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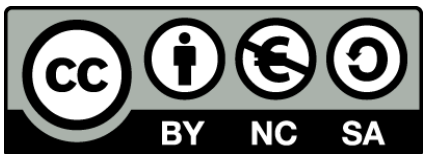
The Mutual Regulation Processes During the Psychodynamic Psychotherapy of Depression: An Observational Study of Communicative Acts in the Construction of the Early Therapeutic Alliance

Los Procesos de Regulación Mutua Durante la Psicoterapia Psicodinámica de la Depresión: Un Estudio Observacional de los Actos Comunicativos en la Construcción de la Alianza Terapéutica Temprana

Luca Del Giacco



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TESIS DOCTORAL

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Luca Del Giacco

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Tesis Doctoral

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To Lucia, Vittorio, and Luigi.

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List of Original Publications

This doctoral thesis entitled “The mutual regulation processes during the psychodynamic psychotherapy of depression: An observational study of communicative acts in the construction of the early therapeutic alliance” corresponds to a collection of previously published articles.

I, **Luca Del Giacco**, state that the articles appearing in the chapter Publications have not been part of any other thesis and have been peer-reviewed prior to publication in international academic journals. The other co-authors are aware of the inclusion of the article in the doctoral thesis. I warrant that I have obtained, where necessary, permission from the copyright owners to use any third-party copyright material reproduced in the thesis (e.g., assessment tools, graphic depictions) or to use any of my own published work (e.g., journal articles) in which the copyright is held by another party (e.g., publisher, co-author).

Article 1

Del Giacco, **L**., Salcuni, S., & Anguera, M. T. (2019). The Communicative Modes Analysis System in Psychotherapy from mixed methods framework: Introducing a new observation system for classifying verbal and non-verbal communication. *Frontiers in Psychology, 10*. https://doi.org/10.3389/fpsyg.2019.00782

Article 2

Del Giacco, **L**., Anguera, M. T., & Salcuni, S. (2020). The action of verbal and non-verbal communication in the therapeutic alliance construction: A mixed methods approach to assess the initial interactions with depressed patients. *Frontiers in Psychology, 11*. https://doi.org/10.3389/fpsyg.2020.00234

Statement of Contribution of Others

Article 1

L. Del Giacco designed the project, performed fieldwork, trained the coders, supervised the coding process, analyzed the data, and wrote the original manuscript. My co-authors supported the method and procedure sessions, the statistical analyses and revised the manuscript for theoretical and intellectual content. All authors provided final approval of the version to be published.

Article 2

L. Del Giacco designed the project, performed fieldwork, trained the coders, supervised the coding process, analyzed the data, and wrote the original manuscript. My co-authors supported the method and procedure sessions, the statistical analyses and revised the manuscript for theoretical and intellectual content. All authors provided final approval of the version to be published.

Abstract

Therapeutic conversation represents a continuous and dynamic activity of meaning construction turn by turn, based on a two-way interpretative process between therapist and patient. In particular, verbal structures and intents, vocal characteristics, and speech interruptions are indivisible and fundamental elements of therapeutic discourse; they convey psychological and emotional processes that transform the internal organization of individuals into more complex structures, fostering change. During this activity, verbal and non-verbal components interact with each other, forming a non-linear communication field that expresses the therapeutic process and the clinical function of the therapeutic relationship and fosters the development and regulation of factors such as the therapeutic alliance. This relational dimension, influenced by communicative coordination processes underlying the mutual regulation between participants, is predictive of change, especially in the early stages of psychotherapy. During the therapeutic interaction, patients experience alliance construction by manifesting different verbal and non-verbal behaviors whereby they express their psychological processes and symptoms. In particular, depressed patients present verbal, vocal, and interruption behaviors that are an expression of their symptomatology and impact on communicative exchanges with the therapist, hindering the development and maintenance of the therapeutic alliance and change. In literature, the predominance of verbal communication over the above-stated components resulted in a fragmented communicative field with distinct theories and measurement tools, which prevented the understanding of therapist-patient dynamics and their role in the construction of the early therapeutic alliance at the process level. Studies analyzing the dynamics between communication (as a single and interacting communicative field) and relational aspects in the therapist-patient interplay are absent, especially in the Italian context and in brief focal psychotherapy with depressed patients.

Therefore, this doctoral thesis as a collection of two publications aims to identify the verbal, vocal, and interruption behaviors emerging turn by turn between the therapist and depressed patient within psychodynamic psychotherapy and investigate those communicative modes of each participant that foster the alliance construction by the other during mutual regulation processes. A particular case of indirect observational methodology was implemented; as a mixed method in itself, it was able to provide a fuller picture of the therapeutic interaction by supporting it with objective measures. Thirty audio recordings and transcripts of brief focal psychotherapy sessions with ten depressed patients treated by the same therapist (8,327 speaking turns) were considered. The observational design selected to guide and organize the investigation was nomothetic/follow-up/multidimensional, given its greater wealth of information and complexity among low-intensity evaluation designs. **Study 1**, focused on identifying communicative behaviors through a theory that unify the communicative field, resulted in the construction of an ad hoc indirect observation instrument of the therapeutic conversation based on the performative function of the Speech Act Theory. This classification system showed high intra-and inter-observer reliability and made it possible to describe the participants' communicative modes trend. **Study 2** aimed to investigate the communicative modes of the therapist and depressed patients that, according to the literature, foster the mutual construction of the early therapeutic alliance: asking, exploring, elaborating, and interrupting cooperatively for the former; affirming, exploring, expressing emotions, and interrupting cooperatively for the latter. The study showed the presence of sequential patterns and significant relationships between the selected communicative behaviors and this relational dimension during the mutual regulation processes. All this allows increasing knowledge about these dynamics, providing professionals with useful information to improve the treatment effectiveness and to advance in the application of the mixed-methods approach in the field of psychotherapy research.

Keywords: verbal and non-verbal communication, therapeutic alliance construction, performative language, mutual regulation, psychotherapy process, depression, mixed-methods approach, indirect observation methodology

Resumen

La conversación terapéutica representa una actividad continua y dinámica de construcción de significados turno tras turno, basada en un proceso interpretativo bidireccional entre el terapeuta y el paciente. En particular, las estructuras e intenciones verbales, las características vocales y las interrupciones del habla son elementos indivisibles y fundamentales del discurso terapéutico; transmiten procesos psicológicos y emocionales que transforman la organización interna de los individuos en estructuras más complejas, fomentando el cambio. Durante esta actividad, los componentes verbales y no verbales interactúan entre sí, formando un campo comunicativo no lineal que expresa el proceso terapéutico y la función clínica de la relación terapéutica y que fomenta el desarrollo y la regulación de factores como la alianza terapéutica. Esta dimensión relacional, influida por los procesos de coordinación comunicativa que subyacen a la regulación mutua entre los participantes, es predictiva del cambio, especialmente en las primeras etapas de la psicoterapia. Durante la interacción terapéutica, los pacientes experimentan la construcción de la alianza manifestando diferentes conductas verbales y no verbales, mediante las cuales expresan sus procesos psicológicos y síntomas. En particular, los pacientes deprimidos presentan conductas verbales, vocales y de interrupción que son una expresión de su sintomatología e impactan en los intercambios comunicativos con el terapeuta, obstaculizando el desarrollo y mantenimiento de la alianza terapéutica y el cambio. En la literatura, el predominio de la comunicación verbal sobre los componentes antes mencionados dio lugar a un campo comunicativo fragmentado con teorías e instrumentos de medición distintos, lo que impidió la comprensión de la dinámica terapeuta-paciente y su papel en la construcción de la alianza terapéutica temprana a nivel de proceso. No existen estudios que analicen la dinámica entre la comunicación (como campo comunicativo único e interactivo) y los aspectos relacionales en la interacción terapeuta-paciente, especialmente en el contexto

italiano y en la psicoterapia focal breve con pacientes deprimidos. Por lo tanto, esta tesis doctoral como una colección de dos publicaciones tiene como objetivo identificar las conductas verbales, vocales y de interrupción que emergen turno tras turno entre el terapeuta y el paciente deprimido dentro de la psicoterapia psicodinámica e investigar aquellos modos comunicativos de cada participante que fomentan la construcción de alianzas por parte del otro durante los procesos de regulación mutua. Se aplicó un caso particular de metodología observacional indirecta; al ser un método mixto en sí mismo, pudo proporcionar un cuadro más completo de la interacción terapéutica apoyándola con medidas objetivas. Se consideraron 30 grabaciones de audio y transcripciones de sesiones de psicoterapia breve focal con diez pacientes deprimidos tratados por la misma terapeuta (8,327 turnos de habla). El diseño de observación seleccionado para guiar y organizar la investigación fue nomotético/de seguimiento/multidimensional, dada su mayor riqueza de información y complejidad entre los diseños de evaluación de baja intensidad. El **estudio 1**, centrado en la identificación de las conductas comunicativas a través de una teoría que unifica el campo comunicativo, dio lugar a la construcción de un instrumento de observación indirecta ad hoc de la conversación terapéutica basada en la función performativa de la Teoría de los Actos del Habla. Este sistema de clasificación mostró una alta fiabilidad intra e inter-observador y permitió describir la tendencia de los modos comunicativos de los participantes. El **estudio 2** tuvo por objeto investigar los modos comunicativos del terapeuta y de los pacientes deprimidos que, según la literatura, fomentan la construcción mutua de la alianza terapéutica temprana: preguntar, explorar, elaborar e interrumpir cooperativamente para el primero; afirmar, explorar, expresar emociones e interrumpir cooperativamente para el segundo. El estudio demostró la presencia de patrones secuenciales y relaciones significativas entre las conductas comunicativas seleccionadas y esta dimensión relacional durante los procesos de regulación mutua. Todo ello permite aumentar el conocimiento de estas dinámicas, proporcionando a los profesionales

información útil para mejorar la eficacia del tratamiento y avanzar en la aplicación del enfoque de *mixed methods* en el campo de la investigación en psicoterapia.

Palabras clave: comunicación verbal y no verbal, construcción de la alianza terapéutica, lenguaje performativo, regulación mutua, proceso terapéutico, depresión, enfoque de *mixed methods*, metodología de observación indirecta

Introduction

Justification and Focus of the Topic

The need to understand the dynamics that foster the effectiveness of treatment led psychotherapy research to investigate what changes and how this change occurs within therapist-patient interaction (McAleavey & Castonguay, 2015). A possible explanation given by researchers is that change takes place in the form of a progressive construction of internalized meanings during psychotherapy, where factors of the therapist, patient, and interaction come into play (Krause, 2011; Rieken, 2015). In this context, communication, being the core of psychotherapy, has been recognized as the primary means to achieve this change (Bavelas et al., 2014). All this leads to a recent reformulation of the psychotherapy process as a *non-linear and dynamic field of communication* that stimulates and regulates the above-stated factors emerging within the latter (Salvatore & Gennaro, 2015). However, the conceptualization of communication as verbal and non-verbal dimensions in polar opposition guided the choice of scholars to take a clear stand, focusing their studies on one aspect or the other (Westland, 2015). The predominance that verbal dimension actually assumed over the other components put in the shade the importance of non-verbal dimensions, such as vocal and interruption behaviors; the latter convey psychological and emotional processes underlying the content, enriching the meaning of therapeutic discourse (Andersen, 2008; Elvevåg et al., 2016). Verbal structures and contents, voice characteristics, and speech interruptions are indivisible and founding elements of therapeutic discourse (Jones & LeBaron, 2002); they transform the internal organizations of individuals into more complex structures, fostering therapeutic change (Cavelzani & Tronick, 2016). Consequently, this split emphasized the underlying weakness of psychotherapy as a communicative field, entailing distinct theories and as many measurement instruments that are incommunicable to each other due to their structure, analysis

level, or the participant involved, without considering the absence of measures for some non-verbal dimensions, such as interruptions. All this affects the understanding of the therapist-patient relationship, considering that the interaction of communicative field elements is the foundation of the therapeutic alliance development and regulation, one of the most predictive *common factors* of treatment effectiveness and change from the early stages of psychotherapy (Locati et al., 2019; Salvatore & Gennaro, 2015).

This relational dimension is affected by the therapist's and the patient's contributions and, in particular, by the communicative coordination processes at the basis of the mutual regulation between participants, occurring turn by turn through conversational sequences (Colli et al., 2017; Morán et al., 2016). Therefore, the presence of a fragmented communicative substratum entails a difficulty in understanding the dynamics that emerge in therapist-patient discourse underlying the construction of the early therapeutic alliance. Moreover, if one considers that communication represents the primary means of patients' psychological discomforts expression, then verbal, vocal, and interruption behaviors become complementary indicators of the dysfunctional dynamics emerging in the therapeutic relationship (Elvevåg et al., 2016). Specifically, depressed patients show a verbal and non-verbal communication that expresses their symptomatology and impacts on the interaction with the therapist, hindering the development and maintenance of the therapeutic relationship (Smirnova et al., 2018). Studies in this field are absent, especially within the Italian context and the early stages of brief focal psychotherapy, a dynamically oriented *talking cure* (Breuer & Freud, 1895/1955) that is focused on the relationship. All this could also be due to the problem of investigating the constructs together. Indeed, in addition to the lack in the literature of a single and interacting system that classifies verbal, vocal, and interruption behaviors of the therapist and patient, the instruments analyzing communication components in psychotherapy are mainly based on a bottom-up approach while those for the evaluation of therapeutic alliance on a top-down

approach (Mörtl & Gelo, 2015). Therefore, all this entails methodological difficulties in deepening the dynamics of these constructs at the therapeutic process level. The use of the indirect observational methodology, as a mixed method in itself (Anguera, 2020), represents the most appropriate research approach to catch the complexity of the communicative dynamics between the therapist and depressed patient and their influence in the relational interactions at the process level. Investigating the verbal, vocal, and interruption behaviors implemented by the therapist and depressed patient within the communicative field and understanding how these elements affect the therapeutic alliance construction is useful to overcome the limitations of previous research and acquire additional knowledge about such interactions, providing professionals with information that may improve the treatment effectiveness.

Research Objectives and Studies Presentation

In light of these premises, the general purpose of this doctoral thesis is to investigate the communicative and relational dynamics emerging turn by turn in the therapist-depressed patient interaction; all this to catch the micro-processes that develop between communication and therapeutic alliance as precursors of success and change in brief focal psychodynamic psychotherapy. To achieve this, the indirect observational methodology (Anguera, 2020), as a mixed method with high rigor and flexibility, has been applied to a group of depressed patients treated by the same therapist with experience in the psychodynamic approach. The choice of this symptomatology and a single therapist was guided by several clinical and methodological aspects, such as: 1) the worldwide spread of depression by 2030 (World Health Organization, 2008, 2012); 2) the proven role of verbal and non-verbal behaviors in the expression of the personality profile (Elvevåg et al., 2016); 3) the difficulty of depressed patients in building and maintaining the therapeutic alliance (Smirnova et al., 2018); 4) the higher attendance at the

clinical service of patients with depressive symptoms compared to others; 5) the objective of obtaining a homogeneous group; 6) the control of the therapist variable. As the mixed method is intensive, it was possible to work on a small number of participants who, however, provided a large number of records with high rigor by *connecting* qualitative and quantitative data (Creswell & Plano Clark, 2018). All this allowed the study of the therapeutic process complexity with depressed patients. In both studies, this thesis work followed a Nomothetic/Follow-up/Multidimensional design (N/F/M; Blanco-Villaseñor et al., 2003), for its greater complexity and wealth of information in line with the studies carried out, and the three phases of the observational process (qualitative [QUAL]-quantitative [QUAN]-qualitative [QUAL]; Anguera, 2020). An integrative procedure was structured as a peculiar and unconventional case of the observational methodology to guide the two studies of this thesis and achieve specific objectives.

Study 1 was conducted to identify the therapist's and depressed patient's communicative behaviors reformulated through a single unifying theory. Precisely, this study aims to achieve the following specific objectives:

a) Building an ad hoc indirect observation tool, as a single and interacting system able to classify the verbal, vocal, and interruption behaviors implemented turn by turn by therapist and depressed patient in the Italian context.
b) Checking the psychometric reliability of the instrument.
c) Describing the sub-scales trend.

Study 2 was performed to investigate the action of specific verbal, vocal, and interruption behaviors of the therapist and depressed patients that the literature identifies as essential elements in the mutual regulation processes and the construction of a good therapeutic alliance during the early stages of the therapy. Precisely, the study aims to achieve the following specific objective:

d) Detecting the presence of sequential patterns and significant relationships between the specific communication modes of one participant and the construction of the early therapeutic alliance by the other during the mutual regulation processes. Based on previous studies (Cafaro et al., 2016; Dagnino et al., 2012; Krause et al., 2016; Li et al., 2005; Tomicic, Martínez, & Krause, 2015), it is expected that the therapist's verbal (asking and exploring) and non-verbal (elaborating and cooperatively interrupting) modes and the depressed patients' verbal (asserting and exploring) and non-verbal (expressing emotions and cooperatively interrupting) modes positively affect the reciprocal construction of the early therapeutic alliance, determining stable patterns and significant associations with collaborative behaviors by each participant.

Thesis Structure

The thesis as a collection of publications is structured as follows, according to the American Psychological Association (2020) guidelines.

The "Introduction" provides a brief description of the research background emphasizing the limitations of the literature and the importance of the topic. Moreover, it defines the objectives, presents the studies, and describes the structure of the thesis.

The chapter "Theoretical and Empirical Background" opens with a historical excursus of psychotherapy as a phenomenon between clinical practice and research, emphasizing the importance of process research and its recent reformulation as a communicative field. The chapter develops this reformulation by deepening, from a theoretical and empirical viewpoint, the therapeutic discourse elements as a communicative field and the therapeutic alliance as the most predictive factor of change emerging within the latter. Next, it examines the interaction between therapeutic discourse and therapeutic alliance, focusing on depressed patients. Finally,

the chapter presents a conceptual analysis of the mixed-methods approach, with particular attention to indirect observation as an elective methodology to study the interactive processes of the constructs involved.

