 2018). When choosing a measure of mentalization, the limitations of one informant should be taken into consideration. Determining mentalization with self-report methods entails a risk of error, primarily due to the participant's limited ability to accurately recognize and evaluate his or her own mentalizing. This becomes particularly important when measuring mentalization in people in clinical groups, including people with personality disorders, in whom the lack of self-reflection, the impaired self-esteem, and the disturbances in interpersonal functioning are egosyntonic and form part of the clinical picture of the disorder (Gagliardini et al., 2018). On the other hand, measurement from the perspective of an independent observer—e.g., the raters evaluating the record of a therapeutic session or an interview—offers key advantages in that it measures mentalization in the relational aspect because the actual mentalizing "here and now" is measured, rather than "mentalizing about mentalizing", as in the case of self-description methods. However, transcripts' evaluation by raters may involve the risk of omitting data from non-verbal sources (such as tone of voice, eye contact, and gestures), along with some elements that make up the unconscious dimension of mentalizing, which can only be captured in a live, real relationship with the patient. There are no such limitations with the clinical measures used by the therapist to assess the level of mentalization of a patient based on a broader picture of the patient's functioning during psychotherapy (Gagliardini et al., 2018). Put succinctly, abstract psychological constructs like mentalization should be determined using a range of methods and employing different measurement sources (see, e.g., Choi-Kain & Gunderson, 2008; Fossati et al., 2018; Gagliardini et al., 2018). Only evaluation from different perspectives can give a complete picture of one's mentalizing process. When deciding on a tool to measure mentalization, we should consider the limitations of each tool in terms of the source of data about an individual's mentalization.

Economics of the Assessment

One significant issue with measuring mentalization is that the Reflective Functioning Scale measure, considered the gold standard for

mentalization assessment, is difficult to access, relatively expensive, and requires a great deal of time to conduct the study and later to rate the transcripts. Its exorbitant cost and lack of accessibility are attributed to the need for specialist training, which is provided in only a few locations in Europe. Moreover, a significant amount of time is required to conduct the Adult Attachment Interview (George et al., 1985)) and then transcribe/rate it. Ultimately, it takes many hours to obtain a single reflective functioning score (interview + transcription + coding). The situation is similar to another interview coding system for measuring mentalization, the Metacognition Assessment Scale-Revised. Its structured version, the Metacognition Assessment Interview, does, however, take less time, especially because it does not necessitate transcription (Semerari et al., 2012). Yet it is undoubtedly necessary to create and validate alternative measures that lack these drawbacks, allowing for rapid and easily accessible assessment in large sample sizes, which could be beneficial for researchers and clinicians at various research centers.

Many measures have recently been developed to this end. For example, more than a dozen works have been published on the validation of new questionnaires for measuring mentalization over the past five years (e.g., the Mentalization Scale, Mentalization Questionnaire, Reflective Functioning Questionnaire, and Multidimensional Mentalizing Questionnaire). This has made significant changes in the situation of mentalization research. While it has become more accessible, this has given rise to new dilemmas about how accurate and adequate questionnaires are in solving specific research problems. Questionnaires are certainly the fastest and cheapest way to measure mentalization, as they can be easily performed on a piece of paper by using a pencil or gaining access to a computer. Research assistants can easily administer this type of measure in large sample sizes (even online); the results' interpretation is also a straightforward process. However, researchers who use this type of measure must be aware of its limitations. The main problem is that it is based on the self-knowledge of the respondent and depends on his/her self-esteem. Moreover, it measures mentalizing as a stable characteristic (Chapter 8 will provide more details on this).

Performance-based measures, such as the Movie for the Assessment of Social Cognition or the Reading the Mind in the Eyes Test (Baron-Cohen et al., 2001), are also relatively easy and inexpensive

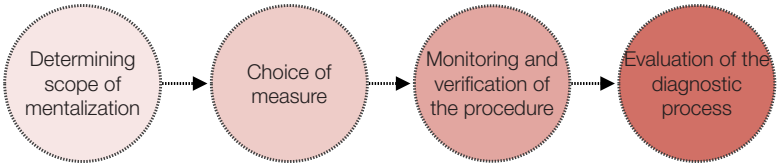
to use. However, their use in research requires computer equipment is subject to limitations on the study sample's size. However, they work well when used online (Olderbak et al., 2015), which makes them even more accessible.

It seems that we might finally be approaching a situation where we have access to many different good measures of mentalization. Depending on the researcher's needs, the choices include several questionnaires (including those that measure the clinical assessment of the patient's mentalization by the therapist), interviews, and performance-based methods. In some situations, the costs of using a measure are a key consideration. In presenting the measures here, I will attempt to expound on and evaluate each measure regarding its economics of use: the time needed to conduct the study and interpret the results, the training needed by researchers, and other associated costs.

6. A Good Enough Measure of Mentalizing

What should the researcher, faced with the dilemmas described above, do to select and put into practice a good mentalization measure? Truth be told, the answer applies fairly universally to all abstract psychological constructs. Any mentalization diagnosis should be based on general guidelines on the quality and determinants of clinical diagnosis (Cierpiałkowska et al., 2017). In line with evidence-based assessment (EBA), a good diagnostic process involves several stages: (a) selecting the scope of variables to be diagnosed; (b) selecting the optimal assessment tools; (c) selecting and applying the optimal assessment procedures, along with continuous monitoring through the process; and (d) evaluating the adequacy and utility of the diagnostic process (Hunsley & Mash, 2008).

Figure 5
Stages in Diagnosing Mentalization



Any good assessment of mentalization commences with a reflection on what we want to study: what mentalization, with what theoretical approach, with what research paradigm and in what semantic area. It would be useful to ask the purpose of the mentalization diagnosis here: what kind of data do we want; what answers do we want? Some examples of questions that researchers should ask themselves at this stage include: What aspect of social cognition merits closer attention—the cognitive and other-oriented (→ theory of mind measures) or the relational, both self- and other-oriented (→ mentalization measures)? Should mentalization be measured in the context of the "here and now" and online (→ interview coding systems), or rather as a generalized level of this ability (→ questionnaire methods)? Am I interested in hypermentalization, or is it only a deficit of mentalizing, in the sense of reduced mentalization, that I am concerned about? Am I interested in measuring mentalization in terms of its dimensions? Each question is vital because the answers bring us closer to a better understanding of what we want to investigate in a specific case.

The next step is to choose a measure that is suitable for the problem we have formulated, as well as the specific scope of mentalization that we want to measure. In EBA, a good measure has to possess good psychometric properties (Cierpiałkowska et al., 2017). Hunsley and Mash (2008) described the criteria of a good enough measure: high reliability and content and construct validity, high inter-rater reliability for interview coding systems, good reliability measured by the test–re-test method, a high level of generalizability regarding population and study conditions, and sensitivity to changes in the treatment process and clinical utility. As a universal term used in evaluating diagnostic

measures, clinical utility refers to the usefulness of the obtained data in improving the functioning of the subjects (patients). This facilitates a better understanding of them and also makes it possible to predict their behaviors (Soroko, 2020; Thomas et al., 2012). Practical aspects concerning the use of a measure are also included here. Clinical utility encompasses indicators of the measure's effectiveness, availability, functionality, suitability to the circumstances of use, and acceptability to both the researcher as well as the subject (Smart, 2006; Soroko, 2020). An analysis of the costs associated with the use of a measure is important: costs can be in terms of time, money, risk of drop-outs, and human resources needed. In this step, we choose among the available measures, selecting one which, in our opinion, is sufficient, given that it considers the above indicators. Importantly, as indicated by Hunsley and Mash (2008), the assessment of a given measure may be predicated on the context and type of research. A measure that we settle on as the best in terms of the criteria that we deem important will not necessarily be the best in another research context. Therefore, it is important to present a unified objective evaluation of a measure.

Having chosen the best assessment tool, we proceed on to its use, considering how the measurement procedure can be monitored. Regardless of the methods used, it is possible in every stage of measurement to make mistakes that affect the quality of the mentalization diagnosis (such as, for example, failing to follow the standard assessment procedure). Finally, we evaluate the diagnosis process—that is, we analyze the complete process and the data it produces in terms of their suitability for the problem and their usefulness in solving it. We are entitled to infer the level of mentalization in the study group only when the entire process receives a positive evaluation. Put succinctly, although the choice of measure is an important part of the diagnosis process, it is important to remember the broader context of this process.

7. Future Directions in the Study of Mentalization

In recent years, validation studies of various research measures and analyses of mentalization assessment have been published with increasing frequency. Research groups in several countries have un-

dertaken the difficult task of developing accurate and reliable measures of mentalization, and they are increasingly learning to cope with the challenges described above. Existing measures are also undergoing constant reevaluation and improvement, thanks to which we now know more about what they measure and how to understand their results (see, e.g., Anis et al., 2020; Fossati et al., 2018; Müller et al., 2020). Researchers are increasingly determining the validity of mentalization measures using the multitrait-multimethod matrix (Gagliardini et al., 2018). These trends are making mentalization research more accessible in a range of contexts, due to which it can now be precisely planned in terms of what we want to measure and what insights we want to derive.

One of the most anticipated innovations is the emergence of measures that capture mentalization in its various dimensions, especially those described in the theoretical models of Fonagy and his team. As mentioned in Chapter 3, some achievements have already been made here (e.g., the Mentalization Imbalances Scale and the Multidimensional Mentalizing Questionnaire), though we are still awaiting more measures, such as the multidimensional inventory announced by the Luyten team (UCL, 2018). These measures will help disseminate research on the dimensions of mentalization in various groups and use myriad measures. This will contribute to further consolidation of the thesis on mentalization profiles in people with various mental disorders (especially personality disorders), and will help answer questions about mentalization itself. Similarly, we are awaiting a measure that can accurately measure both hypomentalization and hypermentalization. This research area has been relatively poorly researched and may bring interesting conclusions regarding the nature of mentalization disorders in clinical groups, as well as in healthy people under certain conditions that reduce mentalization (see, e.g., Colle et al., 2020). In the future, it may perhaps be possible to describe the determinants of various types of mentalization disorders and to present their specific developmental paths related, for example, to early childhood attachment relationships. Recently, more attention has also been paid to the cultural determinants of mentalization and the differences in its manifestations between people from different cultures, particularly between the individualistic culture of the West and the collectivist culture of the East (see, e.g., Aival-Naveh et al., 2019; Greenberg et al., 2017; Rinaldi et al., 2021). Cultural aspects should also

be taken into account, especially when using measures of mentalization in diverse cultural contexts. Another underdeveloped area related to mentalization measurement methods is the availability of observational methods, currently used, for example, in the study of children (Luyten et al., 2019). Gagliardini et al. (2018) indicate that based on the evaluation of many independent raters, such methods (e.g., round-robin designs or the evaluation of a patient-therapist session by an independent observer) may bring completely new possibilities for the study of mentalizing.[2]

As of now, some very interesting preprints point to new directions in mentalization research in the context of research methods. Given that these are unpublished studies, I will not elaborate on the measures they deal with, but it is worth presenting them briefly here. The first preprint features a new mentalization assessment tool, the Interactive Mentalization Questionnaire (Wu et al., 2019), which measures mentalization using a pioneering interactive approach, considering mentalization from three perspectives: mentalizing others from the perspective of the self, mentalizing self from the perspective of the self, and mentalizing self from the perspective of others (meta-mentalization). The measure has been validated on large sample sizes, with very promising results that suggest a completely new way of measuring mentalizing, thus highlighting the variability of mentalization depending on the interaction between the mentalized and the mentalizing. Another interesting publication concerns the questionnaire measure of mentalizing in relation to the experience of trauma (Berthelot et al., 2021), hinting at a new direction for the study mentalization on specific topics. Generally, the assessment of mentalization gravitates toward the ability to measure with increasing specificity, contextuality, and detail. Given the continued interest in the area of mentalization in research centers worldwide, I expect us to forward to many more fruitful years of research and discoveries that develop accurate and reliable measurement measures.