The chapter “Publications” includes the articles related to the two studies carried out, which structure this thesis as a collection of publications.

The chapter “Main Results” describes the main findings derived from the two studies in line with the objectives of this thesis.

The chapter “G**e**neral Discussion” deals with the results based on the existing literature and their implications from the perspective of the research and clinical practice.

The chapter “Final Conclusions” sums up what emerged from the questions posed in this doctoral thesis and highlights the contribution of the study to the psychotherapy research field. Moreover, it also shows the limitations and recommendations for future research.

Theoretical and Empirical Background

Psychotherapy: An Evolving Phenomenon Between Clinical Practice and Research

Psychotherapy, as a treatment method and a defined research object, is a modern phenomenon born at the end of the 19th century, as a consequence of the lifestyle individualization that involved greater mental complexity of individuals but also their greater psychic vulnerability (Rieken, 2015). Therefore, this phenomenon is relatively young, preceded in archaic and premodern times by approaches with similar structures regarding the knowledge and treatment of mental illness.

The origins of the research in this field can be traced back to the case studies on hysteria by Breuer and Freud (1895/1955), which provided the first evidence for the theory and practice of psychotherapy. Following Orlinsky and Russell (1994), the history of psychotherapy research can be divided into four ideal periods up to how it is known today. The first phase (from 1920 to 1954) involved the rise of psychotherapy research with the aim "to demonstrate the feasibility and necessity of applying scientific methods [in this field]" (Orlinsky & Russell, 1994, p. 191). Moreover, it was during this period that Carl Rogers's (1942) first systematic sound recordings marked the birth of process and process-outcome research. However, it was Eysenck's (1952) first attack on the exponential growth of clinical cases and the effects of psychotherapy that gave the impetus to more systematic and experimental clinical investigations, acting as a catalyst for the development of psychotherapy research in general. In the second phase (1955-1969), a second attack by Eysenck (1965) led scholars to focus the research on psychotherapy effectiveness by intensifying studies of the process to define the factors necessary for therapeutic change (Elliott & Farber, 2010; Hersen et al., 1984). It was in this period, indeed, that the so-called objective measures for the analysis of audio recordings were developed, and it was Rogers (1957) who started that research line aimed at non-

participant observation of large quantities of recorded sessions, which involved the necessary structuring of sampling approaches. At the same time, the development of pre-post-follow-up designs through elaborate measures showed a complex relationship between process and outcome. The third phase (1970-1983) was characterized by further methodological development and refinement. The rise of meta-analytical techniques allowed summarizing the results of a large number of studies within specific research areas, confirming the usefulness and effects of psychotherapy (M. L. Smith et al., 1980). Finally, the fourth phase (1984-today) is characterized by the deepening of process and process-outcome research. Qualitative and mixed-methods approaches develop with the aim not only to justify the effectiveness of psychotherapy but also to find out how this occurs (Greenberg & Pinsof, 1986). At this phase, the question that becomes central is: How are the significant positive effects of psychotherapy achieved? Researchers increasingly focus on micro-level dynamics, and context variables assume an essential role in explaining the relationship between process and outcome of psychotherapy (Rieken, 2015). The study of therapist, client, and interaction factors (e.g., Wiseman & Rice, 1989) in successful or unsuccessful clinical cases (e.g., Hersoug, 2010) characterizes the therapeutic process analysis, showing the strong association of the latter with the outcome variables (Rieken, 2015).

Psychotherapy Process to Bridge the gap

Taking a closer look at the process research, it emerges that several definitions characterize this field. In general, it represents the study of what happens in psychotherapy, considering the behavioral variables of the therapist, patient, and their interaction that determine the change of the patient him/herself (Lambert & Hill, 1994). As in any other research field, scholars attempted to provide theoretical and empirical support about the relationship between therapeutic processes and patient change to give evidence-based

explanations of treatment effectiveness (Kazdin, 2009). In recent years, different methodologies (e.g., single case studies, qualitative and/or quantitative intensive analysis, naturalistic studies) and analysis techniques (e.g., standardized methods, hermeneutical approaches, discourse analysis) have been used to provide empirical evidence in an attempt to explain the role of factors (e.g., therapeutic alliance, therapeutic interventions, defense mechanisms) that stimulate clinical change (e.g., Elliott et al., 2009; Eubanks et al., 2018; Smink et al., 2019; Voutilainen et al., 2011). However, this progress, although satisfactory, needs further development.

In general, in agreement with Hardy and Llewelyn (2015), it is possible to state that process research tries to bridge the gap between research and clinical practice, providing useful answers to improve the psychotherapeutic activity of professionals. For this purpose, according to the authors, it is possible to summarize its operational structure in four fundamental objectives that characterize and guide its activity. The first one, already mentioned above, is to understand the mechanisms underlying the treatment and change processes of the client in psychotherapy. In this regard, it must be said that research on the process is not as extensive as that on psychotherapy outcome, and the number of studies with substantial results is quite exiguous (Orlinsky et al., 2004). Moreover, process research primarily concerned with some specific therapeutic approaches (e.g., psychodynamic, Gestalt, person-centered, and interpersonal psychotherapy) compared to others (e.g., cognitive-behavioral psychotherapy). The second objective is to understand which treatment facets make changes to improve therapy quality. For example, Hill and Knox (2002) stressed the role of therapist self-disclosure in the therapeutic alliance construction. Beutler et al. (2006), on the other hand, showed that the gender of the therapist has little effect on the patient's perception of therapy quality. The third one is to contribute to the construction of theories that consolidate and improve therapeutic work. Process analysis, indeed, can determine the characteristics of therapist-patient exchanges

that confirm or not the effectiveness of a theory, strengthening or modifying it. Consider, for example, the studies realized on the connection between interpretations and therapy outcome: the results of Orlinsky et al. (2004) did not support transference interpretations in brief therapies, questioning some facets of the underlying theory. Finally, the last objective is to help the therapist to acquire new intervention forms to increase treatment effectiveness and encourage change: determining what influences therapy is useful for the therapists training (Hardy & Llewelyn, 2015).

Psychotherapeutic Change Process

When one talks about change, we enter a field of psychotherapy research still in turmoil and fundamentally focused on two key questions (Collerton, 2013; Krause & Altimir, 2016; McAleavey & Castonguay, 2015; Murphy et al., 2009): What is it that changes? How does change occur? These questions led scholars to perform several studies in an attempt to provide an answer by deepening the perspective of the therapist (e.g., Schröder et al., 2015), that of the patient (e.g., Mander et al., 2014), or moving toward external observation of the therapeutic process (e.g., Oasis, 2015). The scientific production, therefore, has made available a variety of tools and application methods that show little agreement among scholars, leaving these questions still open (Lambert & Bergin, 1994).

Obviously, from all this derives the importance of considering the theoretical framework whereby each clinician structures his/her interventions to define the notion of change. In particular, in the psychoanalytic field, change is generally associated with the acquisition of insight through the transference interpretation, although research has shown that intervention techniques generally have different and immediate effects on the psychotherapeutic process (Messer, 2013). Hence, therapeutic activity plays an essential role, as these interventions show some impact on patients. Indeed, during psychotherapy, they

stimulate the progressive construction of associations that the patient internalizes on a subjective level through a new perception and interpretation of his/her reality, with potential behavioral changes (Blanchet et al., 2005; Krause & Dagnino, 2011).

According to this perspective, therefore, therapeutic change can be meant as the modification of the patient's internalized meanings related to the outlook on him/herself and the problems experienced, as well as the link between these facets and the relational environment where the psychic discomfort manifests itself (Krause et al., 2007; I. P. Strauss, 2016). In other words, the change is structured in the form of a representational process where the patient co-constructs with the therapist new subjective theories about him/herself and the relationship with the surrounding world that, through resignifications, determine new inner connections (Krause et al., 2007; Valdés & Krause, 2015). In this sense, change becomes a subjective phenomenon that acts at the level of shared meanings between therapist and patient about problems and symptoms, producing new subjective theories in the form of interconnected elements related to oneself (Krause, 2011). The patient, therefore, changes by acquiring new ways of interpreting and representing reality, through an evolutionary process that leads to greater autonomy and internalization of the therapist's representation as a secure basis to draw on in problematic situations (Krause et al., 2014; C. Martínez et al., 2015). Hence, the change assumes the connotations of a real process that is established during therapy by the effect of therapeutic interactions and interventions, becoming the subject of therapeutic process research (Hardy & Llewelyn, 2015).

Psychotherapy Process as a Communicative Field

If the change is established in the form of co-construction of new meanings and inner connections during the interaction between therapist and patient, language represents the core of psychotherapy and the means whereby this change can be achieved (Bavelas et al., 2014;

Kiesler, 1973). According to Salvatore and Gennaro (2015), the psychotherapeutic process constitutes a communicative exchange underlying the clinical function of the therapeutic relationship: it acts as a regulator of mental processes between therapist and patient (Salvatore & Tschacher, 2012). Communication is meant as a dynamic and continuous activity of meaning construction based on a two-way interpretative process between participants (Salvatore, 2011): "The way the experience is shaped and interpreted –namely, what people think, feel and enact– reflects this structural and dynamic relationship among [meanings]" (Salvatore & Gennaro, 2015, p. 197). As several scholars claim (e.g., Arístegui et al., 2004; Reyes et al., 2008; I. P. Strauss, 2016), this co-construction of meanings coincides with that of a new reality at the representational level, which is the basis of psychological change. According to this concept, both therapist and patient are protagonists in the meaning construction, underlining the importance of distinguishing between the role and contribution of each speaker when studying therapeutic communication (Dagnino et al., 2012).

The psychotherapeutic process, therefore, consists of a clinical exchange as a *non-linear and dynamic field of communication* (Greenberg, 1991; Hayes et al., 2007; Salvatore & Gennaro, 2015). According to Ogden (2004), it is similar to the therapeutic field of the psychoanalytic approach, where the clinical relationship is experienced as a psychological object able to influence the mental processes of participants within the exchange. On the one hand, the communicative field represents the place where the meaning emerges due to the interaction between structural (e.g., characteristics of participants or treatment) and dynamic (e.g., therapist interventions, defense mechanisms, discourse styles, adopted narratives) elements that characterize the *hic et nunc* of psychotherapeutic exchange (Salvatore & Gennaro, 2015). On the other hand, it represents a higher-order framework that regulates the functioning and interaction of psychotherapeutic process factors, producing change.

Hence, this approach to process research will serve as a guide for this doctoral thesis. Firstly, it will permit identifying those elements of the therapeutic discourse that constitute the communicative field and influence the clinical interaction, making it specific compared to other communication modes. Later, it will allow deepening the factors emerging within this communicative field (e.g., theoretical approach, therapist's and the patient's characteristics, therapeutic alliance) and how the latter influences the former (Salvatore, 2015).

Elements of Therapeutic Conversation as a Communicative Field

During psychotherapy, participants establish a dyadic and asymmetric relationship in the form of therapeutic conversation, a specific communicative exchange aimed at searching and exploring the patient's problems as well as co-constructing new meanings and change (Blanchet et al., 2005; Dagnino et al., 2012; Leahy, 2004; Molina et al., 2013; Soares et al., 2010). An explanation for this type of relationship can be traced back to studies within the Infant Research field, justifying the importance of investigating communication exchanges between therapist and patient. Indeed, since the first interactions with the caregiver, the child acquires the basic rules of communicative exchange (i.e., the alternation of speaking turns) (Tronick, 2007) as well as the skills of self-regulation (i.e., to regulate one's inner states) and mutual-regulation (i.e., to influence and be influenced by the other) that allow him/her to develop an evolving sense of self. The latter, in turn, will be influenced in adulthood by future exchanges with significant others through the construction of meanings (Beebe & Lachmann, 2002; Knox, 2011; Morán et al., 2016): the interaction between therapist and patient is precisely the typical context where such changes may occur.

Within the therapeutic process, therefore, the communicative exchange plays an essential role in therapist-patient interaction, as a complex activity consisting of two primary signification systems: verbal and non-verbal communication (Anolli, 2002; Ephratt, 2011;

Westland, 2015). The natural language between therapist and patient, indeed, is not only conveyed by the verbal content but, as Weick (1968) points out, especially by the intervention of other channels that constitute the non-verbal component (e.g., voice tone, facial mimicry, body movements, speech interruptions). The latter, in interaction with the former, transmits the psychological and emotional processes characterizing the personality profiles of participants during each session (Elvevåg et al., 2016; Jones & LeBaron, 2002; Valdés & Krause, 2015). In other words, within psychotherapy as *talking cure* (Breuer & Freud, 1895/1955; Marx et al., 2017), the communicative exchange emerges from the interweaving of *what* is said and *how* it is said, within a two-way process that both participants establish (Tonti & Gelo, 2016; Westland, 2015). Therefore, deepening communicative behaviors, as verbal and non-verbal micro-events observable in the hic et nunc of participants' interchange, fosters the acquisition of knowledge on the processes connected to the construction of meanings and the therapeutic relationship (Stiles et al., 1998) and, consequently, on the therapeutic process underlying change (Ephratt, 2011).

Therapeutic Conversation Research: Toward an Integrated Approach

It must be said that, historically, the verbal and non-verbal dimensions have always been conceived separately as opposite phenomena (Jones & LeBaron, 2002), where the former received more attention than the latter (Westland, 2015). This difference can be seen in the high number of studies on the verbal component (e.g., Buchheim & Mergenthaler, 2000; Krause et al., 2016; McCarthy et al., 2011; Valdés & Krause, 2015) compared to those on non-verbal components (e.g., body movement, Ramseyer & Tschacher, 2014; vocal quality, Tomicic et al., 2011; speech interruptions, Matarazzo & Wiens, 1972; speech rate, Rocco et al., 2018). However, the latter underlines that non-verbal communication, like verbal communication, plays a significant role in the therapeutic process. Moreover, similarly to this

split, most scholars focused on the communicative aspects of the therapist (e.g., Goates-Jones et al., 2009; Weiste & Peräkilä, 2014) or the patient (e.g., Levitt, 2001; Ruiz-Sancho et al., 2013), while only recently research has considered the communicative interactions in the therapist-patient dyad (e.g., Krause et al., 2016; Mellado et al., 2017).

A possible explanation for this attitude toward the study of communication can be found in the theoretical models developed in the field of communication psychology that oriented and influenced the different research areas (including psychotherapy research) over the decades. Since the first studies on communication in the 1960s, especially in the field of quantitative research (e.g., Bugental et al., 1970), scholars supported the theory of a *channel summation model* (Marks, 1979) according to which (a) verbal and non-verbal messages were considered different types with different meanings and effects; (b) the total impact of messages conveyed in different channels derived from the frequency, intensity, or weighting of the individual channels summated together (Jones & LeBaron, 2002). For example, Knapp et al. (1973) studied the frequency of verbal and non-verbal behaviors during the leave-taking act in face-to-face interaction. Over the years and with the increasing criticism of quantitative studies, more and more naturalistic research –where variables were not manipulated (e.g., Cegala et al., 1979)– was performed. At the same time, several models were developed, the most widespread of which was the *structural model of communication* (Kendon, 1990) aimed at discovering the cultural determinants of communication behaviors. According to this model, context observation allowed detecting the meanings of communicative acts that people expressed through cultural rituals (Jones & LeBaron, 2002).

In recent years, the perspective that is spreading –also in the field of psychotherapy research– supports the idea of more elaborate approaches where the verbal and non-verbal dimensions influence each other as interrelated and co-occurring phenomena within the interaction between interlocutors, despite these elements being coded as separate messages

(Bucci, 2007). Therefore, we are witnessing the recognition of a complex phenomenon in face-to-face situations, the mutual influence, where the different verbal and non-verbal communication channels are activated simultaneously in conveying messages, and communicative exchanges between people may occur both sequentially and instantaneously (Jones & LeBaron, 2002). Thanks to the advent of micro-analytical methods (e.g., conversation analysis or systematic observation), studies on the interaction of communication dimensions are increasing, leading to the structuring of an *emerging model* of communication (Leeds-Hurwitz et al., 1995) based on the assumption that "people not only utilize structural forms, but they also co-construct and negotiate meanings and rules in their ongoing interactions" (Jones & LeBaron, 2002, p. 504). There is a shift of attention to the mutual influence that becomes a pivotal element also in understanding the therapeutic conversation where the therapist and patient are both protagonists in the construction of meanings and change.

For this reason, distinguishing the role and contribution of each speaker becomes particularly important when studying communicative interaction in psychotherapy (Dagnino et al., 2012), as confirmed by recent studies enhancing its interactive aspects (Altimir et al., 2010). Hence, the need for an integrative approach of verbal and non-verbal dimensions, still absent in the psychotherapy research field, which reflects the therapeutic relationship complexity.

The Performative Function of Language as a Unifying Theory

The emerging model development and the attention to the mutual influence of the communicative components emphasize the actual absence of a "bridge" connecting the verbal and non-verbal dimension into a single homogeneous substratum, which is able, on the one hand, to adequately catch the therapeutic exchange complexity where the co-construction of meanings occurs and, on the other hand, to regulate the functioning of the factors that determine the change. Such a problem, therefore, generated the following research question of this

doctoral thesis: Is it possible to trace a unifying theory that can overcome this limit and read verbal and non-verbal communication through a single "magnifying glass"?

A possible answer derives from the Speech Act Theory, more precisely from the performative function of language (Searle, 1969/2017), which has been assumed as a global theory to explain the mutual influence of the communicative dimensions within a single interacting system. The theoretical perspective of linguistic acts, developed by Searle drawing on Austin's (1962) theory, can be summarized in the assumption that *to say something is to do something*: who speaks is realizing an action, the action of speaking, which is a linguistic act in itself and represents the minimum unity of linguistic communication (Searle, 1969/2017). The speech emitted conveys the communicative intention of the speaker, constituting a linguistic communication (R. L. Russell, 2013).

It was Austin (1962) who first outlined a systematization of research in this field by integrating the mere constative language (i.e., descriptive or enunciative of reality as such) with the performative function, comparable to those communicative emissions that realize an action when they are expressed. From this assumption, the author outlined an early distinction of linguistic acts in *locutionary* (i.e., what is said in the form of a grammatical structure), *illocutionary* (i.e., the actions realized in saying something), and *perlocutionary* (i.e., the effects intentionally produced by the illocutionary act on the listener). Later, Searle (1969/2017) stated that the illocutionary acts are those that enclose the intentionality of speakers and can be considered at the basis of the co-construction of meanings and change (Reyes et al., 2008). Precisely, the author built the Speech Act Theory through the illocutionary acts, defining a double structure that characterizes their nature and that can be summarized in the formula F(p), where *F* is the illocutionary or performative force of the linguistic act, and *p* is the constative component or the content expressed by referring and predicating (Drid, 2018; Searle, 1969/2017). Therefore, every linguistic act consists of what is said and how it is

said, based on the speaker's intentionality (Chaika, 2008; R. L. Russell, 2013). When an illocutionary act is performed, the propositional component and the illocutionary force (or performative element) become involved in defining how each locution can be used. Hence, the illocutionary act determines the meaning of the linguistic act: it implies the intention to act, which in turn is guided by the intentionality of meaning (Arístegui et al., 2004). Understanding the meaning allows identifying the performative component of the speech act.

In the psychotherapy context, the therapeutic conversation –unlike the communicative exchanges occurring in everyday life– aims to realize the psychological change in the form of new representational reality in the patient, where the therapeutic action consists of linguistic acts expressed through speech as communicative skills in action (Arístegui et al., 2004; Chaika, 2008; Freshwater & Lees, 2018; Reyes et al., 2008; I. P. Strauss, 2016). In other words, therapist-patient communicative exchanges occur in the form of turn-by-turn conversational sequences of different linguistic acts, which satisfy the condition of performativity and co-construct meanings and change (Arístegui et al., 2004; Reyes et al., 2008; R. L. Russell, 2013).

Within an emerging model of communication, therefore, it is possible to define the different types of linguistic acts based on the illocutionary force, or performative component, that guides them. The communicative substratum at the basis of the therapist-patient exchanges is structured in the form of an interacting system of verbal and non-verbal communicative acts –provided with conscious or unconscious intentionality (Freud, 1901/1914)– that influence each other within a mutual-regulation process between participants. This phenomenon manifests itself through a conscious and unconscious coding-decoding activity that the therapist and patient reciprocally implement during communicative exchanges (Charman, 2004). Indeed, the communication produced (or codified) by one participant conveys meanings that derive, on the one hand, from his/her conscious elaborations and, on the other hand, from the effects –mostly unaware– of the message received resonating with his/her experiences (for

the patient) or knowledge (for the therapist) (Jones & LeBaron, 2002; Sbisà, 2009). Hence, the communicative acts of both participants, as interrelated phenomena of verbal and non-verbal behaviors derived from conscious and unconscious processes, generate conversational sequences that orient the turn-by-turn therapeutic conversation. The latter becomes the space where each participant assumes a different subjective position that reveals the *dialogical nature of the self* (Raggatt, 2007). As Morán et al. (2016) emphasize, these positions manifest themselves in the form of discursive voices that communicate with each other both through an inner dialogue occurring in the intra-mental space of each participant and through the real dialogue emerging in the inter-mental space between participants. "The way in which the participants' voices interact and regulate each other continuously shapes the meanings produced in the therapeutic process and regulates, in turn, the multiple interactions" (p. 550).

The performative component of language assumes, therefore, a general function that allows considering the various types of verbal and non-verbal linguistic acts as different modes that interact with each other to achieve the propositional component (Reyes et al., 2008). In this way, the structuring of such a global approach allows deepening the different verbal and non-verbal modes emerging during the therapeutic conversation: their definition, in line with the Speech Act Theory, fosters the knowledge of the interactive dynamics between therapist and patient within the therapeutic process.

Verbal Communication. The verbal dimension of communication is at the basis of the psychotherapy process (Westland, 2015), as confirmed by decades of evidence underlining the correlation between mental health and the words used during the therapeutic conversation (Valdés, 2014). Indeed, this dimension has received more and more attention in the study of the therapeutic process (Rocco et al., 2018), primarily because the use of words as a healing tool distinguished psychotherapy from other forms of treatment (Fernández et al., 2012). It

represents a characterizing element in the therapist-patient relationship, as it conveys the inner contents of participants (Valdés et al., 2011) and allows identifying those indicators explaining some characteristics of their personalities (Pennebaker et al., 2003). Therefore, starting from the assumption that human beings act based on the representations they make of themselves and the world, the verbal communication study can foster a better understanding of intra-and interpersonal subjective meanings (Valdés & Krause, 2015).

According to the principle that saying something is doing something (Searle, 1969/2017), the verbal utterances –expressed in the therapeutic conversation as propositional acts with the structure of referring and predicating– encompass the intentionality of each speaker. Therefore, they constitute communicative acts, connected to the object of the therapeutic work, that have a profound impact on the listener: they generate a two-way coding-decoding process that oscillates between the self-and mutual-regulation of patient and therapist, influencing their internal representations (Arístegui et al., 2009; C. Martínez et al., 2015; Valdés et al., 2010). In other words, change in psychotherapy requires the coordination of linguistic actions (Reyes et al., 2008; Valdés et al., 2012) through the construction of new inner reality; the latter constitutes itself a psychological change for the patient, which expresses itself in the form of connections of emerging meanings in the verbal interaction between participants (Arístegui et al., 2004; I. P. Strauss, 2016). This construction, however, does not occur homogeneously but through modifications of verbal emissions during therapy, which coherently follows the structuring of change (Dagnino et al., 2012).

Thanks to the micro-analytical observation of the turn-by-turn interactive sequences, it is possible to obtain knowledge on the construction of change: the analysis of the communicative actions implemented during the sessions of the therapeutic work provides contributions to clinical practice, fostering the expert management by professionals (Elliott, 2010). In support of this and as an example, Stiles and Shapiro (1995) examined the verbal

structures of therapist-patients exchanges from the perspective of linguistic acts by considering 1,630 session segments of 39 brief psychodynamic-interpersonal and cognitive-behavioral treatments. The authors found intra-and inter-session temporal patterns of verbal utterances, characterized by specific literal (propositional component) and pragmatic (performative component) meanings that showed the complementarity of participants during the interaction. Valdés et al. (2010), instead, examined the verbalizations of emotions in psychoanalytic and individual treatments by analyzing 433 speaking turns in specific change episodes. The authors identified distinct emotions for the therapist and patient that activate and regulate the personal emotional experiences of each participant. Krause et al. (2016) examined the patients' and therapists' verbal actions in 7,009 speaking turns of 24 treatments, determining basic linguistic forms (the propositional component) associated with the change process and therapy outcome. Finally, Dagnino et al. (2012) studied the evolution of communicative intentions during the therapeutic conversation by analyzing 2,833 speaking turns in ten brief treatments (psychodynamic, socio-constructionist, cognitive-behavioral). The authors underlined a heterogeneous use of communicative intentions by the therapist and patient during each therapeutic process.

Hence, verbal communication represents a primary tool for clinicians, whereby guiding and modifying the quality of interventions (Rimondini, 2011). From this perspective, the present thesis work assumes these communicative behaviors as *verbal modes* able to perform actions and transmit content, two inextricable functions whereby the therapist and patient influence each other in the reality co-construction and the psychological change (Valdés & Krause, 2015).

Non-Verbal Communication. As previously mentioned, the construction of meanings, as well as the communicative exchange, does not only occur through the verbal component but

also, and above all, through non-verbal communication (Pawelczyk, 2011; Schore & Schore, 2008). This dimension includes all the aspects of messages different from words, which are distinguishable into the extra-linguistic system (e.g., voice quality, intensity, timbre, duration, silence, and interruptions) and the paralinguistic system (body movement, facial expressions, and gaze) (Foley & Gentile, 2010; Rocco et al., 2018). As McGilchrist (2009) points out, indeed, only 10% of the message is transmitted through the verbal channel, while the remaining 90% is conveyed by non-verbal systems. Despite the vast amount of studies on verbal aspects (e.g., Buchholz & Kächele, 2017; Froján et al., 2010; Krause et al., 2016), scholars recognize the essential role of non-verbal communication, as it provides additional information and enriches the meaning of the expressed content (Foley & Gentile, 2010; Rocco et al., 2018; Sikorski, 2012; G. Smith, 2016). All this makes each communicative exchange unique and specific within the clinical setting.

Notwithstanding this, most of the scientific production on non-verbal communication focused mainly on the study of body movements (e.g., Ramseyer & Tschacher, 2014; Schoenherr et al., 2019; Shuper-Engelhard, 2018; Shuper-Engelhard & Vulcan, 2019), facial expressions (e.g., Arango et al., 2019; Benecke et al., 2005; Datz et al., 2019), or gaze (e.g., Moukheiber et al., 2010; Weeks et al., 2013), while few studies deepened vocal behaviors (e.g., Buchholz & Reich, 2015; Moneta et al., 2008; Rice & Kerr, 1986; Tomicic, Martínez, & Krause, 2015; Wiseman & Rice, 1989) and interruption behaviors (e.g., Stratford, 1998; Werner-Wilson et al., 1997, 2004; Zimmerman & West, 1996). This scarcity of studies could be explained by the technical difficulties in the analysis of sound for the evaluation of voice and interruptions and by the fact that, for a long time, these communicative behaviors were erroneously considered as elements subject to the rules of language and, therefore, not as non-verbal modes proper (Hall et al., 2005; K. R. Scherer, 1982, 1986).

However, the choice to focus this doctoral thesis on vocal and interruption behaviors derives from the fact that they are the principal (but not exclusive) means for transmitting the verbal content and structuring the therapeutic conversation (Andersen, 2008). Moreover, the elements characterizing the former (e.g., timbre, duration, intensity, accent, color) and the latter (e.g., the regulatory principles floor taking; Sacks et al., 2015) enrich the meaning and contextualize the verbal content itself (Andersen, 2008), providing information on the communicative acts performed during the therapeutic exchange (Knoblauch, 2005). Another no less important reason is that such communicative behaviors are strongly connected to the relational aspects of psychotherapy, as they influence the climate and the quality of the clinical relationship (Hall et al., 1995; Mellado et al., 2017; Rocco et al., 2013, 2018; G. Smith, 2016; Stern, 2004; Werner-Wilson et al., 2004). All this can be ascribable to the sedimentation in the *emotional memory* (Orange, 1995) of non-verbal interactions that emerge in the mother-child relationship and remain similar throughout life, becoming an essential element for therapeutic action (Beebe & Lachmann, 2002). For this reason, vocal and interruption behaviors emerging during the therapeutic conversation are often unconscious and convey the underlying psychological and emotional processes that integrate with the content emitted by participants (Krcmar et al., 2016; Philippot et al., 2003). This phenomenon generates in the other a *perceived responsiveness* (Maisel et al., 2008) whereby he/she "comes to believe an interactional partner understands, values, and supports key aspects of the self" (Dowell & Berman, 2013, p. 159).

Therefore, the dynamics underlying these aspects assume an essential role in the two-way coding-decoding process implemented by therapist and patient, as they foster the development of communicative actions (in the form of *non-verbal modes*) based on the performative function of language (Arístegui et al., 2009; Beebe & Lachmann, 2002): they guide the co-construction of meanings through conversational sequences observable turn by

turn and the change in the internal representations of participants. Hence, the study of these non-verbal behaviors is relevant to understand the micro-processes underlying psychotherapy.

Voice in Therapeutic Conversation. Voice parameters (e.g., tone, intensity, duration, and timbre) are fundamental elements for interpreting speech, as they represent one of the primary means by which verbal content is transmitted, strengthened, or modified (Andersen, 2008; Tomicic et al., 2011). These parameters attribute vocal quality and contextualize speech by providing information on the implicit meanings of the communicative actions performed (E. Martínez, 2003; Mellado et al., 2017). It is precisely thanks to its autonomous semantic properties that voice assumes an agent role in influencing verbal content, enriching the meaning of the utterance produced and emitted (Campanelli et al., 2007; Goldsmith et al., 2008).

In psychotherapy, the first empirical study on the role of vocal behaviors was performed by Rice and Wagstaff (1967), who underline their importance in understanding the therapeutic process and the emotional states of speakers. On the one hand, indeed, the vocal quality of the therapist and patient represents an indicator of the productivity of the therapeutic process itself, as it influences the development and consolidation of the latter (Mellado et al., 2017; Tomicic et al., 2011). On the other hand, it is associated with the expression of emotions through a two-way relationship: vocal behaviors allow inferring emotional states and, at the same time, the latter can influence the former (K. R. Scherer & Bergmann, 1990) based on the gradual consolidation of relationships and interactions between participants (Gobl & Chasaide, 2003). Hence, the voice acquires a curative potential, as it reflects the emotional state of the speaker, becoming a tool for empathic understanding by the listener (Tomicic, Bauer, et al., 2009): it is linked to the experience of individuals and leaves a trace at the level of implicit memory (Erickson, 1980). In support of this, the study of Osatuke et al. (2005) found that the individual encompasses different inner voices, which are traces of his/her experiences and which he/she

expresses through different vocal qualities. Indeed, various scholars (e.g., Bachorowski & Orwen, 2008; A. J. Russell et al., 2003; Tomicic et al., 2011) emphasize that the speaker's voice quality can influence the emotional states of the listener.

For example, Wiseman and Rice (1989) and Tomicic, Martínez, and Krause (2015) studied five client-centered psychotherapies and six brief psychoanalytic treatments, respectively, finding that voice quality of the therapist affects patients through regulatory processes. The study of Bady (1985) confirmed the curative role of voice, showing that the relaxed state of the therapist can calm the agitated voice of the patient and the associated emotions. Moreover, Tomicic, Bauer, et al. (2009) pointed out that psychotherapists recognize the voice as a useful tool within the therapeutic process: on the one hand, it allows the therapist to distinguish emotions and improve the understanding of patients; on the other hand, it enables them to produce changes by transforming the emotional climate and implementing specific interventions. In confirmation of this, Knoblauch (2000, 2005) claims that the patient's and the therapist's vocal behaviors can be one of the essential factors for change processes in psychotherapy, attributing to the therapeutic interaction a primary role where psychological and emotional meanings would be exchanged through the voice of participants.

The communication-centered research (Campbell, 2007), indeed, sustains that there is a link between the speech prosodic modulations and the relationship, such that "those speakers' emotional states may vary due to changes in the state of the relationship with their conversational partners" (Tomicic, Martínez, & Krause, 2015, p. 265). All this is in line with the theories derived from the intersubjective approach according to which the reciprocal regulation, observable turn by turn through vocal coordination sequences between therapist and patient, is connected to the processes underlying therapeutic change (Beebe et al., 2010; Stern et al., 1998; Tronick & Beeghly, 2011). As mentioned by Cavelzani and Tronick (2016), mutual-regulation leads each participant to influence the state of consciousness of the other and

consequently his/her self-regulation, determining a change in the individual functioning and the internal organization, which assume a more complex state. Therefore, in this thesis work, these communicative behaviors are assumed as vocal modes that act synergistically with verbal behaviors and are guided by mostly unconscious communicative intentions of participants (Freud, 1901/1914; Jones & LeBaron, 2002). All this contributes to the co-construction of complex and enriched meanings, based on such a two-way coding-decoding process that occurs during the interactive exchange between therapist and patient (Tronick & Beeghly, 2011): the understanding of vocal behaviors fosters the knowledge of the micro-processes underlying psychotherapy and change.

Interruptions in Therapeutic Conversation. Psychotherapeutic conversation, like any other human communication, is based on turn-taking rules that people internalize from the first interactive experiences they have in childhood with their caregivers (Tronick, 2007). An ideal conversation would require the perfect inter-speaker coordination, whereby participants appropriately exchange verbal and non-verbal signals, fostering the speech alternation (Grice, 1975; Sacks et al., 2015). However, interruptions are an integral part of the conversational process as elements expressing the interactive nature of discourse (Grosz & Sidner, 1986): they represent real non-verbal interactive behaviors of participants in the communicative exchange (Mahl, 1987). The interruptions, indeed, are used to connote intrusion/competition or cooperation based on the speaker's intentionality (Murata, 1994; Li, 2001; L.-C. Yang, 2003). Intrusive interruptions are associated with power and dominance (Ferguson, 1977; Kollock et al., 1985; Youngquist, 2009; Zimmerman & West, 1996), threatening the current speaker's space. In other words, the interrupter interrupts by overlapping to the process and/or content of the speaker's discourse to direct the communicative flow according to his/her intent (e.g., to change the topic, take the floor, express disagreement). From an acoustic viewpoint, this

competition manifests itself through high pitch and amplitude (L.-C. Yang, 2003). On the contrary, cooperative interruptions express –through overlapping or not– the interrupter's involvement, support, and solidarity (Roger & Nesshoever, 1987; Tannen, 1994) or the relationship construction (J. A. Goldberg, 1990); at the same time, they can manifest the interrupter's intent to help the current speaker by coordinating the process and/or content of the ongoing conversation (Li et al., 2004, 2005). From the sound characteristics viewpoint, such cooperation manifests itself with low or average levels of intonation (or in any case lower than competitive interruptions) and variable amplitude (L.-C. Yang, 2003). As it is possible to notice, the overlap in itself does not necessarily indicate a conflict, but it does not always represent an interruption. Consider, for example, backchannels (e.g., yes, mm-hmm) whereby one interlocutor overlaps the current speaker's speech: they do not interrupt the communication flow but support the elaboration of the themes. The essential element for overlapping to be an interruption is the intentionality (Pluszczyk, 2013; L.-C. Yang, 2003): the interrupter intentionally interrupts to intrude or collaborate.