[2] At the time of writing this book, a preprint of the Certainty About Mental States Questionnaire (S. Müller et al., 2021), measuring disorders of mentalization in terms of hypermentalization and hypomentalization, became available. The results of validation studies of this tool are very promising.

PART 2:
DESCRIPTION OF THE MEASURES

In this part, I will describe some measures of mentalization. The selection of these measures was guided by the following principles:

- The measure must have proven its validity in measuring mentalization according to the model of Fonagy and colleagues.
- The measure must be of high clinical utility and used in research on people in various clinical groups, especially on people with personality disorders.
- The measure must be commonly used and up-to-date; that is, it should be used in published research over the past ten years.
- The measure must measure mentalization among adults.

These measures are grouped by the division traditionally used in the literature, which considers the diagnostic and research methods: self-report questionnaire methods, performance-based methods, and interview coding systems. The last category represents a relatively new group of methods based on the clinical assessment of the patients' mentalization by the therapists. Each chapter is preceded by a succinct commentary on the challenges associated with the use of a specific group of methods. No observational or projective methods met the above criteria. Despite being observational methods of measuring mentalization, these are not used to test adults in a clinical context—e.g., the maternal mind-mindedness tool based on the observation of the mother's play with the child (Meins & Fernyhough, 2010). Regarding projective methods, although Luyten mentions several measures of this type in his paper (Luyten et al., 2020), they were either not developed adequately enough to measure mentalization in the sense of Fonagy's theory, or were not used in a clinical context.

I adopted a consistent approach to elucidate all the selected measures:

- theoretical background;
- the test procedure, scoring, and interpretation of results;
- psychometric properties: validity and reliability of the measure;
- application of the measure: what is the research where it is used and what results does it yield ;
- comment about the measure when needed.

I have also attempted to underscore the practical aspects of the measure's use and other indicators related to its clinical utility (see, e.g., Chapter 6). A list of selected measures is presented in the summary table at the end of the chapter (Table 7, p. 87). In addition to measuring availability information, it also presents subscales, duration of the procedure, training information, the context of the assessment (group or individual, online or in-person).

Due to the above-mentioned selection criteria mentioned, some measures of mentalization in adults do not find mention in this book. These excluded measures fall into these groups:

1) Measures that are used only in a limited clinical context. Many measures of theory of mind are used almost exclusively in the context of autism or schizophrenia research (see metaanalysis in: Eddy, 2019, Pinkham et. al., 2016). Only measures used in the context of severe personality pathology and attachment relationships are described here.
2) Measures used in a nonclinical context.
    a. Measuring mentalization in the context of the mother-child relationship. Much research relates to the mentalizing of the mother regarding the mental states of the child (and to the maternal mind-mindedness). These include the Parental Reflective Functioning Questionnaire (Luyten et al., 2017), the Maternal Mind Mindedness Scale (Meins & Fernyhough, 2010), and the rating of reflective functioning in the Parent Development Interview (Sleed et al., 2020).
    b. Measures of mentalization in therapists. A separate stream of research on mentalization involves research on mentalizing therapists in the context of various psychotherapy-related variables, such as the strength of the therapeutic alliance and the effectiveness of therapists (Cologon et al., 2017; Reading et al., 2019), or countertransference

(Barreto & Matos, 2018; Bhola & Mehrotra, 2021). For this purpose, various measures are utilized (reviewed by Shaw et al., 2019), including The Therapist Mental Activity Scale TMAS (Normandin et al., 2012), the Mentalization-Based Treatment Adherence and Competence Scale, and the MBT-ACS (Karterud et al., 2013).

8. Self-Report Questionnaires

Questionnaire methods are a relatively new but rapidly growing group of methods for measuring mentalization. Despite their palpable limitations, which I have discussed in the first part of the book, they are applied in many different contexts, especially where it is necessary to quickly measure mentalization in large sample sizes, such as for screening purposes. As they can be easily administered, they are also useful wherever repeated measurements are needed—for example, in determining changes in mentalization in response to psychotherapy or other psychological interventions. Some authors have referred to the usefulness of self-report measures for the clinical diagnosis of mentalization to supplement the description of the patients' functioning or plan appropriate intervention methods (Beaulieu-Pelletier et al., 2013), but other types of methods, particularly clinical interviews, seem to be better suited to this purpose (Luyten et al., 2019). However, the main limitation of these methods is that rather than measuring the actual level of mentalization in real life, they determine cognitive and affective representations of mentalizing. This is a common objection to questionnaires that measure abstract psychological constructs (see Chapter 5).

In this chapter, I will present seven self-report questionnaires that meet the above criteria and are used in research into the mentalization of people in various clinical groups. The measures vary greatly in terms of structure and in the extent to which they measure mentalization concerning its various aspects and dimensions. Some are more commonly used in research, such as the Reflective Functioning Questionnaire, while others have only been used in a smaller number of publications; in most cases, this is due to their relative newness, as in the case of the Mentalization Scale and the Multidimensional Mentalizing Questionnaire. All of them have satisfactory psychometric properties.

Reflective Functioning Questionnaire (RFQ)

The Reflective Functioning Questionnaire (Fonagy et al., 2016) is a self-reported measure for measuring reflective functioning, developed by the team of Fonagy based on the original Reflective Functioning Scale. The RFQ is intended to be an easy-to-use, short-term measure used for research screening, measuring the overall level of mentalizing. The RFQ does not address mentalization dimensions or dynamic, context-related mentalization. It is not intended for use in clinical diagnoses. The questionnaire is used to determine severe mentalization impairments, especially those that are characteristic of people with borderline personality disorder and other severe personality disorders, such as narcissistic and antisocial personality disorders (Fonagy et al., 2016). As it may not sufficiently reflect the mentalization level of healthy people, it is not recommended to be used among the general population. The measure's website has questionnaires in twelve language versions. At present, only some of these language versions have been validated: French, Italian, Korean, German, Greek, and Polish (Badoud et al., 2015; Griva et al., 2020; Morandotti et al., 2018). Several versions of this measure are available in the literature, with 8, 46, and 54 items. All these versions have been used in published studies, though the 8-item version is most often used, and most of the validation studies apply to this version of the RFQ.

Administration and Scoring Procedure

The RFQ consists of two subscales: certainty (RFQ_C) and uncertainty (RFQ_U) about mental states. Both subscales are intended to relate to mentalization about others and the self. High scores on each subscale indicate distinct mentalizing disorders, as shown in Table 2.

Table 2
Subscales of the Reflective Functioning Questionnaire

	Uncertainty about mental states (RFQ_U)	Certainty about mental states (RFQ_C)
Interpretation of the results	High scores indicate hypomentalization	High scores indicate hypermentalization
Measured mentalization impairments	Concrete thinking and the psychic equivalence	Excessive mentalization, pseudomentalization
Difficulty characteristics	Inability to perceive the complex mental states of oneself and others. The subject may be aware of difficulties with mentalizing.	Tendency to recognize inadequate mental states of oneself and others. The subject is convinced of the accuracy of their beliefs about mental states.
Sample item	"I always know what I feel"	"People's thoughts are a mystery to me"

Note. Based on Fonagy et al. (2016).

The respondent marks the answer on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The RFQ_C score is recoded so that answers from 1 to 4 are counted as 0 and indicate adequate mentalization, while higher scores indicate an increasing degree of mentalization disorder (according to the key: 5 = 1, 6 = 2, and 7 = 3). In the case of the RFQ_U, the scoring is reversed: high results (4-7) are counted as 0 (adequate mentalization), while low results indicate mentalization disorder (1 = 3, 2 = 2, 3 = 1). The higher the score on the subscale, the greater the difficulty with mentalizing. Low results, on the other hand, indicate correct mentalization. Importantly, half of the items are double-coded in the most frequently used eight-item version of the measure, inversely for each of the subscales: for example, "I definitely agree" in the item "Sometimes, I do various things without

really knowing why" also indicates low certainty and high uncertainty about mental states. The RFQ has no overall score.

Psychometric Properties

Validation studies have demonstrated the validity of RFQ as a mentalization assessment tool, and the results have been widely replicated. Studies in both clinical populations of people with personality disorders and nonclinical populations have shown that mentalization, as measured by RFQ, correlates positively with constructs similar to mentalization (empathy, mindfulness, and perspective-taking), and negatively with various indicators of psychopathology (Fonagy et al., 2016). The RFQ score also shows relationships with attachment (Badoud et al., 2018; Fonagy et al., 2016; Mousavi et al., 2021). The questionnaire differentiates between patients with personality disorders and people in the control group (Badoud et al., 2018; Fonagy et al., 2016; Morandotti et al., 2018). These studies also confirm the two-factor structure of the questionnaire, as well as high reliability measured by the test-retest method; *rs* = .84 and .75. The internal consistency of the scales in many studies oscillates around the critical value of $\alpha = .70$ (between .61 and .76), slightly differing by subscale and study group (Badoud et al., 2015; Fonagy et al., 2016; Morandotti et al., 2018). Correlations between results on the RFQ and the Reflective Functioning Scale differ with the study group: studies with parents of young children did not show any relationship (Anis et al., 2020), whereas studies with mothers showed a negative correlation only for RFQ_U (Handeland et al., 2019). Meanwhile, in studies with adoptive parents, RFQ_C correlated with higher mentalization, and RFQ_U with lower mentalization, as measured by RFQ (Malcorps et al., 2021).

Research Findings

RFQ is used in a variety of clinical contexts, primarily to study the relationship between the level of mentalization and other personality variables in personality disorders (Bezerra et al., 2020; Euler et al.,

2021), eating disorders (Gagliardini et al., 2020), addictions (Handeland et al., 2019; Macfie et al., 2020), PTSD (Huang et al., 2020), and depression (Li et al., 2020). It is also used to determine the level of parental mentalization (Berthelot et al., 2019), as well as to test transgender and gender-nonconforming people (Scandurra et al., 2020). Although not fully congruent with the authors' original recommendations, it has also been used to measure mentalization in people who are assumed to be highly mentalizing, such as psychotherapists (Brugnera et al., 2021).

Modified versions of the tool exist for measuring mentalization in specific groups, such as the Parental Reflective Functioning Questionnaire (Luyten et al., 2017) and the Reflective Functioning Questionnaire for Youth, RFQ-Y; (Sharp et al., 2009). The original version of the RFQ can also be used with these groups (e.g., Berthelot et al., 2019; Morosan et al., 2019; Mousavi et al., 2021; Salaminios et al., 2021).

Comments on the Measure

RFQ has been widely commented on—as well as criticized—by researchers. The complicated method of coding and the double coding of some of the questions raise some psychometric doubts and question the validity of the two-factor RFQ structure established in the original validation studies. According to recent studies involving large sample sizes, the measure has a one-factor structure, and probably the new six-item version of the measure, assessing only the level of hypomentalization has better psychometric properties (Müller et al., 2020; Spitzer et al., 2021). In addition, there is inconsistency in content between the items of the questionnaire and the measured construct: all items except one concern mentalization about the self (rather than others), and refer to behaviors, as opposed to other mental states such as emotions, beliefs, etc. (Müller et al., 2020). Moreover, there are doubts about the pattern of correlation of RFQ subscales with psychopathology indices; these seem to be inconsistent with the theory, with the RFQ_C showing a positive correlation with mental health indicators, and a negative correlation with psychopathology indicators (Müller et al., 2020). This calls into question the validity of the scale as a measure of hypermentalizing. In conclusion, despite the impressive number of studies using

this measure, its psychometric properties and true structure have not yet been established.