Although scholars recognize the importance of interruptions, they represent a field little explored by psychotherapy research; it focused mainly on the influence of the therapist's gender (e.g., Werner-Wilson et al., 1997, 2004), on interruption behaviors during therapeutic interviews (e.g., Wiens et al., 1966), or on synchrony in psychotherapy (e.g., Matarazzo & Wiens, 1972). To our knowledge, only the study of Oka et al. (2020) considered the role of cooperative and competitive interruptions, underlining that the former has a positive effect within the therapeutic relationship. However, as L.-C. Yang (2003) claims, competitive and cooperative interruptions accompany the discourse flow between therapist and patient, increasing its complexity within a two-way coding-decoding process implemented by both participants. Given the asymmetric nature of the therapeutic relationship, the therapist is the conversational expert and the person responsible for organizing and timing the speech to

facilitate exploration and change. As a facilitator, the therapist influences the communication flow and, therefore, interruption becomes a means whereby he/she creates a conversational space that allows him/her to co-construct meanings with the patient through the mutual influence (G. Smith, 2016; Stratford, 1998). Stratford (1998), for example, underlines that the high use of interruptions by the therapist can be perceived by patients as an expression of their experience to modify the conversational content or flow, respond to the patients themselves, or adapt to their communicative style. On the other hand, the cooperation or competition of the therapist and patient interruptions generate conversational sequences –observable turn by turn– that impact on the communication emitted by each participant and on the co-construction of meanings (Jones & LeBaron, 2002; L.-C. Yang, 2003). For this reason, they assume the role of real non-verbal communicative acts that convey the cognitive and emotional processes of participants within that self-and mutual-regulation process, whose specific nature (cooperative or competitive) is a reflection of the underlying intentions of the interrupter (Wallis & Edmonds, 2017; L.-C. Yang, 2003).

Hence, the present thesis work assumed these non-verbal interactive behaviors as *interruptions modes* that interweave with the other verbal and non-verbal components, whose underlying intent enriches the meaning and strength of the interrupter's speech (Jones & LeBaron, 2002). The understanding of these communicative behaviors is significant to deepen the micro-process dynamics occurring in the therapist-patient interaction at the basis of psychotherapy change.

Classification of Therapeutic Conversation

Decades of studies on communication in psychotherapy entailed the construction of a multitude of investigation tools aimed at classifying its constituent components. As will be seen, this proliferation has occurred in line with the conceptualization of verbal and non-verbal

dimensions as in polar opposition where the former received more attention compared to vocal and interruption behaviors, despite researchers recognize their importance in the study of therapeutic micro-processes (Westland, 2015).

Main Classification Instruments of Verbal Behaviors. Over the decades, the interest in understanding therapeutic conversation from verbal behavior manifests itself through the succession of numerous classification systems aimed at analyzing different facets of therapist-patient interaction. Some of these systems either focus on a specific problem or are structured based on a specific theoretical approach (e.g., the Structural Analysis of Social Behavior [SABS], Benjamin et al., 2006; the Core Conflictual Relationship Theme [CCRT], Luborsky, 1998; the Comprehensive Psychotherapy Intervention Rating Scale [CPIRS], Trijsburg et al., 2002). Other tools analyze verbal communication from the perspective of the therapist (e.g., the Primary Therapist Response Modes [PTRM], Elliott et al., 1987; the Hill Counselor Verbal Response Category System-Revised [HCVRCS-R], Friedlander, 1982; the Conversational Therapy Rating System [CTRS], D. P. Goldberg et al., 1984; the Counselor Verbal Response Category System [CVRCS], Hill, 1978), or the patient (e.g., the Client Verbal Response Category System [CVRCS], Hill et al., 1981; the Dynamic Mapping of the Structures of Content in Clinical Settings [DMSC], Salvatore et al., 2012), or both participants (e.g., the Therapeutic Language Coding System [SILOCONTE], Rodríguez-Morejón et al., 2018; the Verbal Response Modes Taxonomy [VRM], Stiles, 1992; the Therapeutic Activity Coding System [TACS], Valdés et al., 2010).

Concerning the assessment of a specific problem, for example, the Structural Analysis of Social Behavior (SABS; Benjamin et al., 2006) measures interpersonal behaviors or intrapsychic events through three dimensions constituting the basic structures of social behavior (Focus, Affiliation, and Interdependence). The SASB consists of three diamond-

shaped diagrams, each reflecting a specific focus (the *other*, *self*, and *introject* surface), for a total of 108 behaviors; they are coded on analysis units consisting of any complete thought or significant psychological interaction of each participant. Regarding the tools for assessing the therapeutic conversation according to a specific model, the Comprehensive Psychotherapy Intervention Rating Scale (CPIRS; Trijsburg et al., 2002) measures the adherence and/or differentiation of treatment by focusing on the analysis of the therapist's interventions through 81 categories derived from the main therapeutic approaches (client-centered therapy, psychodynamic therapy, behavioral therapy, cognitive therapy, and systemic therapy).

For more general communication analysis instruments, the Counselor Verbal Response Category System (Hill, 1978) evaluates the therapist's verbal behaviors through 14 mutually exclusive categories by analyzing the response units (essentially grammatical sentences) of verbatim transcriptions and attributing a coding at speaking turn level. The Dynamic Mapping of the Structures of Content (DMSC; Salvatore et al., 2012), instead, analyzes the patient's narratives through 14 mutually exclusive modes grouped in 6 categories of referential and pragmatic meaning, the latter based on the linguistic acts theorized by Austin (1962). The categories are applied to the content unit of the patients' utterances, consisting of sentences of a maximum of 500 characters identified through a text analysis software. Among the tools that evaluate the therapeutic conversation and underline the importance of both participants in the interactive exchange, the Verbal Response Modes Taxonomy (VRM; Stiles, 1992) analyzes the patient's and the therapist's verbal utterances through 8 basic response modes, using the more general interpretative model of the theory of linguistic acts (Searle, 1969/2017), which is based on the literal and pragmatic meaning of communicative actions. On the other hand, the Therapeutic Activity Coding System (TACS; Valdés et al., 2010) analyzes the segments of the therapist's and the patient's verbal turns with regards to five dimensions (Basic, Communicative Intention, Technique, Domain, and Reference). These dimensions include a

total of 31 categories based on both the performative function of language (Searle, 1969/2017) and the concept of communicative actions (Krause et al., 2009), which have "the double purpose of bearing information (communication) and exercising an influence over the other participant and the realities created by both (action)" (p. 2).

Main Classification Instruments of Vocal Behaviors. The lower proliferation of studies on vocal behaviors in psychotherapy turned into an equally limited number of classification systems of this communicative dimension. Indeed, many investigations (e.g., Moneta et al., 2008; Weiste & Peräkylä, 2014) focused mainly on the study of the different sound characteristics of voice (frequency, intensity, timing, energy) during communication exchanges between therapist and patient. However, the Client Vocal Quality classification system (CVQ; Rice & Kerr, 1986; Rice & Wagstaff, 1967) can be considered as the first pioneer classification tool. The instrument measures the patient's vocal style of participation through four mutually exclusive nominal categories of vocal patterns (Focused, Emotional, Externalizing, and Limited) that are defined by specific combinations of sound characteristics (e.g., accents, accentuation, peace regularity, terminal contours, perceived energy, and disruption of speech). Later, Rice and Kerr (1986) developed the Therapist Vocal Quality classification system (TVQ) to identify the vocal aspects of the therapist's participation style through seven mutually exclusive categories of vocal patterns (Softened, Irregular, Natural, Defined, Restricted, Patterned, and Limited) defined by the same sound characteristics as the CVQ. More recently, Tomicic et al. (2011) and Tomicic, Guzmán, et al. (2015) developed the Vocal Quality Patterns (VQP) to evaluate the vocal quality of the therapist and patient in the therapeutic dialogue, based on the impact that the speech has on the listener regardless of the content expressed. The instrument, in its final version, consists of five exhaustive and mutually

exclusive categories (Report, Connected, Affirmative, Reflection, Emotional) characterized by specific combinations of acoustic parameters (tone, intensity, duration, and pitch).

Main Classification Instruments of Interruption Behaviors. It must be stated first that, in the field of psychotherapy research, the classification systems of interruption behaviors are untraceable because researchers focused mainly on the sound characteristics analysis of the speech, such as the reaction time latencies by Matarazzo and Wiens (1972). However, research in the linguistic field developed various taxonomies for classifying interruptions in conversational contexts that have been readapted by some scholars to the psychotherapy field (e.g., Oka et al., 2020). Among these, Ferguson (1977) built a classification scheme of successful or unsuccessful interruptions based on six categories (Overlap, Simple Interruption, Smooth Speaker-Switch, Silent Interruption, Butting-in Interruption, and No Interruption). Roger et al. (1988) developed the Interruption Coding System, a flow chart organized in interruptive and non-interruptive speech. The former was further divided into single or complex forms for a total of 17 discriminable interruptions. Murata (1994) distinguished the interruptions into cooperative and intrusive according to their use in the turn-taking system and defined the categories only of the second type (Topic-changing, Floor-taking, Disagreement). Finally, Li (2001) divided interruptions into successful and unsuccessful and distinguished the former into intrusive and cooperative drawing on the classification of Murata (1994). Compared to the latter, Li added the category Tangentialization to intrusive interruptions and defined the categories for cooperative ones (Agreement, Assistance, and Clarification).

The Need for an Integrated Classification System. As can be seen, the fragmentation of the communicative substratum, due to the different theories on therapeutic conversation, entails the construction of as many classification tools that are incommunicable among

themselves and investigate the different components (verbal, vocal, and interruption) separately from each other. The plethora of tools for classifying verbal behaviors in the therapeutic discourse, compared to the scarcity of classification systems for analyzing voice and the absence of instruments for identifying interruptions, underlines the need for further development of these facets of non-verbal communication, which are recognized by scholars as pivotal indicators of the therapeutic process.

Given this premise, it must be said that further aspects characterizing these instruments make it difficult to study the interactive dynamics of the therapist and patient at the communicative level. Firstly, many instruments investigate a specific facet of communication (e.g., SABS; Benjamin et al., 2006) rather than the therapeutic conversation as such. Most of them focus only on one participant, especially the therapist (e.g., HCVRCS-R; Friedlander, 1982), while the instruments applicable to the therapist-patient dyad are still limited in number (e.g., SILOCONTE; Rodríguez-Morejón et al., 2018). Furthermore, tools based on the performative function of language are scarce and focused mainly on the classification of verbal communication (e.g., VRM, Stiles, 1992; TACS, Valdés et al., 2010), but through a micro-segmentation of the participants' speaking turns that does not allow analyzing the trend of communication sequences during the psychotherapeutic process. Finally, from the voice perspective, the only traceable instrument that tries to classify this non-verbal dimension in the therapist-patient dyad is the Vocal Quality Patterns (Tomicic et al., 2011; Tomicic, Guzmán, et al., 2015); however, it provides only a first surface investigation of emotional aspects based on theories that do not focus on the performative function of language.

Despite the contribution given by the different instruments to the knowledge and understanding of the psychotherapeutic conversation, it emerges the need not only for a theory unifying the communicative substratum but also for a classification tool structured on this theory. Precisely, this instrument should be able to analyze verbal, vocal, and interruption

actions through a single and interacting system that adequately catches the complexity of the conversational dynamics between therapist and patient during psychotherapy.

Therapeutic Alliance: A Common Factor Emerging in the Communicative Field

According to the concept of the therapeutic process as a communicative field, this thesis now examines the dynamic factors emerging in the therapy context that predispose to change. Precisely, it focuses on one of the most relevant elements of psychotherapy: the therapeutic alliance (Flückiger et al., 2018; Lingiardi & Colli, 2015; McAleavey & Castonguay, 2015).

It must be stated first that, as Rosenzweig (1936) points out, "besides the intentionally utilized methods and their consciously held theoretical foundations, there are inevitably certain unrecognized factors in any therapeutic situation-factors that may be even more important than those being purposefully employed" (p. 412). In other words, behind the different forms of psychotherapy, scholars identified *common factors* that contribute to the therapeutic process and the treatment effectiveness of a wide variety of disorders and problems (McAleavey & Castonguay, 2015; Norcross & Golfried, 2019; Tschacher et al., 2015; Wampold & Imel, 2015). Among them, the therapeutic alliance is the most prominent common factor and change indicator that is investigated in psychotherapy research (Jiménez, 2005; Lingiardi & Colli, 2015; Tschacher et al., 2015), as proven by the numerous empirical evidence summarized in various meta-analyses (e.g., Orlinsky et al., 2004).

However, what is the alliance? Of course, it is a multidimensional construct (Krause et al., 2011; Mellado et al., 2016) that has evolved over the decades. The conceptual origin of the construct can be traced back to the first transcripts of Freud (1912/1966), where the author dealt with the similar concept of positive and negative transference that "dominates the whole of each person's relations to his human environment" (Freud, 1927/1961, p. 42). It was Zetzel (1956) who first coined the term *therapeutic alliance,* defining it as a relational component

established between the therapist and patient. Later, Greenson (1965) emphasized the conscious aspects of the relationship by distinguishing between the working alliance, meant as "the patient ability to work in the analytic situation" (p. 157), and the therapeutic alliance, meant as the ability of the therapist and patient to form a personal bond. In the mid-1970s, the interest shifted toward empirical research when Bordin (1979) freed the concept from psychoanalytic boundaries by giving a pantheoretical definition of the alliance as a global indicator of the quality of collaboration between therapist and patient, which measures the negotiation degree of three constituent elements: tasks, objectives, and bond. It is from this moment that there is a sudden rise in research studies up to the present day and the spread of the construct among the different psychotherapeutic orientations. These orientations, indeed, recognized its importance at a trans-theoretical level for two main reasons (Castonguay et al., 2006; Soares et al., 2010). First, the study and operationalization of the alliance, besides the interest in different variables, shown a moderate but robust correlation of this construct with the psychotherapy outcome, regardless of the theoretical approach and measurement tool. Second, it emerged that the alliance could be evaluated practically and directly during the therapy itself (McAleavey & Castonguay, 2015). For example, Webb et al. (2011) found that the collaboration of the therapist and patient about the tasks and goals of treatment was a predictive element of symptom changes in cognitive-behavioral therapy. On the contrary, other studies showed that the bond was the element of the therapeutic alliance that most influenced the outcome of brief psychodynamic therapies (e.g., Edalati Shateri & Lavasani, 2018) and interpersonal therapies (e.g., Wettersten et al., 2005).

In short, several meta-analyses (Del Re et al., 2012; Flückiger et al., 2018; Horvath et al., 2011) have confirmed that the therapeutic alliance quality is predictive of therapy outcome, regardless of the type of psychotherapy performed: it is the *quintessence* of the integrative variable of psychotherapy (Lingiardi & Colli, 2015).

Therapeutic Alliance as an Active Agent of Change in Psychotherapy Process

Based on the evidence of therapeutic alliance as a quality emerging from the mutual collaboration of the therapeutic dyad (Horvath et al., 2011; Krause et al., 2011), the '90s marked a change in research direction: the latter shifted the attention and interest toward process aspects and contributions of the therapist and patient in the construction of the therapeutic relationship (Colli et al., 2017; Lingiardi & Colli, 2015). The alliance, therefore, is released from the concept of static prerequisite for treatment, acquiring dynamic properties of continuous co-construction between therapist and patient (Krause et al., 2011; Lingiardi & Colli, 2015): it assumes the role of an active agent of therapeutic change occurring in the collaboration levels (Colli & Lingiardi, 2009; Eubanks et al., 2018; Uckelstam et al., 2018; Vernmark et al., 2019; Zilcha-Mano, 2017). In this context, alliance ruptures and repairs represent essential elements of these fluctuations in collaboration, and several studies confirmed their role in therapy outcomes and change processes (e.g., Bartholomew et al., 2016; Chen et al., 2016; Holmqvist Larsson et al., 2016; Vernmark et al., 2019). On the one hand, alliance rupture has been defined as a tear in the collaborative processes between therapist and patient (Safran et al., 2011), a deterioration of the relationship or communication processes (Safran & Muran, 2006): it represents a weakening moment of psychotherapy quality. On the other hand, repairs are based on the participants' willingness to overcome these impasse moments through a collaborative investigation process (Safran & Muran, 2003). In this sense, the therapeutic alliance is reconceptualized as a conscious and unconscious process of intersubjective negotiation, where the therapist and patient are both engaged in resolving the tension between their own and reciprocal needs and perspectives (Locati et al., 2019; Safran & Muran, 2003; Safran et al., 2011). For this reason, the therapeutic alliance lays the foundations for change and is itself an intrinsic part of the change process (Safran & Muran, 2003; Vernmark et al., 2019). Hence, therapeutic alliance quality can be conceived as "a function of

the degree of agreement between therapist and client about the goals and tasks of psychotherapy that is mediated by the quality of the relational bond between therapist and patient" (Colli et al., 2017, p. 2): it is recognized as a fundamental predictor of psychotherapy improvement (Castonguay et al., 2006; Flückiger et al., 2018; I. P. Strauss et al., 2006; Uckelstam et al., 2018; Vernmark et al., 2019).

According to the rupture-repair model (Safran & Muran, 2003), "rupture moments provide an opportunity for exploration and modification of a patient's maladaptive interpersonal schemas via the process of rupture resolution" (Reading et al., 2019, p. 116). Indeed, repairing ruptures with attunement allows the patient to acquire an ability to regulate negative emotional states and become more aware of the other (Dales & Jerry, 2008). From the patient's perspective, ruptures can be expressed, for example, by withdrawing from the therapeutic relationship and one's own emotions or, on the contrary, by manifesting anger and resentment toward the therapist or the relationship itself (Colli & Lingiardi, 2009; Colli et al., 2017; Lingiardi & Colli, 2015). Collaboration, instead, is performed through the patient's commitment to express feelings and thoughts, to make significant contributions, and to reflect on his/her conflicts and inner states (Colli et al., 2017). From the therapist's perspective, his/her contribution to the collaborative construction of the therapeutic alliance is not limited to understanding and managing the patient's ruptures. Indeed, the therapist also has to possess some interpersonal characteristics (e.g., empathy, attunement, warmth), ability to self-reflect on his/her internal states, and technical skills (e.g., selection of the intervention type and focus) that orient his/her work and the therapeutic relationship (Anderson et al., 2016; Colli & Lingiardi, 2009; Colli et al., 2017; Reading et al., 2019). On the contrary, therapists' behaviors characterized by insecurity, rigidity, criticism, defense are linked to alliance ruptures, as they generate hostility and resistance in patients (Ackerman & Hilsenroth, 2003; Colli & Lingiardi, 2009; Hilsenroth et al., 2012). Sommerfeld et al. (2008), for example, noticed a significant

relationship between the occurrence of ruptures and dysfunctional relational patterns involving the therapist. Muran et al. (2009) studied 128 patients treated by three types of psychotherapy (cognitive-behavioral, psychodynamic, and relational) and found that (a) the more the ruptures resolution increased, the better the quality evaluation of sessions improved; (b) the lower the ruptures intensity, the more positive was the result in interpersonal functioning. Finally, in the study by Rhodes et al. (1994) on the incomprehension phenomena during psychotherapeutic interaction, it emerged that ruptures resolution occurred when patients perceived they had a good quality of relationship with the therapist and felt safe and supported.