Mental State Task (MST)

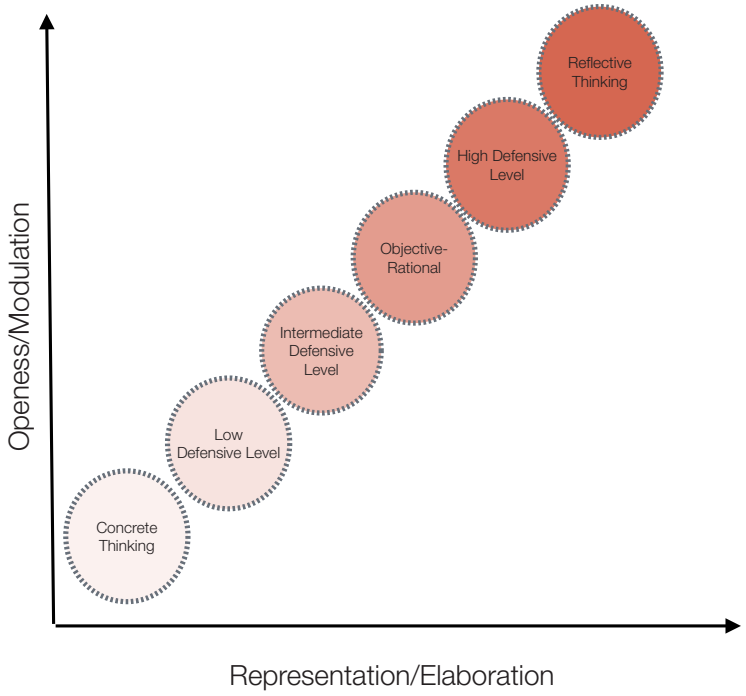
The Mental State Task (Beaulieu-Pelletier et al., 2013) was developed as a self-report version of the Mental States Rating System (SSM; Bouchard et al., 2001). Based on the theoretical assumptions of ego psychology and the theory of object relations, it was designed to assess the mental states of the therapist and patient arising during a therapy session. Under this approach, mentalization is defined as the ego's way of coping with emotional experience. The level of mentalization reflects two aspects of the processing of an experience: (a) representation and elaboration—that is, the level of activation of mental representations in response to emotional experience, e.g., there may be many or few activated representations and the associations could well be largely interconnected, and (b) regulating the openness to experience—that is, the ability to modulate this openness to emotional experience, or the type and degree of involvement of defense strategies, such as inhibiting, limiting, and recreating subjective experience (Beaulieu-Pelletier et al., 2013). MST measures only self-mentalization. It is intended to be used in studying groups of healthy individuals, albeit perhaps to a lesser extent than for clinical groups (Tohme et al., 2021). Kwiecień (2011) created a Polish adaptation of the measure, which has been successfully used in research.

Administration and Scoring Procedure

MST has a unique procedure for a questionnaire tool. The assessment of mentalization is preceded by priming: the participant is presented with one of the TAT cards (Murray, 1943). In the original version, this 3BM card shows a character sitting on the floor looking crying or sad; there is a vague object next to the figure that looks like a gun; however, a different card may be used depending on the purpose of the research. After having been shown the card, the respondent is asked to write down a short story about it. The story must comprise information about the

character's current situation, the character's feelings and thoughts, as well as the causes and consequences of the presented story. After completing this task, a 24-item questionnaire is administered; this contains questions about the mental states accompanying the subject while he or she wrote the story. The questions can be answered by selecting an answer on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The procedure aims to activate both arousal and regulatory strategies concerning difficult topics: loss, depression, aggression, and impulse control.

Figure 6
Subscales of the Mental State Task



Note. Created by Dominika Górska one the basis of Beaulieu-Pelletier et al. (2013).

The MST distinguishes six mental states ("styles" of mentalization) reflecting the interaction between the activation of mental representations and the modulation of arousal (see Table 3). Located on a continuum from the least to the most advanced mental functioning, these are reflected in increasing levels of processing of mental content and in the structural personality integration that underlies those mechanisms. The first three mental states are maladaptive and lead to various difficulties in functioning, while the last two are considered correct mature styles of functioning. On the other hand, the objective–rational style falls between these states and may be temporarily adaptive (Tohme et al., 2021).

Table 3
Mentalization Styles and Sample Items From the Mental State Task

Concrete Thinking
Concrete thinking reflects a very low level of representation and elaboration of the experience and low awareness of one's own mental states. Symbolic and abstract relationships do not appear in response to the stimulus; thoughts and associations are detached and fragmented.
Sample item: "The material did not inspire any particular thoughts.**"**
Low Defensive Level
This mode of functioning is characterized by emotional overload and an inability to make sense of experiences. Internal conflicts are subject to primitive defense mechanisms, such as acting-out, somatization, splitting, and projective identification. The individual experiences a high level of negative affect and perceives internal states as threatening.
Sample item: "I saw or I thought about horrible, scary things"
Intermediate Defensive Level
Recognition and processing of experience are impeded by distortion, omission, or denial of emotions and difficulties through defense mechanisms such as denial, minimization, withdrawal, or isolation of affect.
Sample item: "The character amused me."

Objective-Rational
The individual strives to objectify his or her own experience, rarely referring to emotions. Objective, observable facts, and descriptions of the situation prevail. At certain times, the ability to partially recognize the emotional content of the experience may exist, but there is a tendency to treat it with great distance.
Sample item: "I was mostly trying to organize my thoughts well."
High Defensive Level
In this way, the mentalizing person is generally capable of insight into his or her own experience, but this possibility is limited by the operation of mature defense mechanisms such as denial, reactive formation, and intellectualization.
Sample item: "I was repeating to myself that with time things would return to normality for the character."
Reflective Thinking
This style of functioning implies the ability to fully perceive and recognize the inner experience. The image of self and others is integrated and adequate. Reflective thinking is associated with the recognition and awareness of the currently activated representations, including their affective component, and the relationships between different elements of experience.
Sample item: "The character's situation moved me, but I was not overwhelmed with sadness."

Note. Based on Beaulieu-Pelletier et al. (2013).

The outcome of the questionnaire is the general mentalization score calculated with a formula that uses weights for each subscale and provides separate results for all the six subscales, thus reflecting the level of individual mental states, from the most primitive to the most advanced. The higher the overall score, the better the level of mentalization.

Psychometric Properties

Validation studies have confirmed the six-factor structure of the measure and the convergence validity, establishing a positive correlation

with authenticity, mindfulness, and empathy (Beaulieu-Pelletier et al., 2013; Tohme et al., 2021), as well as with the maturity of the defense mechanisms, such as satisfaction, self-esteem, and the emotional regulation (Marszał & Górska, 2015; Marszał & Jańczak, 2017). Reliability values in the first validation sample were found to be satisfactory (α = .79–.58 for the English version and α = .82–.62 for the French version; Beaulieu-Pelletier et al., 2013). However, subsequent studies indicated low reliability ($\alpha < .50$) of the subscale Reflective Thinking, as well as Objective-Rational style (Jańczak, 2021b) and Intermediate Defensive Level (Tohme et al., 2021). Also, item number 21 should be included in the Primitive Defense Mechanisms subscale, rather than the Reflectivity subscale, as shown by the original key.

As for the relationships between MST and other mentalization measures, the results reflect the differences in the aforementioned understanding of mentalization: only lower mentalization subscales correlated with the result in the Reflective Functioning Questionnaire, and the correlations were low (< .20). This conclusion is confirmed by the weak relationships between borderline personality traits, attachment, and MST score, which apply only to some MST subscales, primarily the Primitive Defense Mechanisms subscale (Beaulieu-Pelletier et al., 2013; Marszał & Górska, 2015; Tohme et al., 2021). However, these observations would need to be confirmed, primarily by verifying the relationship between MST and interview coding systems such as the Reflective Functioning Scale or the Metacognition Assessment Scale-Revised.

Research Findings

Research using the Polish version of the questionnaire showed a low level of mentalization in people with borderline personality organization compared to people with a more mature personality organization (Cierpiałkowska et al., 2016; Górska & Marszał, 2014). Differences in mentalization were also shown, depending on the specific attachment style (Jańczak, 2021 b). Recent studies using the original version of the questionnaire have revealed a relationship between low mentalization in

response to a stimulus related to loss and failure in executive function (Beaulieu-Pelletier et al., 2021).

Comments on the Measure

Its priming procedure makes MST a unique questionnaire, one that is intended to circumvent the limitations of self-descriptive mentalization measures, and instead to assess online mentalizing in relation to a difficult relational theme. Thus, it is the only measure to combine two features important to measuring mentalization: relationality on the one hand, and economy of the assessment on the other; the ease of the procedure, its accessibility for less experienced researchers, its relatively low time cost, and the possibility of using it with large sample sizes, even in the online version. That said, one limitation is the specific and fairly narrow definition of mentalization embedded in psychoanalysis, and thus, the low correlation between the results of the MST and the Reflective Functioning Questionnaire—that is, mentalization measured in the classic approach of Fonagy and his team.

Mentalization Questionnaire (MZQ)

The Mentalization Questionnaire (Hausberg et al., 2012) is a self-report tool for measuring various aspects of mentalization as perceived by Fonagy and his team. Like other measures of this type, it denotes the level of mentalization from the perspective of the participant. These items were formulated based on the Reflective Functioning Scale manual and other literature on mentalization and psychopathology (Bateman, 2004; Fonagy et al., 2002; Target, et al., 2002). The measure is also intended to be used for the repeated measurement of mentalization, such as to determine changes in mentalizing during the course of psychotherapy. So far, German (Hausberg et al., 2012), Italian (Ponti et al., 2019), and Finnish (Eloranta et al., 2020) versions have been developed.

Administration and Scoring Procedure

The MZQ comprises 15 items related to beliefs about one's own mentalizing level. The questionnaire consists of four subscales that represent impairments and problems with mentalization, rather than its mature manifestations. Each item is rated on a 5-point Likert scale, from 1 (*strongly disagree*) to 5 (*strongly agree*).

The MZQ subscales are as follows:

1. Refusing Self-Reflection, e.g., "Talking about feelings would mean that they become more and more powerful."
2. Emotional Awareness, e.g., "Sometimes I only become aware of my feelings in retrospect."
3. Psychic Equivalence Mode, e.g., "It's difficult for me to believe that relationships can change."
4. Regulation of Affect, e.g., "Often I can't control my feelings."

All items should be recoded, with high scores signifying good mentalization and low scores indicating mentalization deficits. The final score is the sum of all points (general mentalization level) or the sum of the scores on individual subscales.

Psychometric Properties

Validation studies were conducted in a group of psychiatric patients (Hausberg et al., 2012). Cronbach's α reliability coefficient was .81 for the entire scale, while it ranged from .54 to .72 for the individual subscales. Test–retest reliability was satisfactory, with $r = .76$ for an overall score. Questions have been raised on the measure's four-factor structure in some studies (Eloranta et al., 2020). Meanwhile, several other studies have established the validity of MZQ. These studies have also found that MZQ differentiates between a clinical group of psychiatric patients and a control group (Belvederi Murri et al., 2017) and that patients with borderline personality disorder scored lower on the MZQ than those in the control group (Hausberg et al., 2012). Correlations with attachment, the severity of psychopathological symptoms, and positive changes in mentalization measured in MZQ on account of psychotherapy have also been shown (Frank et al., 2021; Hausberg et al., 2012).

Research Findings

The MZQ is extensively used in research by various research teams around the world. This tool has been used to measure mentalization in people with eating disorders (Ponti et al., 2019), with Crohn's disease (Engel et al., 2021), in psychotic patients (Fekete et al., 2020), in a clinical adolescent sample (Belvederi Murri et al., 2017), and in a non-clinical adolescent sample (Eloranta et al., 2020). The risk of suicide in psychiatric patients has also been determined (Erbuto et al., 2018). It is noteworthy that mentalization measured by MZQ shows a relationship with the new dimensional model of personality disorders in ICD-11 (World Health Organization, 2018); it mediated the relationship between borderline symptoms and problems in interpersonal functioning, and partially mediated relationship between borderline features and self-functioning. Probst et al. (2018) showed that mentalization, as measured by MZQ, explains the relationship between the severity of psychopathological symptoms and difficulties in the functioning of patients undertaking psychotherapy. At the same time, studies confirm the sensitivity of MZQ to the repeated measurement of mentalization over time, in order to demonstrate a change during psychotherapy (Frank et al., 2021; Hausberg et al., 2012). Most recent studies have confirmed that mentalization, as measured by MZQ, mediated the relationship between borderline severity and interpersonal and self-functioning in patients with BPD (Rishede et al., 2021).