The therapeutic alliance dynamism, therefore, emerges as a series of developments, ruptures, and repairs that do not follow a linear model of growth with therapy but can be distinguished in two essential phases (Ardito & Rabellino, 2011; Krause et al., 2011). The first one coincides with the early alliance development during the first therapy sessions, reaching peaks in the third session. During this phase, the therapist and patient agree on goals, which develop a certain degree of trust and collaboration. In the second phase, the therapist begins to intervene on the patient's dysfunctional models at behavioral, cognitive, and affective levels to modify them. All this may entail the patient's perception of a reduction in support by the therapist, which may weaken the therapeutic alliance. The therapist has to be able to repair these deteriorations to achieve a positive outcome (Eubanks et al., 2018). Research in this sense has shown that the alliance measured during the initial and more advanced sessions of therapy predicts a better outcome than the therapeutic alliance measured in the intermediate phases (Edalati Shateri & Lavasani, 2018; Flückiger et al., 2018; Soares et al., 2010). According to Kivlighan and Shaughnessy (2000), the alliance seems to follow a U-shaped development model (high-low-high), where its strength is strong at the beginning of therapy, weakens in the middle, and increases at the end, correlating with better psychotherapy outcomes. Hence, from what has emerged so far, this thesis aims to deepen the dynamics of therapeutic alliance

ruptures and repairs that the therapist and patients implement in the first psychotherapy sessions, as these aspects are essential in increasing the knowledge on change processes.

Main Assessment Tools of the Therapeutic Alliance

Since the mid-1970s, the development of the therapeutic alliance measures kept pace with the construct evolution (Elvins & Green, 2008). Therefore, in line with this aspect, the present thesis work introduces the most widespread instruments, describing first those measuring the therapeutic alliance at a global level, and then those providing its evaluation at the process level.

It must be stated first that there is a multitude of alliance instruments at the global level; however, as detected by Horvath et al. (2011) in their meta-analysis on 201 studies, four are the tools most used by scholars: the Working Alliance Inventory (WAI; Horvath & Greenberg, 1986), the California Psychotherapy Alliance Scale (CALPAS; Marmar & Gaston, 1988), the Penn Helping Alliance Rating Scales (Penn-HAS; Alexander & Luborsky, 1986), and the Vanderbilt Therapeutic Alliance Scale (VTAS; Hartley & Strupp, 1983). All these measures are characterized by specific conceptualizations of the construct and are based on three main versions (patient, therapist, and observer) on Likert scales. The WAI (Horvath & Greenberg, 1986) captures Bordin's (1979) pantheoretical definition of the alliance through 36 items rated on a 7-point Likert scale and divided into three sub-scales: Goal, Tasks, and Bond. The CALPAS (Marmar & Gaston, 1988) evaluates the therapeutic alliance according to previous conceptualizations by Freud (1912/1966), Sterba (1934), Greenson (1965), and Bordin (1979). The tool focuses on measuring the capacity to work of the patient and the emotional involvement of the therapist through 24 items rated on a 7-point Likert scale and divided into four sub-scales: Patient Working Capacity, Patient Commitment, Working Strategy Consensus, and Therapist Understanding and Involvement. The Penn-HAS (Alexander & Luborsky, 1986)

is a set of scales that consists of the Helping Alliance Counting Signs, which measure specific verbal alliance indicators, the Helping Alliance Global Rating, which evaluates the global alliance, and the Helping Alliance Questionnaire, a self-report on the alliance in the patient and therapist version. This set of scales is based on Luborsky's (1976) concept of *helping alliance*, assessing the change of this construct over time by focusing on two types: Type I (Perceived Helpfulness) and Type II (Collaboration or Bonding). Type I refers to the patient's experience of the therapist as providing or being capable of providing the help that is needed. Type II concerns the patient's experience of treatment as a process of working together with the therapist toward the goals of treatment. Finally, the VTAS (Hartley & Strupp, 1983) focuses on the negative contributions of the therapist and the quality of client-therapist interactions, providing a conceptualized measure of the alliance from the dynamic and integrative perspectives. The tool consists of 44 items evaluated on a 5-point Likert scale and divided into three sub-scales: the respective contributions of the therapist and client to the alliance, and client-therapist interactions. Other types of evaluation tools are the post-session interviews (e.g., the Post-Session Questionnaire [PSQ]; Muran et al., 1992) or the open questions that show an advantage in the economy of administration.

The measures considered so far, however, provide a macro-level description of the therapeutic alliance as changes in a general factor related to outcome. Moreover, they are not able to analyze intra-session transactions by considering the interactive patterns that develop between therapist and patient. All this can lead to a loss of information about the ruptures events that may arise during the sessions (Charman, 2004; Lingiardi & Colli, 2015; Stevens et al., 2007; J. L. Strauss et al., 2006).

As a consequence of these limitations, the research focused on the study of alliance ruptures and repairs and collaboration fluctuations, analyzing the micro-processes occurring within psychotherapy sessions through tools based on the external observation of verbatim

transcriptions (Lingiardi & Colli, 2015). These tools are structured according to a top-down approach (i.e., theory-driven) according to which:

> The coding process is driven by the researcher's theoretical considerations prior to the analysis, and the categories employed during the analysis are defined a priori by the researcher and organized in a so-called category system. They are of a deductive nature, standardized, and rigid. They are thus often used within quantitative studies. The methods following such an approach may focus on the content or a combination of content and structure but rarely exclusively on the structure of a text. (Mörtl & Gelo, 2015, p. 396)

Although tools in this research area are not many, the main ones are the Menninger Alliance Rating Scale (MARS; Allen et al., 1984), the Harper's Coding System (Harper, 1989a, 1989b), the Rupture Resolution Rating System (3RS; Eubanks et al., 2015), and the Collaborative Interactions Scale-Revised (CIS-R; Colli et al., 2014). The MARS (Allen et al., 1984) is a measure based on Greenson's (1965) theorization of working alliance, which provides information on the shifts of collaboration with patients through the analysis of session transcripts. The Harper's Coding System (Harper, 1989a, 1989b) analyzes the psychotherapy transcripts by exclusively investigating the confrontation and withdrawal ruptures derived from Bordin's (1979) alliance theorization. The 3RS (Eubanks et al., 2015) evaluates the rupture and repair markers deriving from Bordin's (1979) alliance concept by observing the video recordings of psychotherapy sessions. Finally, the CIS-R (Colli et al., 2014) is an observer-rated tool based on Safran and Muran's (2003) theorization of the therapeutic alliance that, on the one hand, evaluates the therapist's and the patient's rupture and repair markers that impact on the alliance quality and the therapeutic relationship construction and, on the other hand, provides information on the collaboration fluctuations through the interactive schemes that develop between participants.

The Action of Therapeutic Conversation in Alliance Co-Construction

From what has emerged previously, verbal and non-verbal dimensions are the fundamental tools of psychotherapy (Elliott et al., 2001; Krause et al., 2007) whereby the therapist and patient co-construct change by connecting meanings in the form of new subjective interpretation and explanation models, leading to alternative global theories of self (Fernández et al., 2012). The action of verbal, vocal, and interruption behaviors –conveying content at conscious and unconscious levels– and the way these behaviors interact and self-regulate within the intra-and inter-mental space model the meanings, generating different forms of therapeutic discourses that in turn regulate the various interactions (Georgaca, 2014). As claimed by several scholars (Dagnino et al., 2012; Fernández et al., 2012; Morán et al., 2016; Reyes et al., 2008), these behaviors guide the interactive processes of the therapist-patient dyad in the construction of meanings according to a non-linear trend that keeps pace with the psychotherapeutic process trend. All this affects the quality itself of the therapeutic relationship (Adigwe & Okoro, 2016; C. Martínez et al., 2015).

The development of effective communication –deriving from the interaction of these communicative elements– is the foundation for a successful therapeutic relationship and, therefore, for a good therapeutic alliance. It emerges that the interaction represents a mutual regulation phenomenon at the basis of such effective communication and change (C. Martínez et al., 2015), as it promotes healthy psychological development through the consciousness expansion of that member of the dyad who is more vulnerable and has more difficulty in reaching all his/her abilities (Tomicic, Martínez, et al., 2009). As C. Martínez et al. (2015) claim, during the therapeutic conversation, the therapist and patient implement a two-way interactive regulation process, which manifests itself through verbal and non-verbal indicators and, in turn, is influenced by the self-and mutual regulation of participants. According to the authors, a fundamental element for the development of a good therapeutic alliance is the ability

to predict the verbal and non-verbal communicative behaviors of the other: it allows participants to regulate each other and to adapt the self-regulation to the intersubjective field.

Coordination (or synchrony) is considered as a manifestation of such regulation processes because it allows the construction of an intersubjective matrix on which change is based (Beebe, 2006). The literature on this issue (e.g., Horvath, 2005; C. Martínez et al., 2012; Morán et al., 2016; Oka et al., 2020; Tomicic & Martínez, 2011; L.-C. Yang, 2003) recognizes the importance of verbal, vocal, and interruption coordination between the therapist and patient: it is an essential factor for the development and success of therapy in terms of the therapeutic alliance. According to this, the relationship is conceived as a mutual regulation process where both participants, consciously and unconsciously, negotiate their needs and desires for autonomy and association (C. Martínez et al., 2015; Morán et al., 2016; Safran & Muran, 2006). This process continuously oscillates between non-coordination and coordination states emerging in therapist-patient interaction and corresponding to the deterioration or resolution of the communication flow, respectively. These phenomena of coordination and lack of coordination at the verbal and non-verbal level manifest themselves in the form of ruptures and repairs of intersubjective negotiation processes at the basis of the therapeutic relationship, affecting the therapeutic alliance quality and, consequently, the co-construction of change (Colli et al., 2017; C. Martínez et al., 2012; Morán et al., 2016). In particular, the alliance ruptures are interruption phenomena of communication between the therapist and patient that express the dysfunctional models of the latter at the relational level, because they are based on conscious and unconscious organizational principles influencing the regulatory processes (C. Martínez et al., 2015; Safran & Muran, 2003). Hence, repairing ruptures by restoring communication provides information about the potential of the patient for negotiation (Colli & Lingiardi, 2009; Safran & Muran, 2006). As C. Martínez et al. (2015) point out, “this action fortifies the trust between the participants by allowing them to see each other from different

perspectives, as holding different viewpoints on reality, and to tolerate the lack of omnipotence resulting from not always having the only truth" (p. 74).

It must be said that, although scholars recognize the significant role of verbal, vocal, and interruption behaviors in the construction of the therapeutic alliance and change (Morán et al., 2016; Philippot et al., 2003; Rocco et al., 2018), they paid little attention to the mutual regulation processes in the therapist-patient dyad and investigated these facets by considering the communication dimensions separately and in polar opposition (Westland, 2015). For example, resuming the studies previously mentioned, scholars found that the verbal structures for requesting and stating information (Krause et al., 2016) and the communicative intention of exploration (Dagnino et al., 2012) represent elements of verbal communication that foster the coordination processes underlying the therapeutic alliance construction. In the field of vocal behaviors, on the other hand, the vocal qualities of the elaborative and emotional type are those that support the coordination processes (Tomicic, Martínez, & Krause, 2015). Finally, concerning research on interruption behaviors, scholars showed the significant role of collaborative interruptions in these processes (Oka et al., 2020).

For this reason, this thesis work investigates the mutual regulation dynamics between the therapist and patient in the therapeutic alliance construction through the microanalysis of communicative behaviors (verbal, vocal, and interruption) considered as a single integrated and interacting system. All this may overcome the limitations of previous research, providing useful information that increases the knowledge on the construction of such a collaborative relationship during sessions and improves the psychotherapy effectiveness.

Depressed Patient Characteristics in Brief Focal Psychotherapy

According to what described above, during psychotherapeutic interaction, patients experience the alliance construction manifesting different verbal and non-verbal behavioral

modes (Tomicic, Martínez, et al., 2009; Valdés & Krause, 2015), whereby they express their psychological processes and symptoms (Elvevåg et al., 2016; Valdés, 2014). In particular, this doctoral thesis wants to focus on depressed patients for two reasons: on the one hand, the World Health Organization (2008, 2012) estimates that depression will become the major cause of disease by 2030; on the other hand, specific verbal and non-verbal correlates characterize the communicative behaviors of this type of patients (Tomicic, Martínez, et al., 2009; Valdés & Krause, 2015), making it difficult to develop and maintain the therapeutic alliance and, consequently, the construction of change (Balsters et al., 2012; Smirnova et al., 2018).

Depression is a heterogeneous and difficult to diagnose mood disorder (American Psychiatric Association, 2013) that affects the emotional, cognitive, and somatic sphere of an individual by limiting his/her ability to function in everyday life (Alghowinem et al., 2013; Ribeiro et al., 2018). According to the explanation of psychodynamic psychotherapy, which derives from the early works of Freud (1898/1985), this disorder represents a *psychic wound*, a kind of *hole in the psyche* that drains the individual's energies. It originates from the (real or ideal) loss of the love object, which involves:

> A profoundly painful dejection, cessation of interest in the outside world, loss of the capacity to love, inhibition of all activity, and a lowering of the self-regarding feelings to a degree that finds utterance in self-reproaches and self-revilings, and culminates in a delusional expectation of punishment. (Freud, 1917/1957, p. 244)

Depressed patients oscillate between a desire for dependence on others, due to the difficulty in maintaining an adequate relational distance, and a demanding attitude toward themselves (Levy & Wasserman, 2009). This inner conflict is characterized by an emotion of anger, like an unconscious source whence the sense of guilt and self-criticism originates (Busch, 2009). Precisely, anger management is one of the key elements whereby the discomfort of depressed patients manifests itself: it can lead to hostility undermining interpersonal

relationships because others are not recognized as sources of support. Hence, depression influences the way individuals feel, think, communicate, and behave (American Psychiatric Association, 2013): they show different defensive, adaptive, and cognitive styles resulting from the early cognitive-affective representations, where anger and aggression are predominant (Levy & Wasserman, 2009).

Given the difficulty in the diagnosis of this disorder, the microanalysis of verbal and non-verbal behaviors provides useful indicators on the psychological processes that guide depressed patients about the subjective meaning they have of themselves and the surrounding reality (Morales et al., 2018). In particular, since patients with depressive symptoms have difficulties in the verbal expression of their cognitive and emotional states, non-verbal indicators are useful instruments whereby to understand their inner reality (Nan & Ho, 2014). Several studies, indeed, have shown that depression influences verbal and non-verbal behaviors (e.g., syntax, Zinken et al., 2010; semantics, Rude et al., 2004; voice quality, S. Scherer et al., 2013; prosody, Y. Yang et al., 2013; discourse interruptions, Segrin & Flora, 1998) and the representational organization of individuals (Blatt et al., 1996). Precisely, from the verbal communication perspective, scholars have found that speech of depressed patients is stereotyped, rambling, repetitive, and vague, revealing an inability to express certain feelings and thoughts (Bucci & Freedman, 1978). Verbalizations tend to refer mainly to mental rather than emotional states (Rodriguez et al., 2010), to negative rather than positive emotions (Rude et al., 2004), and to differ in the syntactic structures used and in the construction of the relationship between events (Zinken et al., 2010).

Concerning the bond between depression and non-verbal communication, scholars observed that depressed patients present extra-linguistic markers associated with their mood states and distinguishable from those of other individuals (Cohn et al., 2009). Precisely, these patients show a reduced intonation, a slower speech, longer pauses, a lower volume that are

related to the associated states of sadness (Alghowinem et al., 2013; Christopher & MacDonald, 2005; Cummins et al., 2015; S. Scherer et al., 2013). Finally, another important aspect that characterizes these patients is the greater number of interruption behaviors that they implement compared to non-depressed individuals, carried out through abandoned, incomplete, interrupted, or interrupting speech (Segrin & Flora, 1998). All these aspects translate into a lack of empathy and relational responsiveness as well as a reduced sensitivity to the communication of the other, given that depressed patients tend to focus primarily on themselves, to express negative contents and themes of impotence, and to have a distorted perception of interactions (McCullough, 2000). Therefore, the verbal and non-verbal indicators of depression, as they convey inner conflicts and anger, induce these patients not to be assertive in relationships, undermining the construction of the psychotherapeutic exchange and, consequently, of the therapeutic alliance (Renner et al., 2012; Smirnova et al., 2018).

In this sense, among the various forms of treatment, brief focal psychotherapy, as a psychodynamically oriented talking cure (Breuer & Freud, 1895/1955; Marx et al., 2017) focused on the hic et nunc of a circumscribed area of discomfort (Rawson, 2018), fosters the exploration of the inner reality and the co-construction of new meanings by depressed patients, emphasizing the role of the therapeutic relationship (Driessen et al., 2015). Moreover, from an emotional perspective, this psychotherapeutic approach aims to reduce hostility, to recognize and express anger (often unconscious), to increase positive emotions, and to identify behavioral patterns of this kind of patient. All this allows depressed patients to acquire internal resources and skills that translate into a change in their verbal and non-verbal modes, fostering the development of assertiveness and the creation of more appropriate boundaries in their relationships, which stimulate the therapeutic alliance and change (Busch, 2009; Laws et al., 2017; Picardi & Gaetano, 2014; Ribeiro et al., 2018).

However, it is important to stress that, although the literature emphasizes the communication-therapeutic alliance relationship in depressed patients (e.g., Negri et al., 2019; Reich et al., 2014; Rocco et al., 2018), the psychotherapy research conceptualization of communicative components as in polar opposition (Westland, 2015) has actually defined a communicative field dominated by the verbal dimension, not sufficiently recognizing the value of vocal and interruptions behaviors as integrating and interactive indicators of depressed patients' speech. Hence, the understanding of verbal, vocal, and interruption dynamics of the therapist and depressed patients that encourage the alliance construction during communicative exchanges can provide useful information to increase the knowledge and effectiveness of change processes, especially in the Italian context where this type of study is absent.

Mixed-Methods Approach to Investigate Therapist-Patient Interaction

Over the decades, research in psychotherapy has been characterized by the emergence of different research methods based on two main approaches, quantitative and qualitative (Hardy & Llewelyn, 2015). In general, while scholars used the first one to answer questions about causality, generalizability, or effects, they applied the second to investigate how and why a phenomenon occurs or to describe the individual's experience (Fetters et al., 2013). The two approaches, therefore, assumed different positions concerning the nature of reality (ontology), knowledge (epistemology), principles that guide them (methodology), and technical problems related to them (research methods), which led researchers to identify themselves with one area or the other (Gelo et al., 2008, 2009; Teddlie & Tashakkori, 2009). This split gave rise to a still open debate between the two approaches, ascribable to the diatribe between positivism and constructivism/interpretivism that characterize the quantitative and qualitative paradigm, respectively (Dattilio et al., 2010; Sale et al., 2002).

However, if the choice of method depends on the nature of the research question (Hardy & Llewelyn, 2015), then the complexity of the investigation object of this thesis (i.e., the analysis of communication processes that foster the alliance construction in therapeutic interaction) highlights the limitations of both paradigms. For this reason, it was decided to opt for the mixed-methods paradigm (Creswell & Plano Clark, 2018), which is the most suitable to answer the question of this doctoral thesis, as it provides a fuller picture of therapeutic interaction by supporting the latter with objective measures (Bartholomew & Lockard, 2018). On the one hand, this paradigm allows determining and *quantitizing* (Sandelowski et al., 2009) the communicative modes of the therapist and patient; on the other hand, it permits relating them to the alliance construction. Indeed, the mixed-methods approach, emerged in recent decades as a real third research area (Teddlie & Tashakkori, 2009) or paradigm (Johnson & Onwuegbuzie, 2004), combines elements of quantitative and qualitative methods (e.g., the use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) in a complementary way (Anguera, Blanco-Villaseñor, Losada, Sánchez-Algarra, & Onwuegbuzie, 2018; Dattilio et al., 2010) "for the broad purposes of breadth and depth of understanding and corroboration" (Johnson et al., 2007, p. 123).

Therefore, the mixed-methods paradigm application provides a broader and more complete set of complementary information about the phenomenon under investigation (Creswell, 2012). Indeed, results deriving from the use of one method (qualitative or quantitative) increase and support the meaning of results of the other through *methodological triangulation* that improves the external and internal validity (Dattilio et al., 2010; Denzin, 2009; Tashakkori & Teddlie, 2003). Precisely, *triangulation* makes it possible to combine data from multiple sources (e.g., semi-structured interviews, observations, archive materials) by integrating the strengths and weaknesses of quantitative methodology (e.g., sample size, trends, generalization) with those of qualitative methodology (e.g., the wealth of data derived from a

descriptive record, small samples), achieving a more substantial picture in a single study (Creswell, 2012; Denzin, 2009). According to Creswell and Plano Clark (2018), this integration of qualitative and quantitative data is possible through three ways that consist of *merging* datasets by joining them together, *connecting* the two datasets by building one on top of the other, or *embedding* one dataset within the other so that one type of data supports the other. Precisely, the connecting option represents the most suitable choice to achieve the research and the objectives of this doctoral thesis. Indeed, as Anguera et al. (in press) claim, it allows *quantitization* to be reformulated by transforming qualitative data into a systematized record in the form of a matrix of codes, also of a qualitative type, which can be quantitatively analyzed while maintaining the informative quality of data. Moreover, the connecting option guarantees the implementation of the qualitative-quantitative-qualitative process (QUAL-QUAN-QUAL), consistently with the mixed-methods approach: it allows a full integration between qualitative and quantitative elements, which fosters the understanding of the therapeutic process complexity (Anguera, 2020; Creswell & Plano Clark, 2018). The increasing use of this paradigm within psychotherapy research is consolidating its ability to meet the need for an approach capable of bringing research closer to clinical practice, as proven by several studies realized over the years (e.g., Arias-Pujol & Anguera, 2017, 2020; Hanson et al., 2005; Hill et al., 2008; Howells et al., 2020; Roustan et al., 2013; Venturella et al., 2019).

Observational Methodology as a Mixed Method in Itself

The observational methodology, as a pioneer in the complementarity of qualitative and quantitative approaches (Anguera & Izquierdo, 2006), is a mixed method in itself (Anguera, 2020; Anguera, Portell, et al., 2018; Chacón-Moscoso et al., 2014) “that aims to quantify spontaneous behaviour that emerges in unprepared situations” (Anguera, 1990, p. 126). Precisely, systematic observation represents the optimal option to analyze natural behaviors

and interactions (Anguera, 2020), such as the therapist-patient exchanges emerging in the ecological context of psychotherapy interventions. Indeed, in the last two decades, this methodology has acquired its own identity (Portell, Anguera, Chacón-Moscoso, & Sanduvete-Chaves, 2015; Portell, Anguera, Hernández-Mendo, & Jonsson, 2015) by structuring itself according to the scientific method criteria (research question formulation, data collection, data analysis, interpretation of results) and ensuring high rigor and flexibility (Anguera, 2020; Anguera, Portell, et al., 2018; Anguera et al., 2020). All this allowed integrating and overcoming the conceptualization of observation as a mere technique that uses certain resources (e.g., recording, coding, estimating temporal disruptions, focal sampling) and is subject to other methodologies (e.g., selective method and experimental method).

According to the observational methodology, it is possible to study any perceptible behavior (e.g., facial expressions, voice tones, body movements, verbal expressions) emerging in daily life (Anguera & Hernández-Mendo, 2016) based on two different indicators: the level of the observer's participation (Anguera, 2003) and the degree of perceptiveness (Anguera, Portell, et al., 2018). The former configures different relationships between observer and observed; for example, in psychodynamic psychotherapy, the observer remains neutral (or non-participant) concerning the interaction between the therapist and patient. The latter distinguishes between direct observation (with a complete perception of behaviors through video recordings and video images) and indirect observation (with a partial perception of behaviors through audio recordings and verbatim transcriptions).

In this doctoral thesis, indirect observation is the most appropriate methodological approach to study the behaviors emerging in the therapeutic discourse and to catch the interactions of verbal, vocal, and interruption behaviors with alliance ruptures and repairs in therapist-depressed patient exchanges. On the one hand, it is less intrusive than direct observation in analyzing the communication flow emerging between therapist and patient

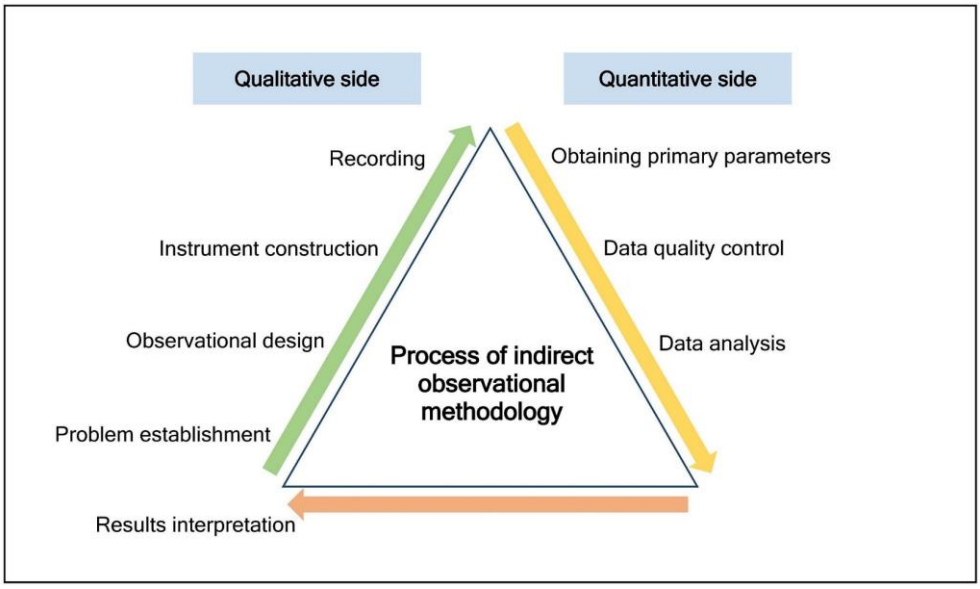
within the ecological and unstructured context of psychodynamic psychotherapy (Gabbard, 2017). On the other hand, the greater rigor required for this methodological approach and the maximum precision of technological tools reduce the potential risk of hidden behaviors influenced by the inference of the observer that indirect observation may imply (Anguera & Hernández-Mendo, 2016). From a clinical point of view, indeed, the use of the audio recorder in the psychodynamic setting is a more consolidated practice than that of the video recorder (Hardy & Llewelyn, 2015; Town et al., 2012). It represents a *third ear* (Dreher, 2018; Thomä & Kächele, 2007) that allows clinicians to catch the therapeutic process characteristics, to observe the communicative events emerging between the therapist and patient during the session, as well as encouraging the self-analysis of the therapist and improving the effectiveness of his/her interventions (Hardy & Llewelyn, 2015; Town et al., 2012). From the research viewpoint, the therapeutic session audio recording and its verbatim transcription allow researchers to analyze the psychotherapeutic exchange through a non-participant observation of interactions, which provides them with rich observable and objectives data whereby to conduct fine-grained analyses of the communication dynamics occurring turn by turn in the therapeutic dyad (Gelo & Manzo, 2015; Hardy & Llewelyn, 2015; Mörtl & Gelo, 2015; Schröder et al., 2015; Town et al., 2012).

The Process of Indirect Observation

Like any other systematic observation based on qualitative-quantitative complementarity, indirect observation consists of a series of steps organized in three ordered phases (QUAL-QUAN-QUAL), as depicted in Figure 1:

Figure 1

Steps of the Indirect Observation Process



Note. Adapted from Anguera, Blanco-Villaseñor, Losada, and Portell (2018, p. 11).

Since the present thesis work is organized as a collection of publications, these steps will be put into practice and described comprehensively in each article. Therefore, below, this section will focus on the pivotal conceptual aspects that characterize this methodology.

Firstly, from Figure 1, it can be seen that the process of the indirect observational methodology is characterized by a first qualitative macro-phase where the researcher elaborates an ad hoc indirect observation tool –in line with the study objectives and the selected observational design– to obtain the corresponding record (Anguera, Blanco-Villaseñor, Losada, & Portell, 2018; Anguera & Hernández-Mendo, 2016). The process continues with a quantitative macro-phase where he/she detects the primary parameters (frequency, order, and duration) and performs the quality control and analysis of data. Finally, this methodology ends again with a qualitative macro-phase where the researcher relates the results obtained to the initial problem through discussion and interpretation.

Goal setting and process planning are guided by a series of decisions that the researcher must make about: 1) the problem demarcation (establish the behaviors of interest in connection with the context); 2) the process agenda (make an early exploratory observation to delimit the problem); 3) observational restrictions (establish criteria to support the correct application of the observational methodology); 4) the reduction of bias (define strategies for proper planning and training of the observer); 5) the response levels (select the communication dimensions of interest according to the theoretical model or from scratch); 6) the behavior unit and segmentation criteria (segment the communication flow according to the degree of molarity-molecularity established for the units to be observed so that they are *identifiable*, *nameable*, and *operationally definable*); 7) the temporality (define the observation moments to obtain a representative sample of behaviors); 8) the session acceptance (specify the requirements of an observation session to be included in the study) (Anguera, Blanco-Villaseñor, Losada, & Portell, 2018; Anguera & Hernández-Mendo, 2016).

Particular attention needs to be paid by the researcher to some of these decision-making aspects: observational restrictions, bias reduction, and temporality (Anguera, 2003; Anguera & Hernández-Mendo, 2013). Concerning the observational restrictions, the researcher must (a) maintain *inter-session constancy* by defining a series of requirements (e.g., day, place, setting features) to ensure the highest degree of homogeneity between observation sessions; (b) maintain *intra-session constancy* to avoid interruptions of observed events; (c) manage *temporal disturbances* (e.g., technical problems) that may interrupt the observation activity, but without the observed event stopping; (d) label each observation session with additional information (characteristics of the physical environment, type of activity, participants, organizational aspects). Furthermore, the researcher needs to define a series of strategies aimed at reducing bias, which can be distinguished in *reactivity bias* (i.e., alterations in the spontaneous nature of the participants' behavior due to their awareness of being

observed), *expectation bias* (i.e., forecasts and/or anticipations by the observer of uncontextualized or unperceived behaviors), and various *technical bias* (e.g., incorrect planning of observational sampling, malfunctioning of technical means).

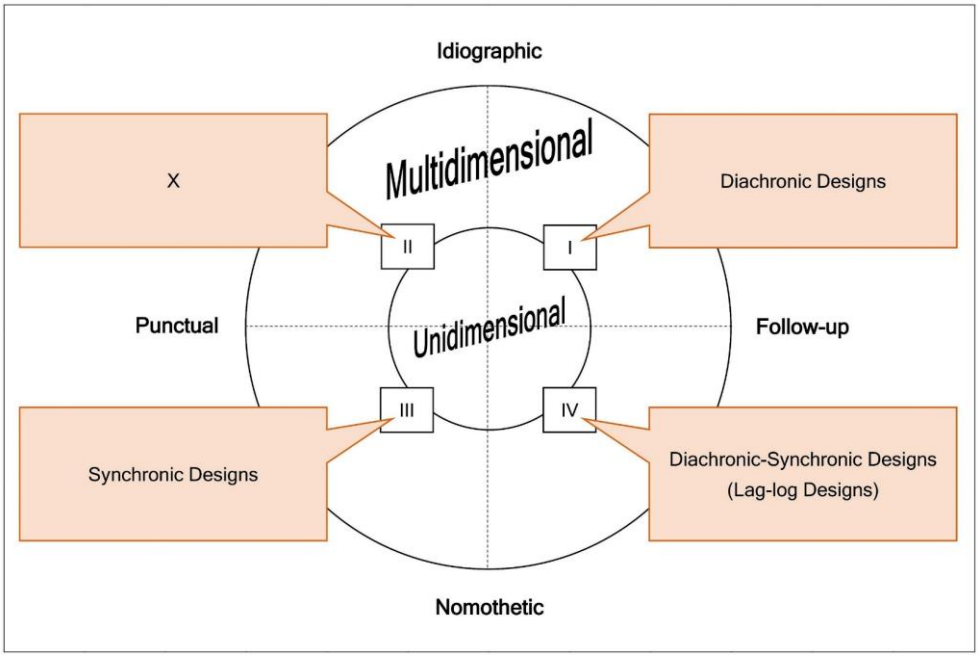
Finally, the temporality requires that the researcher establishes a sampling plan, i.e., a series of inter-and intra-session decisions that define when performing the observation to obtain a representative sample of participants and behaviors under investigation as well as producing the desired record (Anguera & Hernández-Mendo, 2013). On the one hand, inter-session sampling consists of defining the period and periodicity of observation, the minimum number of observation sessions, as well as the beginning and the end of the observation session. On the other hand, intra-session sampling concerns the behaviors collected during each session according to different options: *continuous recording* of the whole session (usually in the exploratory phase); *event sampling* where only specific behaviors are recorded; *time sampling* where information is selected according to a period; *focal sampling* where the session duration is homogenously divided with several participants (Anguera, Blanco-Villaseñor, Losada, & Portell, 2018).

All these decisions take the shape of an observational design, a strategy that (a) sets the guidelines to conduct the study empirically; (b) organizes the data according to the established objectives; (c) and identifies the appropriate statistical analysis (Anguera & Hernández-Mendo, 2013). The researcher will have to choose carefully among eight observational designs resulting from the combination of three dichotomous criteria (Blanco-Villaseñor et al., 2003; Portell, Anguera, Chacón-Moscoso, & Sanduvete-Chaves, 2015): *study unit*, divided into Idiographic (one unit/participant) and Nomothetic (several units/participants); *temporality*, divided into Punctual (synchronic) and Follow-up (diachronic); and *dimensionality*, divided into Unidimensional (one response level) and Multidimensional (multiple response levels). In particular, dimensionality will be fundamental and strictly connected with the type of

observational instrument suitable in each case (Anguera et al., 2007). The intersection of these criteria produces a graphic depiction divided into four quadrants, where the eight observational designs are distributed according to specific characteristics of each one (Figure 2).

Figure 2

Low-Intensity Evaluation Designs



Note. Personal depiction derived from Anguera (2001, p. 25).

As shown in Figure 2, Quadrant I is characterized by *Diachronic or sequential designs* that study the internal contingencies of events or states related to the participants' behaviors, making it possible to detect and interpret sequential patterns of behavior. Quadrant II is marked by the collection of punctual data from a single unit in the form of an uninterrupted record. Generally, as it is a single unit, it does not provide consistent information capable of ensuring the scientific nature of the study and valid data for further analysis. However, sometimes the sessions may be long enough to perform certain types of statistical analyses. Quadrant III is characterized by *Synchronic or cross-sectional designs* that study the relationships between the

various variables measured synchronously. Finally, Quadrant IV identifies *Diachronic-Synchronic designs* (or *Lag-Log designs*), where successive events or intervals are coded in two or more dimensions to study the relationship between adjacent (or almost adjacent) behaviors. A further factor, *sequentiality*, can be considered as a fourth criterion that differentiates studies into *extensive*, which provides static behavioral indicators (e.g., frequency or duration), and *intensive*, which provides dynamic indicators (or sequential data), such as transition frequencies (Anguera, Blanco-Villaseñor, Losada, & Portell, 2018). All this expands the range of observational designs based on a low-level of intervention (Chacón-Moscoso et al., 2014; Portell, Anguera, Chacón-Moscoso, & Sanduvete-Chaves, 2015). According to these four criteria, the observational designs are organized hierarchically, from the simplest structure (idiographic, punctual, unidimensional, extensive) to the most complex (nomothetic, follow-up, multidimensional, intensive), and guide the decisions about data collection, management, and analysis (Anguera & Hernández-Mendo, 2015; Blanco-Villaseñor et al., 2003).