Mentalization Scale (MentS)

The Mentalization Scale (Dimitrijević et al., 2018) was designed to measure mentalization as a personality trait and refers to its key indicators in relation to the mentalization theory elucidated by Fonagy and his team. The items in the questionnaire are taken from the Reflective Functioning Scale manual (Fonagy, Target, et al., 2002), the Handbook of Mentalization-Based Treatment (Allen, 2006), as well as the Revised Questionnaire for Attachment Assessment (Hanak, 2004). Serbian and German researchers had developed the original version of the questionnaire, with the original validation study involving Serbs. So far, studies using the English, German and Polish versions of the

measure have been published (Dimitrijević et al., 2018; Jańczak, 2021a; Richter et al., 2021).

Administration and Scoring Procedure

The questionnaire consists of 28 sentences which are rated by the respondent on a 5-point Likert scale (from 1 for *completely incorrect* to 5 to *completely correct*). The MentS score is the sum of the points for each subscale and the sum of points for the entire questionnaire (overall score). Ten items are scored in an inverted manner.

MentS has three subscales:

1. Self-Related Mentalization (MentS-S), e.g., "Often I cannot explain, even to myself, why I did something."
2. Other-Related Mentalization (MentS-O), e.g., "Usually I can recognize what makes people feel uneasy."
3. Motivation to Mentalize (MentS-M), e.g., "I find it important to understand reasons for my behavior."

Psychometric Properties

The psychometric properties of the original version of the measure were tested in nonclinical and clinical groups of people diagnosed with borderline personality disorder (Dimitrijević et al., 2018). The internal consistency for the entire questionnaire was $\alpha = .84$ for the nonclinical group and $\alpha = .75$ for the clinical group. Similarly, for the subscales, the indices were satisfactory ($\alpha = .74$–$.79$) in the nonclinical group, but lower in the clinical group ($\alpha = .60$). The measure was validated by testing the relationships between mentalization and emotional intelligence, attachment, empathy, and the Big Five traits. In line with the hypotheses, gender differences were found, with women mentalizing better than men. The clinical usefulness of MentS was also demonstrated, with higher results in the control group than those with a borderline personality disorder. Additionally, the MentS-S subscale predicted classification to the group (individuals with borderline personality disorder vs. controls).

In studies involving psychiatric patients, MentS showed a high positive correlation with the results of the Reflective Functioning Scale ($r = .65$, for the overall score), which constitutes an even stronger piece of evidence for the validity of this scale and its similar field of meaning with mentalization in the sense described by Fonagy and his team (Richter et al., 2021). These strong correlations demonstrate that MentS can be used as a supplement of the Reflective Functioning Scale, to differentiate the results in terms of subscales (self, others, and motivation to mentalize). In some cases, for example, when time-consuming interviews are not feasible, MentS can be used as an alternative to RFS. Reliability values were also obtained in this study, which turned out to be lower than in the original studies ($\alpha = 0.66$ for the overall score, and 0.56–0.80 for the subscales). These low results are probably associated with the study group, which consisted of psychiatric patients with severe psychopathology (psychotic patients, patients recently admitted to the ward, and patients whose pharmacological treatment was still being established).

Research Findings

In addition to the s already cited validation studies (Dimitrijević et al., 2018; Jańczak, 2021a; Richter et al., 2021), MentS has been used in studies relating mentalization and personality organization with risky driving (Seydi et al., 2019). In the Polish validation study, the reliability analysis showed high internal consistency of all three subscales of the MentS questionnaire and the three-factor structure of the questionnaire. Individuals with borderline features scored worse on the MentS-S subscale than people in the nonborderline sample.

The Mentalized Affectivity Scale (MAS)

The term mentalized affectivity was introduced by Jurist (2005). Referring to the affective dimension of mentalizing, this concerns the ability to recognize and elaborate emotional experiences. This is the most sophisticated and developmentally advanced form of emotional

regulation in which new meanings are created by ruminating on one's emotional experience. Mentalized affectivity comprises three components: recognition of emotional states, the ability to process them, and the expression of emotions (Allen et al., 2008; Fonagy, Gergely, et al., 2002; Rinaldi et al., 2021). The Mentalized Affectivity Scale by Greenberg et al. (2017) was designed to measure these particular aspects of mentalizing. Rinaldi et al. (2021) pointed out the main differences between mentalized affectivity as measured by MAS and mentalization as measured by the Reflective Functioning Questionnaire: the former relates to the elaboration of current emotional experiences to a greater extent, while the latter concerns the reinterpretation of important past experiences. In addition, the Reflective Functioning Questionnaire mainly focuses on identifying impairments in mentalization, while MAS covers the entire spectrum from disturbed to optimal mentalizing. Both the original English version of the MAS and the Italian version have now been published (Rinaldi et al., 2021), besides being available in the online version as well. Additionally, the scale has been translated into ten languages and its authors plan to use it to study cross-cultural differences in mentalization (Jurist & Sosa, 2019). A study of a shortened version of the measure, the Brief Mentalized Affectivity Scale, B-MAS, has also been published recently and has shown promising results (Greenberg et al., 2021).

Administration and Scoring Procedure

The MAS consists of 60 items rated on a 7-point Likert scale. The measure consists of three subscales:

1. Identifying Emotions, e.g., "Understanding my emotional experience is an ongoing process"
2. Processing Emotions, e.g., "When I am filled with a negative emotion, I know how to handle it"
3. Expressing Emotions, e.g., "I often keep my emotions inside" (item with reversed scoring)

The MAS is scored for each subscale and for the overall score.

Psychometric Properties

In the original validation studies, factor analysis confirmed the three-factor structure of the measure (Greenberg et al., 2017); however, a later study with the Italian version of the questionnaire found as many as five factors (Rinaldi et al., 2021). Cronbach's α reliability indices were high: in the original studies, α was over .90 for all subscales other than Expressing emotions (α = .88). The Italian version was found to have slightly lower indices, but all above α = .70 (Rinaldi et al., 2021). The questionnaire could differentiate between a control group and a clinical group of people with various psychiatric disorders (Greenberg et al., 2017). Interestingly, the clinical group scored higher with respect to recognizing emotions and lower in terms of processing them. Validation studies confirm the theoretical relationships between the MAS score and personality traits in the Big Five model, life satisfaction indices, self-efficacy, and trauma experience (Greenberg et al., 2017; Rinaldi et al., 2021). MAS is also correlated with the results of the Reflective Functioning Questionnaire, emotional dysregulation, and empathy, which confirms the validity of the measure. No studies using this scale, other than validation studies, have been published to date.

Metacognitive Self-Assessment Scale (MSAS)

The Metacognition Self-Assessment Scale (Pedone et al., 2017) is one of three measures developed by an Italian team working on metacognition. The other two measures: Metacognition Assessment Scale-Revised and Metacognition Assessment Interview, are described in Chapter 10, which deals with interview coding systems. Since MSAS has been developed based on these measures and is the least used of them so far, I expound on its theory of metacognition in that chapter. Here I will succinctly elucidate the questionnaire itself. So far, studies of Italian (Pedone et al., 2017) and Portuguese versions of the measure (Faustino et al., 2021) have been published.

Administration and Scoring Procedure

The MSAS consists of 18 items. Each is scored on a 5-point Likert scale (from 1 = *never* to 5 = *almost always*). The time required to complete the questionnaire is 10 to 15 minutes. The raw scores range from 18 to 90; the higher the score, the better the level of metacognition. The MSAS comprises three main subscales and the next five abilities capturing more specific skills. The metacognition subscales common to all three measures are presented in detail in Table 5 (p. 75).

1. Understanding one's own Mental States: monitoring (three items), differentiation (two items), and integration (two items)
2. Understanding the Mental States of Others: monitoring (three items) and decentration (three items)
3. Mastery: using knowledge about mental states to solve psychological and interpersonal problems (five items)

Psychometric Properties

Reliability in the original validation studies was satisfactory (α = .88 for the whole scale). Satisfactory indices of test–retest reliability were also obtained (Faustino et al., 2021). The questionnaire was shown a three-factor structure: the first factor is monitoring and integration (the self-dimension); the second is differentiation and decentration (the other dimension); and the third is regulation and ability to control (mastery). A similar structure was obtained in an analysis of the Portuguese version of MSAS (Faustino et al., 2021). The literature does not contain any data on the relationship between MSAS scores and other mentalization assessment tools. The MSAS results differentiated between a subclinical group (people who stated that they had received a clinical diagnosis) and a nonclinical group (Faustino et al., 2021). No studies using this scale, other than validation studies, have been published to date.

The Multidimensional Mentalizing Questionnaire (MMQ)

The Multidimensional Mentalizing Questionnaire (Gori et al., 2021) is a new questionnaire designed to measure mentalization in terms of the four dimensions described by Fonagy. These are: (a) cognitive/emotional mentalizing, (b) mentalizing about oneself/others, (c) mentalizing on the basis of internal/external features, and (d) controlled/automatic mentalizing. The MMQ items were formulated based on the most recent edition of a Handbook of Mentalizing in Mental Health Practice (Bateman et al., 2019). The measure was originally written in Italian and so far, only this version has been validated. To date, only one paper has been published on this measure, but we might hope that its satisfactory parameters and uniqueness in measuring the dimension of mentalization will help it gain popularity in the years to come.

Administration and Scoring Procedure

The MMQ consists of 33 questions belonging to one of six subscales. Each item is rated on a 5-point Likert scale, from 1 = *not at all* to 5 = *to a great deal*. The first three subscales reflect optimal mentalization: reflexivity, ego strength, and relational attunement; the next three are negatives of the first three: emotional dyscontrol, distrust, and relational discomfort. The authors present a complex theoretical model explaining the relationship between the four dimensions of mentalization and the MMQ subscales distinguished by the analysis.

Psychometric Properties

The validity of the questionnaire has been tested and theoretical relationships with attachment, alexithymia, and the personality traits of the Big Five Model were demonstrated. The reliability is high and ranges from $\alpha = .72$ to $\alpha = .89$ depending on the subscale. The clinical sample (people with various ICD-11 diagnoses, including psychotic, mood, anxiety, and personality disorders), though relatively small ($N = 46$), achieved lower results than the control group. To further prove

the validity of the measure, research should be carried out among people with personality disorders, so that the sensitivity of the measure in differentiating the level of mentalization among patients with various types of psychopathology can be demonstrated. No studies using this scale, other than validation studies, have been published to date.

9. Performance-Based Methods

Unlike the questionnaires presented above, performance-based methods—and particularly the two I present here, Reading the Mind in the Eyes and the Movie for the Assessment of Social Cognition—have been used in mentalization research for many years. Both measures, although originally designed to measure the theory of mind in people with autism, have been successfully incorporated as measures of mentalization in people with personality pathology, especially borderline personality disorder (a meta-analysis in Németh et al., 2018). These types of measures are fairly simple and quick to administer: they are usually computer-based, which not only ease the assessment procedure but also reduce the likelihood of errors related to the measure administering. These measures usually do not require any specialized training for the investigator and are generally available, even in the online version. Performance-based tools measure various dimensions of mentalizing: in Luyten's comparison, they refer to almost all dimensions, being the only ones that measure mentalizing focused on the external features (Luyten et al., 2019). These measures are an important supplement to questionnaire methods on one hand and to interview coding systems on the other. They are based on objective perspective and use highly standardized measurement methods; they are also characterized by satisfactory psychometric properties. As these methods can be easily used in the nonclinical context, the Reading Mind in the Eyes and Movie for the Assessment of Social Cognition have been used to measure mentalization in healthy subjects, which facilitates comparisons between clinical and nonclinical samples.

Reading Mind in the Eyes Test (RMET)

The RMET (Baron-Cohen et al., 2001) was designed to measure subtle differences in sensitivity to social stimuli and was initially used to differentiate between individuals with autism spectrum disorders and healthy individuals. Drawing on the assumption that people mainly use information from part of the face around the eyes to infer about the complex mental states of others (unlike, for example, basic emotions, which are interpreted based on the facial expression of the whole face; Ragsdale & Foley, 2011), this test presents the subject with photographs showing just this part of the face. The RMET also requires knowledge of the semantic meaning of words relating to mental states. It allows measurement of the degree to which subjects are able to put themselves in the mind of another person, adjusting to his or her mental state, which is the basis for the ability to assign mental states to people and predict their behavior in the long run. Baron-Cohen describes this ability as a relatively automatic and unconscious process that allows information about social stimuli to be decoded without further cognitive processing of mental content; it is intended to refer to the perceptual aspect of the theory of mind and emotion recognition (Baron-Cohen et al., 2001). In studies using the RMET, the authors mention various theoretical constructs: mentalization (Samur et al., 2018), theory of mind (Németh et al., 2018; Vellante et al., 2013), and mind-reading (Domes et al., 2007). The cultural context of the test application has also been discussed in the extant literature (Van Staden & Callaghan, 2021; Vellante et al., 2013). Various versions of the measure have been developed, including versions using photos of black people (Handley et al., 2019) and people of Asian descent (Adams et al., 2010). The test has been validated in many language versions, including French, Turkish, Hungarian, Japanese, Polish, and Bengali (Chakrabarty et al., 2021; Cohen et al., 2015; Lee et al., 2020; Jankowiak-Siuda et al., 2017; Redondo & Herrero-Fernández, 2018). There is also a version for children (Pahnke et al., 2020).

Administration and Scoring Procedure

The test comprises 36 photos showing the area around the eyes of several male and female adults, which can be presented on paper or on a computer screen; an online version is widely used as well. The task is to choose one of the four words describing complex mental states that best elucidate the state of the person shown in the photo (e.g., irritated, bored, scared, friendly, attentive), without imposing any time limit on the answer. In the original version of the measure, participants were provided with a glossary, in case they did not know the words used in the test. They can also ask the researcher about the meaning of a word. Each correct answer is equivalent to one point. The sum of all points is the total score in the test (maximum 36 points). The higher the overall score, the better the mentalization. Separate scores can also be calculated for positive, negative, and neutral mental states.

Psychometric Properties

Reliability values for this measure have been relatively rarely reported in the literature. Cronbach's alpha was not reported in the original validation study (Baron-Cohen et al., 2001). In later studies, unsatisfactory values were typically reported ($\alpha < .70$ in the Vellante et al. 2013), although a more recent study indicates a value of $\alpha = .78$ (Black, 2019). Doubts have also been raised on the single-factor structure of the measure (Black, 2019; Olderbak et al., 2015). Reliability, measured by the test-retest, is satisfactory (*rtt* = .833; Vellante et al., 2013). The validity was initially confirmed by examining the relationship between the RMET and various indicators of cognitive functioning. The research findings indicate that RMET is associated with executive function (attention and behavioral inhibition), empathy, and social skills, as well as intelligence (Olderbak et al., 2015; Vellante et al., 2013). Recently, the validity of RMET in measuring mentalization as described by Fonagy and his team has also been ascertained: a negative relationship has been identified between RMET performance and insecure attachment, including in the context of borderline personality disorder and the ex-

perience of early childhood trauma (Baskak et al., 2020; Fossati et al., 2014; Ghiasi et al., 2016; Van Heel et al., 2019).

Research Findings

A very large number of studies using this tool have been mentioned in the literature. The RMET has been used in measuring mentalization in people from many clinical groups: with autism spectrum disorders, with schizophrenia, with depression, with anorexia, and with brain injury. These groups have been found to perform worse than healthy individuals (Baron-Cohen et al., 2001; Craig et al., 2004; Irani et al., 2006; Vellante et al., 2013). Research using RMET has also been carried out on people with personality disorders. Generally, these studies showed no worse functioning among people with antisocial and schizotypal personality disorder (Gooding & Pflum, 2011; Pflum et al., 2013; Richell et al., 2003). On the other hand, the results in borderline personality disorder sample mostly indicate that they do better than healthy individuals (Fertuck et al., 2009; Frick et al., 2012; Ghiasi et al., 2016; Scott et al., 2011); however, no differences were observed between these groups in some studies (Schilling et al., 2012). But there are also results indicating worse mentalization as measured by RMET in borderline samples (Fossati et al., 2014; Goueli et al., 2019; Van Heel et al., 2019). These differences may be attributed to the different study groups (patients with borderline personality disorder vs. nonclinical patients with borderline features), as well as differences in the range of stimuli measured (positive, negative, or neutral). Such nebulous results may support the hypothesis that the RMET measures, at least partly, different aspects of mentalizing than the ones developed in the research tradition of Fonagy and his team. Another inference could be that the RMET encompasses the ability to recognize emotions, which is only one element of mentalizing. The RMET is also used to measure mentalization in people in nonclinical groups by determining what factors improve mentalization (e.g.(Black, 2019; Kidd & Castano, 2013; Samur et al., 2018); however, this use has been criticized because the test difficulty is not suited to people who mentalize well (Black, 2019).

Comments on the Measure

Various authors have pointed out the weaknesses of the RMET: the results of some studies cannot be replicated, and the results achieved in subsequent attempts differ from those of the original studies (Black, 2019). This seems to be grounded in the relatively small differentiation of the studied groups and of the methods used, as well as in other variables that are not measured in the research (Panero et al., 2016, 2017). Due to its relatively simple structure, the RMET does not capture dynamic changes in mentalization and is unsuitable for investigating subtle differences in mentalization between people from different clinical groups. This measure has also been criticized for the static nature of the stimuli used, given that social situations in a natural context are innately dynamic and changeable. Therefore, the question arises whether it is more a measure of emotional recognition than a complex theory of mind, as indicated by some studies (Oakley et al., 2016). Research using item response theory (IRT; Black, 2019) has shown that the RMET is not a good measure for measuring advanced social cognition in healthy subjects. It does not respond to subtle differences among people with medium to high levels of mentalization. RMET is thus better suited for the study of people with social cognition deficits.

Movie for the Assessment of Social Cognition (MASC)

The Movie for the Assessment of Social Cognition (Dziobek et al., 2006) was developed in the context of the theory of mind research for use in people with autism and Asperger's syndrome. However, it has been successfully used in research on mentalization impairments in the context of personality disorders. Recent studies (Fossati et al., 2018) have confirmed that mentalization, as measured by MASC, is consistent with the theoretical model of Fonagy and his team. MASC is intended to determine the ability to recognize mental states in complex situations close to the everyday real context—primarily related to close romantic relationships and friendships (Dziobek et al., 2006). The endeavor is to recognize the character's mental state in the film based on the cues provided by complex signals: the verbal

aspect of the statement, the facial expression, the body posture, and gestures. It gauges understanding of complex social situations and mental states, such as irony, sarcasm, hidden social rules, mistakes, and faux pas. The measure was originally developed in German and has been validated in English, Spanish (Lahera et al., 2014), Italian (Fossati et al., 2018), Arabic (Goueli et al., 2019), and Polish (Putko & Andrzejewska, 2014).

Administration and Scoring Procedure

The MASC battery presents the subject with a 15-minute film, divided into 42 short segments comprising four scenes, in which four people meet for dinner. These short scenes are mainly interactions between a woman and a man in the context of a romantic relationship and between women in the context of friendship. Participants are asked to recognize what the characters feel and think. As the movie stops, the participant is asked to provide the correct answer to a question displayed on the screen. The measure consists of 46 single-choice questions regarding the feelings, thoughts, or intentions of the characters, such as "Why is Michael saying this?", "What does Michael think Chris is laughing about?", and "What does Sandra feel?" The measure also includes six control questions that test basic cognitive functions to control for the concentration and understanding of the task. The time allowed for answering each question is 30 seconds. Fifteen MASC questions relate to understanding emotions, fourteen to understanding intentions, and four to understanding thoughts. Only one answer in four is correct, corresponding to accurate mentalizing. The others correspond to errors that can be classified as one of the three mentalizing errors: hypermentalizing (assigning a mental state that is not present: overinterpreting mental states), undermentalizing (not assigning a mental state where one is present: an inability to attribute mental states), and non-mentalizing (no reference to mental states, but only to the physical basis of behavior). The MASC score is the sum of all correct answers: the overall score (overall mentalization level, from 0 to 45 points) and an index of each of the three mentalization errors. Separate mentalization scores can also be calculated to better understand emotions, intentions, and thoughts.

The authors indicate that the total duration of the study ranges from 45 to 70 minutes, although this seems to be somewhat overstated.

Psychometric Properties

MASC is characterized by high interrater reliability (ICC = .99) and by high test–retest reliability (r = .97; Dziobek et al., 2006). The reliability is α = .86 for the overall score (Lahera et al., 2014; Preißler et al., 2010). Validation studies have been conducted using the complex theory of mind assessment tools, which indicated significant correlations with MASC (Dziobek et al., 2006; Lahera et al., 2014; Müller et al., 2016). Lower levels of mentalization were also determined in people with autism as compared to those in healthy people. Further studies confirmed that MASC also differentiates borderline patients from controls (Goueli et al., 2019; Preißler et al., 2010; Sharp et al., 2011) and is linked to other mentalization measures and borderline features in general (Fossati et al., 2018; Ha et al., 2013). The relationship between mentalization as measured by MASC and attachment and emotional dysregulation has also been demonstrated (Sharp et al., 2011), including against the backdrop of experimentally activating a specific attachment representation (Fuchs & Taubner, 2019).

Research Findings

At present, MASC is one of the most widely used measures of mentalization in various clinical groups. Studies have shown reduced mentalizing in people with autism spectrum disorders (Boada et al., 2020; Dziobek et al., 2006), schizophrenia spectrum disorders (Martinez et al., 2017; Montag et al., 2011), Alzheimer's disease (Scheidemann et al., 2016), bipolar disorder (Santos et al., 2017), and eating disorders (Brockmeyer et al., 2016; Monteleone et al., 2020). Meanwhile, no deficits have been observed in people with narcissistic personality disorder (Ritter et al., 2011), depression (Wilbertz et al., 2010), or high levels of social anxiety (Lenton-Brym et al., 2018). Most studies have also indicated reduced mentalizing in people with borderline personality

disorder (Fossati et al., 2018; Goueli et al., 2019; Preißler et al., 2010), mainly pointing to a high level of hypermentalization (Kvarstein et al., 2020; Normann-Eide et al., 2020; Sharp et al., 2011). A relationship has also been demonstrated between mentalization and the experience of early childhood trauma (Duque-Alarcón et al., 2019). It is also used to measure mentalization in adolescents (Duval et al., 2018; Fossati et al., 2018; Sharp et al., 2011). The usefulness of this measure has also been ascertained nonclinical groups, including measuring mentalization in psychotherapists and other mental health professionals (Hassenstab et al., 2007; Steinmair et al., 2021).

10. Interviews and Narrative Coding Systems

The Reflective Functioning Scale, a coding system designed to assess mentalization in the Adult Attachment Interview, was the first tool to emerge for measuring mentalization based on the theoretical foundations of P. Fonagy and his team (George et al., 1985). A few years later, Semerari and colleagues developed the Metacognition Assessment Scale to measure metacognition in treatment session records. Both of these measures capture online relational mentalizing in high emotional arousal (see, e.g., Chapter 2). The high utility of this type of measure seems unassailable due to assessment features that cannot be obtained with other methods. As Taubner et al. (2013) posit, only an interview allows the participant to apply a unique method of communication, without limiting the possible answers to a closed set of options. Only with the narrative methods is it possible to observe mentalization in the process that results from the interaction between the participant and the interviewer. We can observe how they interact with each other and how mentalization changes depending on the different properties of the relationship. On the other hand, many authors have listed the limitations of interview coding systems, especially concerning their lack of economy: they require relatively large time, human, and financial inputs.