Data collection involves the construction of an indirect non-standard tool that represents the starting point whereby the corresponding recording can be performed. This instrument derives from the combination of two basic tools of the observational methodology, which are elaborated ad hoc according to the study's objectives (Anguera, 2020): *category systems*, a rigid and theory-based tool, and *field formats*, a flexible tool in highly complex situations. As Anguera et al. (2007) state, it is advisable to nest one or more category systems in one or more of the field format criteria so that the relationship of behaviors/situations corresponding to this (these) criterion (criteria) would be the categories that constitute the system. These categories, therefore, are exhaustive and mutually exclusive (E/ME; Anguera, Portell, et al., 2018) at the intra-criterion level of field format. The type of observational design influences the construction of the ad hoc instrument since the system of categories is one dimensional by definition, while field formats are multidimensional. The observational tool application will

result in a systematized record in the form of a code matrix (for this purpose, it is advisable to establish a set of rules for the application of codes that result from a first descriptive analysis of observed events) (Anguera, Blanco-Villaseñor, Losada, & Portell, 2018).

Data management is performed according to the type of data the researcher is interested in obtaining in the study. The categorical nature of recorded data directly affects the measurement that can be applied to the record and, therefore, characterizes the type of observational design selected. For Anguera et al. (2017) and Bakeman (1978), primary parameters (frequency, order, and duration) are essential to delimit the nature of the recorded data. Compared to the traditional mixed-methods approach where the quantitization (Sandelowski et al., 2009) of qualitative data is performed through frequency measurements (Creswell et al., 2003), the indirect observational methodology is more robust and provides more consistent data (Bakeman, 1978). Indeed, in addition to frequency, it also uses the primary parameters of order and duration according to the following *progressive order of inclusion* (Anguera et al., 2017; Bakeman, 1978): frequency (which only indicates the number of occurrences); order (which also provides information about the sequence); and duration (which also denotes the time in conventional units besides the other parameters). Within this methodology, the integration of qualitative and quantitative data follows the connecting option recommended by Creswell and Plano Clark (2018), which is based on a transformation process that *quantitizes* qualitative data; in other words, it transforms non-systematic qualitative data into a suitable format for quantitative analysis (Anguera, Portell, et al., 2018). All this makes it possible to catch the richness of the phenomenon under study.

As Anguera and Hernández-Mendo (2013) state, the purpose of data management is to link the observational design, on which each research objective is based, both to the data nature (primary parameter) and to the needs/restrictions applied in each case. Therefore, in agreement with Bakeman (1978), it is possible to define a classification of data types according to two

main criteria, occurrence and basis, the combination of which determines four types of data that will guide subsequent analyses (Table 1).

Table 1

Classification of Data Types According to Bakeman (1978)

Basis	**Occurrence**	
	Sequential	Concurrent
Event	I	II
Time	III	IV

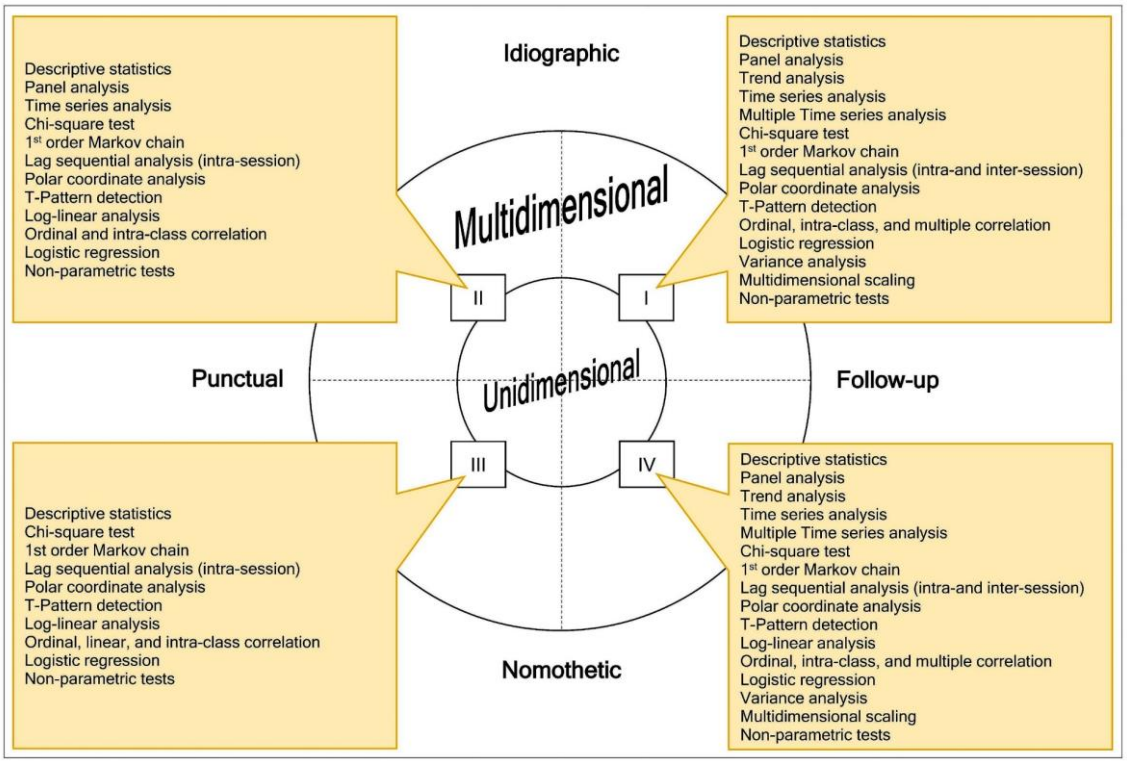
Note. Adapted from Anguera (1990, p. 152).

According to Anguera (1990), in Data Type I (sequential and event-based), the observer records the order of events but not their duration. The category system is mutually exclusive and, therefore, only one conduct at a time can occur. In Data Type II (concurrent and event-based), the order of events is collected without considering their duration, but with the difference that the categories are mutually exclusive at the intra-level and concurrent at the inter-level; therefore, several events can occur at the same time. In Data Type III (sequential and time-based), the order of occurrence and the duration of events is noted. In this type of data, the categories are mutually exclusive. As for Data Type IV (concurrent and time-based), the duration of events is collected, and they can occur simultaneously. Consequently, the category system is not mutually exclusive.

Finally, data analysis, which requires prior optimization through quality control (Anguera & Hernández-Mendo, 2013), involves considering the number of units, temporality, dimensionality, and data nature. Figure 3 shows data analyses that are suggested according to the corresponding quadrant (Anguera, Blanco-Villaseñor, Losada, & Portell, 2018).

Figure 3

Analysis Techniques Based on Observational Designs



Note. Personal depiction derived from Anguera, Blanco-Villaseñor, Losada, and Portell (2018, pp. 15–16). As mentioned above, if the single unit of quadrant II is long enough, it is possible to obtain punctual data in the form of an uninterrupted record that allows performing some analyses.

Within the psychodynamic setting, the dynamics between the communicative field emerging from the therapist-patient interaction and the construction of a good therapeutic alliance present great richness that the observational methodology can study by considering different dimensions at the same time (Weick, 1968) and different *granularity levels* (Schegloff, 2000) of behaviors, from more molars to more molecular (Anguera, 2020). Given the complexity of the phenomenon studied in this thesis work, it was decided to put into practice a peculiar and unconventional case of the indirect observational methodology.

Precisely, it was elaborated an integrative procedure that, in a first phase, would allow observing the therapist's and the patient's (verbal, vocal and interruption) modes through the construction of an ad hoc indirect observation tool and, in a second phase, would allow analyzing the action of those communicative modes that foster the construction of a good therapeutic alliance (evaluated through an observational tool with deductive categories).

It is important to emphasize that the integration between bottom-up and top-down tools is outdated and not so widespread in the observational methodology applied to social sciences. For example, the SYstematic Multiple Level Observation of Groups (SYMLOG; Bales & Cohen, 1979) is a set of methods dating back to the late 1970s as an "integrated theory of personality and group dynamics" (Bales, 1988, pp. 320), which measures interactive behaviors by systematically observing real groups and detecting the frequency of such behaviors. However, in this thesis, the application of an integrative procedure is useful to study interrelated phenomena at the process level. Moreover, it allows catching the complexity of the dynamics between the therapist and depressed patients in the Italian context of brief focal psychotherapy from different perspectives at the same time.

Publications

Study 1. The Communicative Modes Analysis System in Psychotherapy From Mixed Methods Framework: Introducing a New Observation System for Classifying Verbal and Non-Verbal Communication

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The Communicative Modes Analysis System in Psychotherapy from Mixed Methods framework: Introducing a New Observation System for Classifying Verbal and Non-verbal Communication

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Abstract

Communication represents the core of psychotherapy. The dynamic interaction between verbal and non-verbal components during patient-therapist exchanges, indeed, promotes the co-construction of meanings bringing about change within a process of reciprocal influence of participants. Our paper aims to illustrate the building of a new observational instrument of the therapeutic discourse, the Communicative Modes Analysis System in Psychotherapy (CMASP), and its reliability study from Mixed Methods framework. The CMASP is a single classification system analyzing the communication features within therapeutic exchanges. Born to overcome the limitations of traditional psychotherapy research which considers verbal and non-verbal dimensions of communication as in polar opposition, the CMASP building was based on the performative function derived from the Speech Act Theory. We used this function as a comprehensive theorization to interpret the communication components in psychotherapy as an integrated and interacting system. In fact, the instrument detects and classifies, at the overall and dimension level, the verbal and extra-linguistic components of psychotherapeutic communication implemented by the therapist and patients in the form of communicative modes. From the observational methodology framework, it was built an instrument able to record and analyze verbal, vocal and interruption behaviors by combining elements of qualitative and quantitative research approaches. The sample consisted of 30 psychotherapy audio recordings and verbatim transcripts of psychotherapy sessions (for a total of 8327 speaking turns). Four main dimensions were elaborated (Verbal Mode-Structural Form, Verbal Mode-Communicative Intent, Vocal Mode, and Interruption Mode) according to the agency role of communication components. The instrument is a field format combined with category systems. For each dimension, we built a category system that is exhaustive and mutually exclusive. From all dimensions, we have a total of 33 categories. Intra-and inter-judge reliability among four independent judges was computed on a total of 503 speaking turns coded through Cohen's κ and Krippendorff's canonical agreement coefficients (Cc), respectively. The CMASP showed high intra-and inter-judge agreement at the global, dimensional, and categorical level providing researchers and professionals with a single and flexible classification system, able to give multiple and concurrent information about the psychotherapy process.

Keywords: psychotherapeutic communication, verbal and non-verbal communication, performative language, observation system, mixed methods approach.

1 Introduction

Psychotherapy, as an asymmetric help-relationship focused on the patient, represents an experience of sharing and communication (Molina et al., 2013). During psychotherapy session, therapist and patient implement a specific type of communication in the form of therapeutic conversation, as mutual research and exploration through dialogue (Soares et al., 2010). Participants, through language, co-construct meanings that continually evolve promoting the change (Dagnino et al., 2012; Soares et al., 2010). Speech content (verbal dimension) and the different channels conveying it (non-verbal dimension) are the core ingredients of communicative exchanges (Ephratt, 2011). Nevertheless, Weick (1968) claims that linguistic content, in the form of verbal behaviors, constitutes only a small portion of human communication and most of it rests on extra-linguistic behaviors. In particular, voice and interruption behaviors (Mahl, 2014) are important indicators of the underlying psychological processes in communicative exchanges (Weick, 1968).

Historically, verbal and non-verbal components of psychotherapeutic communication have been considered and studied separately, as though they were independent and in polar opposition to each other, leading to the development of separated theorizations and investigations (Westland, 2015). Nevertheless, recent research underlines the need for an integrated communication approach since verbal and non-verbal behaviors are co-occurring and interrelated phenomena that show mutual influences (Jones and LeBaron, 2002). As Jones and LeBaron (2002) claim, "Mutual influence is especially complex and subtle in face-to-face situations because visible forms of communication occur simultaneously with one another and with vocal messages, and exchanges among persons can occur both sequentially and instantaneously" (p. 512). Therefore, the study of mutual influence represents a focal point in comprehending the interpersonal communication in psychotherapy, justifying the integration of verbal and non-verbal components.

The integrated system reflects the complexity of the therapeutic relationship in which verbal and non-verbal dimensions influence each other and interact regulating its co-construction, although they are separate components (Westland, 2015). Precisely, their interaction determines the building of *therapeutic discourse*, a specific type of conversation with an asymmetric structure in which the mutual influence of verbal and non-verbal communication affects the intersubjective processes implemented by both participants (Leahy, 2004; Westland, 2015).

Traditional psychotherapy research, focusing on either verbal or non-verbal communication through separate theories, impedes to bridge these dimensions and to deepen the processes underlying their reciprocal influence. To overcome such a limit, in agreement with the convergence process of natural and human science (Damasio et al., 2001), we derived the performative (or pragmatic) function of the Speech Act Theory (SAT; Searle, 2017) from the linguistic research to explain how verbal and non-verbal dimensions in psychotherapy influence each other despite being separate, underlining the need for an integrated system. Precisely, compared to scholars who based their investigations on this function to study specific aspects of psychotherapeutic communication (e.g., Talia et al., 2014; Tomicic et al., 2011; Valdés et al., 2010), we assumed the performative function as the global theory to describe the mutual influence of communication components within an interactive system, emphasizing the essential role of integration in analyzing the therapeutic actions.

In line with the performative function, language is a part of reality and not its reflection; it represents a tool to perform actions according to which *by saying something, we do something* that in psychotherapy is an aspect connected to change (Krause et al., 2006; Reyes et al., 2008). Such a function integrates the traditional concept of language as merely constative (or propositional) and overcomes the notion of communication as a mechanic process of encoding-

transmission-decoding of messages in which sender and receiver represent the ends of the process itself (Ellis and McClintock, 1990).

Within a process of mutual regulation turn-by-turn (*interactive communication*), which can be studied objectively through systematic observation, a speaker who expresses a speech performs an action that is something different from the act of saying *per se* and in which verbal and non-verbal messages interplay conveyed through different sensory systems. Verbal and non-verbal dimensions have an impact on the listener of communication who, in turn, decodes them and implements a communicative act that affects the first speaker (Jones and LeBaron, 2002; Sbisà, 2009).

During the psychotherapeutic encounter, the patient and therapist share and influence their reciprocal internal realities by transmitting information (contents) through recordable verbal behaviors. These verbal messages are expressed in the form of propositional acts (that is to refer and predicate) connected to both the speaker's communicative intent and the object of the therapeutic work (Arístegui et al., 2009; Valdés et al., 2010). Therefore, within a reciprocal coding and decoding process by both participants, each linguistic act has an impact on the recipient of communication determining, on the one hand, the mutual regulation and co-construction of meanings through conversational sequences and, on the other hand, changes in the internal representations of each participant (Arístegui et al., 2009).

However, each speech emitted is influenced by reciprocal prosodic modulations implemented by patient and therapist during the therapeutic interaction (*intersubjective approach to voice*; Campbell, 2007) and changes in the emotional state of each participant are affected by mutual and observable variations in communicative exchanges, according to the principles of universal recognition of emotions (Thompson and Balkwill, 2006; Tomicic et al., 2011, 2015b). Voice quality and its acoustic parameters (tone, intensity, duration, and timbre) influence the co-construction of meanings by transmitting psychological meanings and emotional messages apart from the verbal content, but verbal and vocal dimensions feel the effects of each other's action (Jones and LeBaron, 2002; Tomicic et al., 2011). The integration of vocal dimension to speech content is at the basis of regulatory behaviors as any experience of therapeutic interaction (Jones and LeBaron, 2002). Patient and therapist implement a mutual regulation process in the form of coordination sequences of vocal behaviors which are connected to change (Tomicic et al., 2011). Precisely, this process determines a reciprocal influence in the internal organization of both participants and transforms the individual internal functioning in a more complex state (Campbell, 2007; Tomicic et al., 2015b).

Communicative exchanges in psychotherapy, as every kind of human communication, are organized in a speaking turn alternation that patient and therapist can influence through reciprocal interruptions (Li et al., 2005). They represent linguistic acts supplied with intentionality (Wallis and Edmonds, 2017) that violate the turn-taking rules allowing the interrupter to encroach on speaker's communicative and elaborative space, supporting or hindering the co-construction of meanings and the communicative relationship (Li, 2001; Murata, 1994; Sacks et al., 2015). Therefore, the communicative intent of the interruption enriches the meaning and strength of the speech emitted by the interrupter through the mutual influence with the other verbal and non-verbal dimensions that constitute the speech itself (Jones and LeBaron, 2002). At the same time, within a mutual coding and decoding process, these non-verbal interactive behaviors (Mahl, 2014) impact on the speech of the one who is interrupted producing changes in the interactive dynamics between verbal and non-verbal components (Jones and LeBaron, 2002). Thus, interruptions orient the mutual regulation of participants through coordination sequences that influence the co-construction of meanings and therapeutic discourse (Van Eecke and Fernández, 2016).

According to this performative model of communication, "People not only utilize structural forms, but they also co-construct and negotiate meanings and rules in their ongoing interactions" (Jones and LeBaron, 2002, p. 504). Hence, the interplay of verbal and non-verbal dimensions increases the complexity of communicative exchanges in psychotherapy through mutual influence and regulation processes arising during patient-therapist interactions. The co-occurrence of these communication components models the co-construction of meanings and the unfolding of the therapeutic dialogue pointing out the need for integration.