An important issue related to interview coding systems is the type of stimulus material that is assessed. For this purpose, the first measure used was the Adult Attachment Interview, which is still the most commonly used method to rate mentalization by the Reflective Functioning

Scale. On the other hand, the Metacognition Assessment Scale-Revised was originally used to evaluate records of psychotherapeutic sessions. With an increasing number of studies using these measures, the range of possible applications of coding systems in terms of stimulus material continues to expand. Both measures are currently used to rate psychotherapeutic sessions and structured interviews. The interviews specially designed for this purpose have been lately introduced as well.

Reflective Functioning Scale (RFS)

The Reflective Functioning Scale (RFS; Fonagy, Target, et al., 2002), which was developed in parallel with studies investigating the relationship between mentalizing and borderline personality disorder, is now considered the gold standard for measuring mentalization. Originally applied to the Adult Attachment Interview (AAI, George, Kaplan, Main, 1985), it is also used for other structured interviews, e.g., Parental Development Interview (Slade et al., 2004), as well as in therapeutic sessions and narratives about the Thematic Apperception Test pictures (Luyten et al., 2011). A structured interview, the Brief Reflective Functioning Interview (BRFI; Rutimann & Meehan, 2012), has also been developed specifically to measure RFS; this significantly shortens the time of interview from about 1.5 hours for the Adult Attachment Interview to about 25 minutes for the BRFI. It is also used to evaluate the mentalization of specific topics, including trauma (Ensink et al., 2014), parenthood (Anis et al., 2020), and specific psychopathological symptoms, such as panic (Rudden et al., 2009; Rudden et al., 2008). Furthermore, RFS is used for elaborate mentalization evaluations in individual speech sequences (de la Cerda et al., 2019). The scale has been used as one of the methods for determining the level of personality pathology in the Alternative Personality Disorder Model (AMPD) in DSM-5 (American Psychiatric Association, 2013; Bender et al., 2011), and studies have confirmed that mentalization, as measured by RFS, is strongly correlated with Criterion A of AMPD (Zettl et al., 2020).

The RFS is based on the work of Main (Main et al., 1985), who described metacognitive functions against the backdrop of the attachment relationship. The reflective function (RF) develops in the interpersonal

context: it is a developmental achievement that depends on the emotional climate of the relationship between the child and the caregiver. The authors of this measure indicate that the reflective function is a psychological process underlying the mentalization, and relates to both the intrapersonal and interpersonal aspects of mentalizing: awareness and understanding of one's own mental states as well as the ability to perceive other people as having thoughts, emotions, and desires (Benbassat & Priel, 2012). Mentalization, in this sense, denotes the ability to understand oneself and others in terms of mental states, such as feelings, beliefs, and intentions. It has a fundamental influence on the experience of the individual's psychological reality and relationships with other people. An individual with a high level of mentalization, as determined by the RFS, has no problems differentiating between internal and external reality, or between their own and other people's mental processes. Such a person is aware of the ambiguous nature of mental states, attempts to decipher the mental states that lead to specific behaviors, and recognizes the dynamic aspects of mental states over time (Fonagy et al., 2011; Luyten et al., 2019; Target, et al., 2002).

Administration and Scoring Procedure

The interview is transcribed and then rated following the RFS manual. Assessment of the reflective function embraces four categories: (a) awareness of the intentional, ambiguous, and dynamic nature of mental states, (b) striving to understand one's own and other people's mental states, (c) awareness of the developmental variability of mental states, (d) referring to the mental states of the person carrying out the interview. The interview transcript's evaluation primarily involves the answers given by the respondent to questions directly related to the understanding of mental states (demand questions), such as "Why did your parents behave this way when you were a child?", "Has your relationship with your parents changed since childhood?", "Did you feel rejected as a child?" (Fonagy et al., 2002). Some responses to open-ended questions are also evaluated. Each answer is rated on an 11-point scale (see Table 4). The final result is a comprehensive assessment of the functioning of the participant, assembled based on the data from the entire interview.

Table 4
Assessment of Mentalization in the Reflective Functioning Scale

Scoring	Description
-1	negative RF; response completely inadequate to the context, bizarre and irrational or marked by hostility
1	no RF; however, there is some attempt at an adequate response that refers to specific explanations of behavior, generalizations, or clear distortions of reality
3	low RF; the answer may refer to mental states, but the subject does not have a deep understanding of the spoken words; there may also be clichéd, stereotypical statements
5	average RF; the answer clearly refers to the understanding of mental states, but it is relatively simple, lacking much awareness and insight
7	good RF; the statement about mental states is multidimensional, original, extremely complex, or describes a cause-and-effect sequence
9	exceptional RF; the answer meets the criteria for a good response even with regard to extremely difficult topics, can be very personal and reflective, and may concern many aspects of the person's and other people's emotions and beliefs.

Note. Based on Fonagy et al. (2002).

Psychometric Properties

RFS has good psychometric properties that have been replicated in many independent studies. Inter-rater reliability is good, ranging from ICC = .71 (Taubner et al., 2013) to ICC = .86 (Levy et al., 2006). The RFS score is stable over time with $r = .64$, $p < .001$ for the overall score (Taubner et al., 2013). Studies have also confirmed the utility of assessing RFS as a single score, although factor analysis indicates two correlated aspects: mentalizing about the past and mentalizing about current relationships. The validity of RFS has been confirmed by demonstrating its relationship with attachment as well as other narrative measures of mentalization and affect elaboration (Bouchard et al., 2008; Fonagy et al., 2011; Target, et

al., 2002). The RFS score differentiates between people with borderline personality disorder and the control group (Fischer-Kern et al., 2010) and is associated with a low personality organization according to the psychodynamic diagnosis (Fischer-Kern et al., 2010; Müller et al., 2006).

Research Findings

The Reflective Functioning Scale has been widely used in many studies on the level of mentalizing in clinical and nonclinical groups (see Katznelson, 2014 for a review). A large number of studies concerned individuals with personality disorders, especially those with borderline personality disorder (Diamond et al., 2014; Fischer-Kern et al., 2010, 2015; Fonagy, 1996; Johansen et al., 2018; Sharp et al., 2020). Low RFS scores have been observed in people with anorexia (Pedersen et al., 2012; Ward et al., 2001), depression (Fischer-Kern et al., 2013), and psychotic disorders (Boldrini et al., 2020). Correspondingly, White et al. (2013) have shown that a deficit of mentalization as measured by RFS mediates the relationship between the behaviors related to instrumental aggression and high levels of psychopathic traits. RFS score also mediate the relationship between the experience of early childhood trauma and psychopathology in adulthood (Chiesa & Fonagy, 2014). Research shows that a mother's reflective function predicts the child's attachment security and level of mentalizing later in life (Fonagy et al., 1991; Meins et al., 2001; Slade & Ruffman, 2005). On the other hand, research on psychotherapy shows that the level of reflective function increases as a result of psychotherapy and is associated with the improved interpersonal and general functioning of patients, although it does not reduce psychopathological symptoms (Chiesa et al., 2021; Fischer-Kern et al., 2015; Levy et al., 2006).

Comments on the Measure

The literature commonly mentions certain limitations of research using RFS. First of all, the single mentalization score does not reflect the diverse, multifaceted nature of mentalization proposed in the theoretical

assumptions underlying the measure (Choi-Kain & Gunderson, 2008; Fossati et al., 2018). Hence, it is not possible to identify the differences in mentalization dimensions between different clinical samples or to define specific profiles of mentalization with regard to its various aspects. According to some authors, RFS is more related to mentalizing about others than about oneself (Dimitrijević et al., 2018). In addition, it is an extremely time-consuming measure that requires the evaluation of extensive interview transcripts or treatment sessions. Furthermore, the researchers also need to undergo costly training that is available only at a few sites in Europe; this makes use of the relatively uncommon scale and renders it difficult to use for research purposes. Fertuck et al. (2012) presented a computer program for automatic content analysis in terms of SFR. The results are promising and indicate that it may be a good, less demanding alternative to manual interview coding (Ilagan et al., 2021).

Metacognition Assessment Scale-Revised (MAS-R)

Three measures were developed for the study of metacognition in this approach: in order of creation, these are the Metacognition Assessment Scale-Revised, the Metacognition Assessment Interview, and the Metacognitive Self-Assessment Scale (described in Chapter 8). According to Semerari and colleagues (2003), metacognition is the ability to recognize draw inferences about mental states. The theoretical background of all three measures goes back to mentalization described in the context of attachment (Fonagy, Target, et al., 2002), as well as to notions of metacognition (Flavell, 1979), metarepresentation (Sperber, 2000), and cognitive theory of mind (Baron-Cohen et al., 1985). Although the original concept of metacognition is not equivalent to mentalization, the authors emphasize similar understandings of both concepts and use them almost interchangeably referring to mindreading, metacognition, or mentalization (Carcione et al., 2019). The main difference between metacognition and mentalization in Fonagy's model, which is emphasized by the authors of the metacognition measures, is that metacognition assumes a nuanced, dimensional measurement of mentalization, thus determining its level on several different subscales.

These components are partially independent of each other and have different neuroanatomical backgrounds (Carcione et al., 2010). Two coding systems differing in their assessment procedures are used to measure metacognition: the Metacognition Assessment Scale-Revised (Carcione et al., 2010) and the Metacognition Assessment Interview (Semerari et al., 2012), which is a structured interview aimed at determining the level of metacognition according to the subscales described in MAS-R. Both tools allow for the measurement of changes in mentalizing over time (e.g. during psychotherapy). However, the utilization of these measures entails specialized training. Unlike the Reflective Functioning Scale, it is not commercially available, which makes these measures relatively difficult for researchers to access. In recent years, a questionnaire version of the measure, the Metacognitive Self-Assessment Scale, has also been developed.

Metacognition comprises aspects, the first two of which are identical to the dimensions described by Fonagy et al. (2019), while the third significantly complements it, particularly from the clinical perspective of personality pathology. Following Carcione et al. (2010), these are: (a) recognizing and attributing mental states based on facial expression, somatic states, and behavior; (b) inferring and reflecting on one's own or others mental states; and (c) using knowledge about mental states to regulate one's own behavior, as dealing with intrapersonal and interpersonal conflicts and mental discomfort. Measuring metacognition allows for a nuanced description of how a person functions. In addition to the three main aspects, measuring metacognition also makes it possible to determine mentalizing on detailed subscales (see Tables 5 and 6). Mentalization in this approach refers to the awareness of being distinct from others and perceiving oneself as an intentional subject. It applies equally to cognitive and emotional processes, allowing each one of these dimensions to be measured separately. An individual with a high level of mentalization notices relationships between behavior and internal mental states distinguishes the subjective viewpoint from external reality, and differentiates between different categories of representation (perception, memories, dreams, fantasies). Such a person not only creates a coherent narrative about mental states but also describes changes occurring in his or her own subjective experience depending on the context.

At this point, I will separately describe the Metacognition Assessment Scale-Revised and the Metacognition Assessment Interview because, despite their shared theoretical background, they are different measures with different procedures and psychometric properties.

Administration and Scoring Procedure

The Metacognition Assessment Scale-Revised is a coding system used to rate therapy sessions, structured interviews (e.g., Adult Attachment Interview), and other narratives about close relationships (Bröcker et al., 2017; Górska, 2015; Marszał, 2015; Semerari et al., 2003). The interview is transcribed and then rated according to the instructions described in the manual (Carcione et al., 2010). When a great deal of material is to be coded (e.g., an entire psychotherapy session), it must be divided into shorter fragments (Dimaggio et al., 2019). The assessor should have clinical experience and be trained in the coding procedure. Some of the transcripts should also be encoded by a second-rater to determine inter-rater reliability in a given sample.

Each item is rated on a 5-point Likert scale from 1 to 5, depending on the level of a given ability as rated by the assessor. A score of 0 for *not applicable* is given when an indicator does not appear in the narration. The score on the MAS-R represents a general metacognitive functioning of the participant (a maximum of 70 points, with five for each of 14 items) or is presented on three subscales: Understanding one's own mental states (maximum thirty points), Understanding others' mental states (maximum twenty points), and Mastery (max. twenty points). Table 5 illustrates the subscales of MAS-R with short descriptions.

Table 5
Subscales of Metacognition Assessment Scale – Revised

	Subscales	Description
Understanding one's own Mental States	Basic Requirements	perceiving one's own mind in terms of a representation system
	Monitoring	distinguishing and recognizing one's own cognitive operations (e.g. memory, imagination, fantasizing, dreaming, craving, anticipating, thinking)
		defining, distinguishing, and naming one's own emotional states
		recognizing the relationship between different aspects of subjective experience
	Differentiation	recognizing one's own thoughts as subjective and differentiating between internal and external reality
	Integration	describing the cognitive and emotional aspects of one's own states of mind in a coherent narrative
Understanding the Mental States of Others	Monitoring	distinguishing and defining other people's cognitive operations
		distinguishing and defining the emotional states of others
		explaining the relationship between the thoughts, emotions, and behavior of others
	Decentration	understanding the mental states of other people regardless of one's own perspective or involvement in relations with them
Mastery	Basic Requirements	describing behavior and psychological processes in terms of solvable problems
	1st level strategies	acting by modifying one's own bodily state
	2nd level strategies	regulating and managing one's own mental states by distracting from thoughts or emotions that cause suffering
	3rd level strategies	using one's own general knowledge of mental functioning to deal with intrapersonal and interpersonal problems

Note. Based on Carcione et al. (2010).

Psychometric Properties

The MAS-R has a good inter-rater reliability, with studies showing ICC = .81 (Carcione et al., 2019; Maillard et al., 2017) or ICC = .781 ($p < 0.000$) for N = 58 (Marszał, 2015). The reliability is high, with $\alpha = .94$ (Maillard et al., 2020). No validation studies have been published for this measure, although many studies have shown its validity to be high, thus signifying the relationship of the results on the MAS-R with the occurrence of mental disorders and pointing toward its predictive role in portending improvement in the course of personality disorders (see below).

Research Findings

In the context of research, MAS-R is primarily used on people with schizophrenia and personality disorders. Given the design of the measure, it is extremely useful in identifying differences in mentalization dimensions. Studies have shown reduced levels of metacognition in patients with personality disorders, especially borderline personality disorder (Jańczak et al., 2021; Semerari et al., 2005, 2015). According to Dimaggio et al. (2007), there are subtle differences in mentalization profiles in the MAS-R subscales for people with narcissistic and avoidant personality disorders. Patients with personality disorders also scored low on the mastery (Carcione et al., 2011) and decentration (Dimaggio, Vanheule, et al., 2009) subscales. Many studies have shown specific mentalization difficulties in people with schizophrenia associated with cognitive functioning and the type of symptoms (meta-analysis in Lysaker et al., 2014). Maillard et al. (2017, 2020) showed improved mentalization in people with borderline personality disorder associated with a reduction in symptoms six months after the end of therapy.

Metacognition Assessment Interview (MAI)

Administration and Scoring Procedure

The Metacognition Assessment Interview (Semerari et al., 2012) was developed on the basis of the indicators described in the MAS-R, but is intended to be easier and faster to use. It is a semi-structured clinical interview used to assess the level of metacognitive abilities. The participant is asked to explicate the most difficult relational experience related to another person that has happened personally to him or her in the last six months. Once the story ends, the examined person answers questions that aim to assess 16 detailed metacognitive subfunctions (see, e.g., Table 6). They are analogous to the items described earlier in the MAS-R, but they have been assigned to the subscales slightly differently. Examples of interview questions include: "What do you think?", "How are you feeling?" (monitoring), "Have you considered other explanations for what happened?" (differentiation), "What do you think she was thinking?" (decentration). During the interview, the researcher assesses each function on a Likert scale on an ongoing basis, from 1 (negative metacognition) to 5 (marked metacognition). The interview takes approximately 45 minutes. The interviewer should have clinical experience and be trained in conducting and rating MAI interviews.

In this way, an overall result is obtained, along with the results on the four subscales of Monitoring, Integration, Differentiation, and Decentration. The MAI thus does not measure the third aspect of metacognition, Mastery, which involves using knowledge about mental states to regulate their behaviors and experiences. The authors say they plan to add this subscale to the MAI, but it has not been implemented so far (Semerari et al., 2012).

Table 6
Subscales of Metacognition Assessment Interview

	Subscales	Description
Understanding one's own Mental States	Monitoring	Recognizing one's own thoughts and beliefs
		Recognizing and verbalizing one's own emotions
		Creating connections between different mental states
		Creating connections between mental states and behavior
	Integration	Describing understandable and consistent connections between thoughts, events, actions, and behaviors
		Describing and explaining changes in mental states
		Create generalized representations about one's own functioning, taking into account the temporal stability of patterns of thinking and feeling
		The ability to reconstruct and describe one's own mental functioning to the researcher: providing enough information, without giving irrelevant or unclear details, maintaining order and consistency in speech
Understanding the Mental States of Others	Differentiation	Seeing one's own image of the world as subjective and questionable
		The ability to present plausible interpretations of events
		Developing and evaluating events (as opposed to impulsive tendencies)
		Being aware of differences between different mental states: dreams, fantasies, imaginations
	Decentration	Recognizing, naming, and verbalizing others' emotional states
		Recognizing, naming, and verbalizing others' cognitive states
		Creating connections between different mental states of others
		Creating connections between mental states and the behavior of other people

Note. Based on Semerari et al. (2015).

Psychometric Properties

Validation studies have confirmed the two-factor structure of the measure (mentalizing about oneself and mentalizing about others; Semerari et al., 2012, 2015). A relationship between alexithymia and interpersonal functioning was established (a weak positive correlation in both cases). The inter-rater reliability was sufficient, albeit slightly lower for some subscales (ICC = .49 to ICC = .72), depending on the item. Cronbach's alpha reliability was $\alpha = .90$ for mentalizing about oneself and $\alpha = .91$ for mentalizing about others (Semerari et al., 2015).

Research Findings

Studies using MAI have shown a relationship between metacognition and the severity of personality disorder (Semerari et al., 2014) and its specific clinical picture (Bilotta et al., 2018; Moroni et al., 2016; Semerari et al., 2014, 2015). A higher MAI score turned out to be a predictor of improvement in the course of personality disorders in the course of psychotherapy (Carcione et al., 2019). Studies on a large sample size of individuals with personality disorders showed specific metacognitive deficits in people with narcissistic traits (Bilotta et al., 2018) and avoiding personality disorders (Moroni et al., 2016; Pellecchia et al., 2018). On the other hand, in a group of healthy people, the level of metacognitive skills has been shown to reduce due to a sense of failure in the context of competition (Colle et al., 2020). These findings uncover a gamut of contexts for the MAI study: the use of this measure to duplicate measurements in a group of healthy subjects and to identify subtle differences among people in different clinical groups.

Comment on the Measures

In recent years, the number of studies using MAI rather than MAS-R has increased steadily. Both these measures are similar, particularly regarding the construct they measure, but the differences between them are significant and should be considered when deciding whether to use

one of them. The structured interview actively evokes specific skills to be assessed. We can thus assume that the examined person has the opportunity to show his or her metacognitive abilities. In cases where these abilities are not exhibited, it is attributed to the deficits within the examined person, and not (as in the case of MAS-R) because certain threads were not touched upon for other reasons. This offers a bit more certainty about the complete picture of the metacognitive skills measured. The result in MAI, therefore, refers to the best possible metacognitive abilities of the examined person, as stimulated by the interview and the research situation, which will not necessarily coincide with his or her level of mentalization in everyday life. Considering the procedure and duration, the MAI interview requires less work, as it does not need to be recorded and transcribed.

A separate issue in measuring metacognition is that the construction of the measures, assessing each subfunction, leads to a floor effect. Put differently, these measures do not seem to sufficiently describe mentalization deficits. According to the MAS-R or MAI, a deficit refers to poor or lacking development of a certain ability, such as decentration; however, there are no items that describe what is present in the narrative (we only know what is not present). In quantitative analysis, this translates into low scores on all or some of the MAS-R subscales (e.g., 1 to 2 points for each item). This is complemented by the qualitative narrative analysis, which allows us to observe how these deficits specifically manifest (Dimaggio, Carcione, et al., 2009; Jańczak et al., 2021).

11. Clinician Rating Scales

Clinical assessment measures are a new group of research methods. So far, the clinical evaluation has been represented by two measures: Mentalization Imbalances Scale (Gagliardini et al., 2018) and Modes of Mentalization Scale (Gagliardini & Colli, 2019). Both measures are based on the therapist's assessment of the patient's mentalization level, although some modifications to this scheme also occur, as described below. These are important propositions that bridge the gap between self-report, performance-based, and interview coding systems, making it possible to measure mentalizing from a clinician's standpoint in pro-

fessional contact with the subject. Thus, they are, to some extent, observational measures. This approach seems very promising. Its authors aimed to create a measure that would not be encumbered by the main disadvantages attributed to questionnaire methods and interview coding systems. It should therefore be easy to administer, measure multiaspect mentalizing, and not be based on the self-awareness of subjects, as they may not be aware of their mentalizing problems in many cases. The assumptions and psychometric properties of these measures are very promising, and it is hoped that they will become popular.

In most studies, both scales are used jointly, so there is some overlapping information on the Mentalization Imbalances Scale and the Modes of Mentalization Scale. Both scales were originally written in Italian, and the English versions have not yet been validated. I have been informed that German and Korean versions are in preparation. The scales were designed to allow a therapist to assess the patient's mentalization after a minimum of four psychotherapeutic meetings. In validation studies, they were also used to evaluate the transcripts of therapeutic sessions (carried out by other therapists), achieving slightly worse psychometric properties in this context. The authors have prepared and are currently validating an observer-based version of the measures. The coding manual will contain systematically assessed mentalization indicators, which will facilitate the use of these measures in the context of encoding verbal material (recording therapy sessions). For both tools, the therapist's evaluation of the patient requires approximately fifteen minutes, while approximately one hour is needed for the evaluation of the treatment session record. Information specific to each of the scales is presented below.

Mentalization Imbalances Scale

The Mentalization Imbalances Scale (MIS; Gagliardini et al., 2018) is based on the model of Fonagy and his team. It is intended to measure mentalization on four dimensions (self-other, cognitive-affective, internal-external, and automatic–controlled). MIS is premised on the assumption that mentalization difficulties manifest as imbalances in these dimensions, in the form of the dominance of one pole over the

other (e.g., mentalizing cognitive content without emotions or vice versa). This is reflected in the MIS subscales, as described below.

Administration and Scoring Procedure

The MIS scale consists of 22 questions rated on a 6-point Likert scale, from 0 (*absolutely not descriptive*) to 5 (*absolutely descriptive*). The six MIS subscales refer to an imbalance in mentalization in relation to one of its aspects. Thus, there are the following subscales:

a) Imbalance in mentalizing about the self: excessive focus on one's own mental states makes it impossible to recognize the mental states of other people, e.g.,
"P. can't assume other people's perspective when reflecting on behaviors."
b) Imbalance in mentalizing about others: excessive focus on mental states of other people, ignoring one's own, e.g., "P. can easily be influenced by other people's emotions."
c) Imbalance in mentalizing about emotions: excessive emotional arousal not balanced by cognitive operations, e.g., "P.'s emotions overcome his/her capacity to think."
d) Imbalance in mentalizing about cognitive operations: excessive focus on the cognitive dimension of mentalizing not balanced by the emotional aspect, e.g., "Even when discussing painful feelings, P. seems to be detached."
e) Imbalance in automatic mentalization: a tendency to automatically and unconsciously recognize mental states, not balanced by the ability to deliberately and reflectively reason, e.g., "P. fails to reflect on the first impression he or she has of a person or a situation."
f) Imbalance in mentalization based on physical characteristics: excessive reliance on external indicators of mental states such as facial expressions, gestures, body posture, without reflecting on the internal beliefs, thoughts, and emotions of another person, e.g., "P. seems to have a "sixth sense" about other people's (including the therapist) mental states."

Psychometric Properties

The reliability of the MIS is satisfactory, ranging from α = .70 to .89, depending on the subscale. Validity was measured by showing specific profiles of mentalization disorders relating to a variety of personality disorders (Gagliardini et al., 2018). The inter-rater reliability was satisfactory, especially in the case of therapists and people with no clinical experience who received specialized training in the use of the measure (Gagliardini, Gatti, & Colli, 2020).

Modes of Mentalization Scale

The Modes of Mentalization Scale (MMS; Gagliardini & Colli, 2019) is also based on the theory of Fonagy and his team. In this scale, the authors focused on the specific mentalization disorders presented in the literature, which take one of these three forms: teleological stance, concrete thinking, and pseudo-mentalization (Bateman et al., 2019).

Administration and Scoring Procedure

The MMS consists of 24 items rated on a 6-point Likert scale ranging from 0 (*absolutely not descriptive)* to 5 (*absolutely descriptive*). The scale comprises five subscales relating to different ways of mentalizing:

a) Excessive certainty: an indicator of hypermentalization, wherein the patient shows overconfidence about mental states and seems to recognize the minds of other people flawlessly, e.g., "P. believes he/she often knows what someone else is thinking or feeling".
b) Concrete thinking: a tendency to understand reality based on heuristics, prejudices, rigid beliefs, or using commonsense, banal or strange explanations of emotions and behavior, e.g., "P. tends to interpret behaviors in term of physical causes (e.g., illness) and/or stable characteristics (e.g., race, cultural background, or intelligence) and/or in terms of social external factors."
c) Teleological thought: relying on physical indicators of mental states, focusing more on what people do than what they feel, think, etc.;

striving to solve problems concretely and practically, without considering the meaning of the situation, e.g., "P. seems to recognize the interest of significant others only if it is supported by concrete actions."

d) Intrusive pseudomentalization: a form of hypermentalization or pseudomentalization underlined with hostility, which uses knowledge about mental states to manipulate others and achieve goals; e.g., "P. seems to treat therapy as an intellectual game."
e) Good mentalization: recognizing, coherently describing, and curious about mental states and the awareness that people may experience different feelings and desires; e.g., "P. can describe coherently mental states."

Psychometric Properties

The reliability of this scale was found to be satisfactory, ranging from $\alpha = .67$ to $\alpha = .91$, depending on the subscale. The validity of MMS has been demonstrated by confirming the relationship between mentalization and attachment, the diagnosis of personality disorders, and various clinical indicators, such as self-destructive behavior, the experience of trauma, and the number of hospitalizations (Gagliardini & Colli, 2019). The agreement between raters was satisfactory, both for therapists and for people with no clinical experience who received specialized training in the use of the measure (Gagliardini, Gatti, & Colli, 2020).

Research Findings with Both MIS and MMS

In their study, Carrera et al. (2018) showed an improvement in mentalization as measured by MIS and MMS due to mentalization-based psychotherapy in people with borderline personality disorder, although the study group was very small (six people). Other studies using MIS and MMS have four different profiles of mentalization disorders in people with eating disorders (Gagliardini et al., 2020). Each mentalization profile demonstrated specific associations with attachment, emotional

dysregulation, empathy, interpersonal reactivity, and mentalization, as measured by the Reflective Functioning Questionnaire. This research not only reinforces the relevance of MIS and MMS as mentalization assessment tools but also indicates the great usefulness of the multifaceted assessment of mentalization in determining specific mentalization deficits among people in specific clinical groups.

12. Some Final Thoughts

In this book, I have attempted to address the most significant problems faced by researchers intending to measure mentalization, and to provide an exhaustive overview of the best measures of mentalization, based on a range of criteria. I hope that the researchers who are trying to decide how to study mentalization will find this useful. Even if they do not find their final answer here for some reason, I hope they will at least have found some guidance in arriving at that decision.

I have two concluding reflections on the current state of research into mentalization: first, mentalization is an extremely salient term in the literature, with significant developments continuing to be produced in this area. Second, this topic is complex and popular in equal measure, and we can probably expect many more years filled with dynamic developments before arriving at completely unambiguous conclusions. However, the interest the subject has elicited among researchers is quite remarkable, and I wonder whether the originators of this concept ever expected its study to go in so many different directions, and to be developed by so many independent research teams worldwide. We certainly cannot say that mentalization research is hermetic or undemocratic nowadays.

Given all this, the book inexorably is not impervious to some limitations. First, it does not include all the tools currently used to measure mentalization, for a variety of various reasons. Considering the limited size of this guide, I had to apply rather selective criteria. Some measures have not been described here, despite meeting some of the criteria—because, for example, the lone study of them available appeared while I was writing this book. In addition to leaving me a bit disappointed, this also seems to suggest that—given the extremely rapid and multitrack development of mentalization research—a review like this would

ideally need to be continuously rewritten. Second, I am not oblivious to a sense of arbitrariness in some of the statements contained in the book, especially in the first part, concerning some issues and dilemmas around the theory and operationalization of mentalization. I have made an earnest attempt to reconstruct various issues that have not always been adequately elucidated in the extant literature (e.g., properties of hypermentalization, Chapter 4). This should be understood as an attempt at synthesis and a proposal for understanding certain issues that should now be discussed and tested empirically.

To conclude, I hope that the availability of this work in open access will benefit both students and experienced researchers. I would also like to think that this review will not become obsolete too soon and will remain of service to those interested in mentalization, at least for the next few years.

Table 7
General Characteristics of Assessment Measures

Author, Year	Tool	Subscales	Duration of the Procedure	Training requirements	Group or Individual Procedure	Online Version	Where to find
SELF-REPORT QUESTIONNAIRES							
Fonagy et al. (2016)	**Reflective Functioning Questionnaire, RFQ**	1. Uncertainty about mental states 2. Certainty about mental states	Very fast (< 15 minutes)	Not required	Group and individual	Yes	Open access, retrieved from https://www.ucl.ac.uk/psychoanalysis/research/reflective-functioning-questionnaire-rfq
Beaulieu-Pelletier et al. (2013)	**Mental State Task, MST**	1. Concrete Thinking 2. Low Defensive Level 3. Intermediate Defensive Level 4. Objective–Rational 5. High Defensive Level 6. Reflective Thinking	Fast (< 30 minutes)	Not required	Group and individual	Yes	Available in the authors' original article

Author, Year	Tool	Subscales	Duration of the Procedure	Training requirements	Group or Individual Procedure	Online Version	Where to find
Hausberg et al. (2012)	**Mentalization Questionnaire, MZQ**	1. Refusing Self-Reflection 2. Emotional Awareness 3. Psychic Equivalence Mode 4. Regulation of Affect	Very fast (< 15 minutes)	Not required	Group and individual	Nd.	Available in the authors' original article
Dimitrijević et al. (2018)	**Mentalization Scale, MentS**	1. Self-Related Mentalization 2. Other-Related Mentalization 3. Motivation to Mentalize	Very fast (< 15 minutes)	Not required	Group and individual	Nd.	Available in the authors' original article
Greenberg et al. (2017)	**Mentalized Affectivity Scale, MAS**	1. Identifying Emotions 2. Processing Emotions 3. Expressing Emotions	Very fast (< 15 minutes)	Not required	Group and individual	Yes	Available in the authors' original article
Pedone et al. (2017)	**Metacognition Self-Assessment Scale, MSAS**	1. Understanding one's own mental states (Monitoring, Differentiation, Integration) 2. understanding the mental states of others (Monitoring, Decentration) 3. Regulation	Very fast (< 15 minutes)	Not required	Group and individual	Nd.	Available in the authors' original article

Author, Year	Tool	Subscales	Duration of the Procedure	Training requirements	Group or Individual Procedure	Online Version	Where to find
Gori et al. (2021)	**Multidimensional Mentalizing Questionnaire, MMQ**	1. Reflexivity 2. Ego Strength 3. Relational Attunement 4. Emotional Dyscontrol 5. Distrust 6. Relational Discomfort	Very fast (< 15 minutes)	Not required	Group and individual	Nd.	Available in the authors' original article
Performance-Based Methods							
Baron-Cohen et al. (2001)	**Reading Mind in the Eyes, RMET**	None	Very fast (< 15 minutes)	Not required	Group and individual	Yes	Necessary to contact the authors of the measure
Dziobek et al. (2006)	**Movie for the Assessment of Social Cognition, MASC**	1. No Mentalization 2. Hypermentalization 3. Hypomentalization 4. Accurate Mentalization	Medium duration < 60 minutes	Not required	Group and individual	Yes	Necessary to contact the authors of the measure

Author, Year	Tool	Subscales	Duration of the Procedure	Training requirements	Group or Individual Procedure	Online Version	Where to find
Interviews And Narrative Coding Systems							
Fonagy, Target, et al. (2002)	**Reflective Functioning Scale, RFS**	None	Long duration > 60 minutes	Required, commercially available	Individual	No	Necessary to contact the authors of the measure or training institutions
Carcione et al. (2010)	**Metacognition Assessment Scale – Revised, MAS-R**	1. Understanding one's own mental states (Monitoring, Differentiation, Integration) 2. Understanding the mental states of others (Monitoring, Decentration) 3. Mastery (1st, 2nd, 3rd Level Strategies)	Long duration > 60 minutes	Required, not commercially available	Individual	No	Necessary to contact the authors of the measure

Author, Year	Tool	Subscales	Duration of the Procedure	Training requirements	Group or Individual Procedure	Online Version	Where to find
Semerari et al. (2012)	**Metacognition Assessment Interview, MAI**	1. Understanding one's own mental states (Monitoring, Integration) 2. Understanding the mental states of other (Differentiation, Decentration)	Medium duration < 60 minutes	Required, not commercially available	Individual	No	Necessary to contact the authors of the measure

Author, Year	Tool	Subscales	Duration of the Procedure	Training requirements	Group or Individual Procedure	Online Version	Where to find
Clinician Rating Scales							
Gagliardini et al. (2018)	**Mentalization Imbalances Scale, MIS**	1. Imbalance in mentalizing about the self 2. Imbalance in mentalizing about others 3. Imbalance in mentalizing about emotions 4. Imbalance in mentalizing about cognitive operations 5. An imbalance in automatic mentalization 6. Imbalance in mentalization on the basis of physical characteristics	Very fast (< 15 minutes)	Recom-mended, not commercially available	Individual	Nd.	Available in the authors' original article

Author, Year	Tool	Subscales	Duration of the Procedure	Training requirements	Group or Individual Procedure	Online Version	Where to find
Gagliardini & Colli, 2019	**Modes of Mentalization Scale, MMS**	1. Excessive Certainty 2. Concrete Thinking 3. Teleological Thought 4. Intrusive Pseudomentalization 5. Good Mentalization	Very fast (< 15 minutes)	Recommended, not commercially available	Individual	Nd.	Available in the authors' original article

Note. Nd: No data.

Where authors do not specify the duration of the procedure, this was estimated based on the properties of the measure or author's research experience

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The theory of mentalization, put forward by P. Fonagy over twenty years ago, indubitably remains one of the most dynamic concepts to have developed in clinical psychology in recent years. In this book, I explore the theoretical and empirical aspects relevant to the assessment of mentalizing. In the first part, the issues and challenges that researchers face when planning to measure mentalization are discussed. The second part presents an overview of the most prevalent research tools, describing how they are administered, how the results are calculated and interpreted, their psychometric properties, and their research applications. It is my earnest hope that this book may serve as a practical guide for students and researchers interested in measuring mentalizing.

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