These processes can be best studied through systematic observation because it represents the most appropriate method to capture the reality of communication exchanges and components in the natural context of the therapeutic setting (Anguera et al., 2018b). Therefore, we need observational instruments for recording and analyzing behaviors which can integrate verbal and non-verbal dimensions and fill the gap of the existing literature (such as the one we are about to introduce), since none of the present tools can keep the components of communication together.

Over the years, various research lines developed around the therapeutic intervention respectively focusing on psychotherapy manualization (e.g., Craske and Barlow, 2006), non-specific factors of change (e.g., Krause, 2005), and psychotherapy process and outcome (e.g., Wampold, 2005), while psychotherapeutic communication area has received less attention (Valdés et al., 2010). However, many scholars (e.g., Bucci, 2007; Buchholz and Reich, 2015; Lepper, 2009, 2015; Tomicic et al., 2011; Valdés et al., 2010; Weiste and Peräkylä, 2014) support the importance of studying the communicative patterns, especially in successful psychotherapeutic encounters, underlining their fundamental role in comprehending patient-therapist interactions.

During the decades, a wide variety of methods arose to study the intersubjective processes between patient and therapist, often involving problems in the field of methodology which increased the complexity and difficulty of studying communication in psychotherapy (Lepper, 2009, 2015). Nevertheless, systematic observation proved to be as the best way to analyze these communication processes.

Scholars in this field have developed various observational tools to analyze verbal and extra-linguistic components of communication in psychotherapy, but they are based on separate theorizations of the communicative dimensions and are not exempt from limitations. For example, the Comprehensive Psychotherapeutic Interventions Rating Scale (CPIRS), developed by Trijsburg et al. (2004), considers only the classification of interventions implemented by a therapist resulting from the analysis of common factors to the main psychotherapy orientations (client-centered, group psychodynamic, behavioral, cognitive and systemic orientations). The Client Behavior System (CBS), developed by Hill et al. (1992) as a revised version of the Client Verbal Response Category System (CVRCS; Hill et al., 1981), focuses in particular on patient's verbal behaviors, distinguishing eight nominal and mutually exclusive categories derived from different theoretical perspectives. Finally, the Therapeutic Activity Coding System (TACS-1.0), developed by Valdés et al. (2010), is a single system based on the notion of performative language which classifies only verbal communicative actions of patient and therapist by micro-analyzing each speaking turn during relevant episodes of the psychotherapy process.

As for voice and interruptions in psychotherapy, research is not as extensive (e.g., Buchholz and Reich, 2015; Oka et al., in press; Weiste and Peräkylä, 2014) as the research on verbal communication. Observational systems to classify voice in the psychotherapeutic context are not so many, while those to observe interruptions are not present, to our knowledge. With regard to the study of voice, for example, the Client Vocal Quality (CVQ) and Therapist Vocal Quality (TVQ) are two classification systems developed by Rice and Kerr (1986) to separately detect the client's vocal style in any given utterance and the therapist's vocal qualities affecting the

client's participation in the therapeutic work, apart from speech content. Finally, the Vocal Quality Pattern (VQP) was developed by Tomicic et al. (2015a) as a single coding system to classify patient and therapist's vocal quality, apart from the content of speech considering specific acoustic parameters of voice, during relevant episodes of the psychotherapy process. Such a system includes four vocal quality patterns (Reporting, Connected, Affirmative, Introspective, and Emotional) and three non-coding categories of vocal patterns, but it does not distinguish the positive and negative emotions of speech. Referring to the study of interruptions, systems for classifying this kind of behaviors are not traceable in psychotherapy framework. In psychotherapy research as well as in intersubjectivity and self-regulation models, distinct detection of positive and negative emotions and interruption behaviors is extremely important because they affect the change and psychotherapy process (Carver and Scheier, 1990; O'Reilly, 2008; Schutte, 2013; Stalikas and Fitzpatrick, 2008).

Although all these classification systems contribute to studying the communicative components of the therapeutic discourse, they do not consider the mutual influence of verbal and non-verbal dimensions and often focus on a specific participant or aspect of the communicative exchange. Moreover, although some classification systems are built as single systems to analyze speech of both therapist and patient, they do not go deep in the study of some aspects of communication (for example, the VQP includes only the Emotional category, not distinguishing between positive and negative emotions, or emotions with and without verbalizations). Furthermore, they often may segment a speaking turn to micro-analyze the communicative behaviors but not providing information at a more global level (e.g., TACS-1.0; Valdés et al., 2010). Finally, as we mentioned previously, there is a lack of systems for classifying interruptions in psychotherapy.

To overcome these limitations, we consider the need for a comprehensive classification system able to study and describe verbal and extra-linguistic behaviors implemented reciprocally by patient and therapist turn-by-turn during communicative exchanges. Furthermore, this system must be able to understand the mutual influence and evolution of such communicative behaviors during psychotherapy. For these reasons, inspired by an interdisciplinary perspective (Damasio et al., 2001) and starting from the performative function of language (Searle, 2017), we have developed -within an exploratory and descriptive design- the Communicative Modes Analysis System in Psychotherapy (CMASP), that we introduce in this paper.

The CMASP is born as an attempt to solve the problem of studying communication in psychotherapy according to a comprehensive theory. It has been developed to be a single and flexible observational system able to detect and classify (together or separately) both verbal and extra-linguistic components of communication expressed by the therapist and patient during the therapeutic exchange. Furthermore, the instrument allows identifying a communication profile for each participant and their interaction by integrating the communicative modes implemented. It provides valuable support in increasing knowledge about patient-therapist exchanges by detecting the communicative profiles able to build change during the psychotherapy process, and this is impossible using existing tools.

To describe patient-therapist communicative interactions and to analyze their mutual influence at the verbal and extra-linguistic level, the CMASP building is based on the performative function of language (Searle, 2017), which is connected to change in psychotherapy (Krause et al., 2006; Reyes et al., 2008), combined with Campbell's theorization (2007) and the principles of universal recognition of emotions (Thompson and Balkwill, 2006). Moreover, its constituent categories are derived from previous works adapted to the goals of our investigation (Goldberg, 1990; Hill, 1978; Krause et al., 2009; Li, 2001; Murata, 1994; Stiles, 1992; Tomicic et al., 2015a; Valdés et al., 2005, 2010) and from the building process of the classification system itself.

Specifically, as a single system, the CMASP permits a rigorous and systematized analysis of verbal and non-verbal communicative modes implemented by both patient and therapist in each speaking turn during the psychotherapeutic discourse. All this allows realizing comparative and sequential analyses which provide knowledge of the participants' mutual interaction process, the way communication evolves, and the communicative actions which affect the change during the psychotherapeutic process.

In recent years, a growing interest in integrating qualitative and quantitative methods has been developing in psychotherapy research. This integration provides a more comprehensive view of the patient-therapist interaction as it is supported by objective measures through a complementary perspective (Lutz and Hill, 2009), the search for mixed methods, which offers both rigor and flexibility in approaching the reality of the therapeutic relationship (Anguera and Hernández-Mendo, 2016; Anguera et al., 2018a).

The purpose of this paper is, firstly, to introduce the building of the CMASP by describing the methodology used to realize it and showing its ability in detecting and coding multiple aspects of communication in psychotherapy through its constituent dimensions and categories. Secondarily, we would present its first reliability psychometrics, for both inter-and intra-rater values, and its applications in the form of descriptive statistics of the subscales trend and an example of coding.

2 Material and Methods

The CMASP is founded on the systematic observation (Anguera et al., 2001) of verbal, vocal and interruption behaviors in patient-therapist communicative exchanges; this methodology, in turn, is based on a mixed methods approach (Plano Clark et al., 2015) integrating qualitative (QUAL) and quantitative (QUANT) data according to an exploratory sequential design (Fetters et al., 2013). Therefore, in line with a non-participant and indirect observation of natural language (Anguera et al., 2018b) within the ecological and not structured context of the therapeutic setting, patient and therapist's communicative behaviors were subjected to qualitative and quantitative analyses. In particular, verbal behaviors were converted into documentary material to analyze the content of each speech; to analyze vocal and interruptions behaviors, the acoustic characteristics of speech and the impact of these on the listener of the patient-therapist communicative exchanges were observed through a careful listening of therapeutic session recordings, apart from the content of messages. Although this methodology is intensive and implies working with a reduced number of participants, it permits the collection of a large number of records with high rigor (Arias-Pujol and Anguera, 2017; Castañer et al., 2016, 2017; García-Fariña et al., 2018; Rodríguez-Medina et al., 2018; Suárez et al., 2018) through the use of an observational instrument (the CMASP in this research).

Mixed methods research represents "a new movement, or discourse, or research paradigm (with a growing number of members) that has arisen in response to the currents of qualitative research and quantitative research" (Johnson et al., 2007, p. 113). The concepts and technicalities of quantification and data transformation are a recurrent theme in works written by eminent figures in the field of mixed methods research (Bazeley, 2009, 2018; Creswell et al., 2003; Onwuegbuzie et al., 2018; Sandelowski, 2001; Sandelowski et al., 2009; Schoonenboom et al., 2018). Several options are possible, and we select that one more suitable, considering the qualitative nature of data.

Quantification in observational methodology (in this study performed by using the CMASP) is particularly robust because, apart from simple frequency counts, contemplates other essential primary parameters, such as order and duration (Anguera et al., 2001; Bakeman, 1978; Bakeman

and Quera, 2011; Quera, 2018), thereby providing the researcher with the means to map the different components of a behavior as it occurs.

In observational methodology, primary parameters are frequency, order, and duration; they are structured in the form of levels that follow a *progressive order of inclusion* (Anguera and Blanco-Villaseñor, 2003) according to which the corresponding data progressively acquire greater power. In particular, frequency provides the least information, while order gives information on both frequency and sequence of behaviors; finally, duration supplies information on frequency and order by adding the number of time units for each occurrence of a behavior.

The specific consideration of the order parameter is crucial for detecting hidden structures through the quantitative analysis of relations among different codes in systematized observational datasets. Precisely, since the initial dataset –deriving from a notably rich qualitative component– contains information on the order, it can be analyzed using a wide range of quantitative techniques working with categorical data (e.g., lag sequential analysis, polar coordinate analysis, and detection of T-Patterns) and producing a set of quantitative results which are then qualitatively interpreted, bringing about a seamless integration. Therefore, such quantitative techniques aim at searching invisible structures and studying how these evolve.

According to Creswell and Plano Clark (2011), "there are three ways in which mixing occurs: merging or converging the two datasets by actually bringing them together, *connecting the two datasets by having one build on the other*, or embedding one data set within the other so that one type of data provides a supportive role for the other data set" (p. 7; the emphasis is our). Just based on the second option (*Connecting*) of integration of qualitative and quantitative elements, we perform this connection starting from systematic observation and transforming usual qualitative data of records in another dataset (here recorded by the CMASP). This last one allows including the record parameters of order and duration, being possible to obtain a matrix of data which are analyzable through quantitative techniques (Anguera et al., 2018b). Each session record will generate a matrix of codes (generally not regular) in the dataset, and each row will express the co-occurrences (corresponding to the various dimensions) carried out in each of the successive units.

The wide range of opportunities, available for processing data derived from observation, supports the idea that purely observational studies should be considered as mixed methods research studies (in which *connecting* represents an integration form implying to quantitize the qualitative records), even though they constitute a special case and do not follow traditional patterns (Anguera et al., 2017).

2.1 Design

Within the mixed methods perspective, the observational design (Blanco-Villaseñor et al., 2003) represents an empirical model of study organization related to the research aims and in line with the systematic observation used, which guides the decisions about data collection, organization, and analysis. The intersection of three dichotomous criteria (the unit of study, the continuity of recording, and the number of dimensions) provides eight different observational designs distributed in four quadrants (Figure 1).

The *unit of study* is divided into the Idiographic option (one unit corresponding to one participant or various participants with a stable bond) and Nomothetic option (different units). The *continuity of recording* is divided into the Punctual option (one session recorded) and Follow-up option (different sessions recorded over time). This last one, in turn, can be specified in inter-sessional (the recording obtained along different sessions) and intra-sessional (the recording obtained from the beginning to the end of a session). Finally, the *number of*

dimensions is divided into the Unidimensional or Multidimensional options, depending on the number of response levels considered and connected to the study aims. On several occasions, one or more dimensions can be developed in subdimensions (Blanco-Villaseñor et al., 2003).

Given the complexity of this study, the most suitable observational design, among those involving a low level of intervention (Chacón-Moscoso et al., 2014), was the Nomothetic/Follow-up/Multidimensional (N/F/M; Anguera and Izquierdo, 2006) included in the Quadrant IV of the systematic observation designs representation as it presents the most wealth of information and a higher complexity (Figure 1; Blanco-Villaseñor et al., 2003). Specifically, the study was *nomothetic* because it was focused on a plurality of units in which different patients, in interaction with the same therapist, were analyzed independently. Moreover, intra- and inter-session analyses were performed, reflecting the *follow-up* recordings. Finally, the evaluation of verbal, vocal and interruption behaviors corresponded to the observation of multiple channels of communication, typical of the *multidimensional* design. As it is possible to notice, there is a full correspondence between the observational design selected for this study and the structure of the CMASP.

Please, insert Figure 1 about here

2.2 Participants and Material

We developed the CMASP at the Dynamic Psychotherapy Service belonging to the Interdepartmental Laboratories for Research and Applied Psychology (LIRIPAC), a recognized research center of the University of Padua (Italy). The ethics committee of psychology faculty of the University of Padua approved the collection of the research material (informed consents, the audio recording of sessions, and confidentiality modes of procedures) which followed the ethical guidelines and procedures of the LIRIPAC, based on the Italian law about privacy and confidentiality (n. 196/03). We discussed the specific research practice and ethical procedure of this investigation with the Director of the Centre who approved them before the research began in 2016.

We followed the ethical standards for research outlined in the *Ethical Principles of Psychologists and Code of Conduct* (American Psychological Association, 2017). Therefore, we assured confidentiality by replacing the participants' personal information. As for listening to the audio recordings, we guaranteed confidentiality not providing personal data of the speakers to the trained coders who were in charge of their listening and transcription. We did not award incentives, and we emphasized voluntary participation. In line with the Declaration of Helsinki, we collected the informed consents of the therapist (verbal consent) and each patient (written consent), finalized to research aims, before realizing data collection and audio recording. In other words, we conducted the study after the end of the psychotherapy treatments.

For the CMASP development, we selected ten weekly individual psychotherapies among those of patients self-referred to the Dynamic Psychotherapy Service (DPS) of the University of Padua. Psychotherapy sessions collection was managed, in respect with patients' recruitment, according to the following criteria: (a) each patient agreed to participate and signed the informed consent; (b) all participants completed the entire psychotherapeutic assessment phase; (c) each patient, by a previous screening to the assessment, completed the depressive scale of the Beck Depression Inventory-II (BDI-II; Italian version, Ghisi et al., 2006) and the Symptom Checklist 90 Revised (SCL-90-R; Italian version, Sarno et al., 2011), obtaining scores greater than or equal to the 85th percentile and the *T*-score of 60, respectively; (d) the audio recording of

each session was complete. Moreover, patients met the following exclusion criteria: (a) absence of psychiatric diagnosis; (b) absence of ongoing pharmacological treatment for depression; (c) absence of previous psychological treatment.

The choice of selecting depressed patients was due to (a) the prevalence of this kind of patient who self-referred; (b) research reasons for obtaining a sample as uniform as possible; (c) the specific communicative features of this kind of patients which represent an expression of their symptoms. In fact, patients with depressive symptoms tend to speak more slowly and monotonously with less volume and voice modulation (Rottenberg and Gotlib, 2004), moreover, they tend to show high variation in prosody connected to the severity of symptoms (Yang et al., 2013).

Patients consisted of 10 university students (5 men and 5 women; age *M* = 26 years, *SD* = 3.91, Min = 22 years, Max = 32 years), residing in urban and rural areas of Italy; all of them were in care by the same female therapist (aged 39 years) with 13 years of expertise in the psychodynamic approach. By the administration of the BDI-II (Italian version, Ghisi et al., 2006) and SCL-90-R (Italian version, Sarno et al., 2011), all the patients showed depressive symptomatology. Specifically, they showed positive scores in the Total Score (*M* = 93.86, *SD* = 7.15, Min = 80, Max = 99), Somatic-Affective Area (*M* = 95.00, *SD* = 2.77, Min = 90, Max = 99), and Cognitive Area (*M* = 94.71, *SD* = 5.74, Min = 85, Max = 99) of the BDI-II. Moreover, they showed positive scores in the Global Severity Index (*M* = 61.14, *SD* = 8.15, Min = 53, Max = 75) and Depression Scale (*M* = 67.86, *SD* = 6.09, Min = 60, Max = 75) of the SCL-90-R. For each patient, the audio recordings (50 minutes each) and their verbatim transcriptions of the first three psychotherapeutic sessions were considered, for a total of 30 psychotherapy sessions. Afterward, we eliminated one session since it did not satisfy the inclusion criteria (the audio recording interrupted 10 minutes after the beginning) obtaining a sample of 29 psychotherapy sessions (29 audio recordings and 29 verbatim transcripts). Each transcription and the corresponding audio recording were divided into speaking turns.

To build the CMASP, we drew 3 cases of psychotherapy (each one consisted of 3 sessions) from the 10 cases considered, for a total of 9 sessions. Afterward, we randomly selected and observed audio recordings and their transcriptions of six sessions from the three cases of psychotherapy, for a total of 2095 speaking turns (1048 therapist speaking turns + 1047 patient speaking turns). These 3 cases of psychotherapy were excluded from further analyses, obtaining a definitive sample of 7 cases (4 men and 3 women) for a total of 6232 speaking turns (3121 therapist speaking turns + 3111 patient speaking turns). Finally, two sessions and their audio recordings, for a total of 503 speaking turns (252 therapist speaking turns + 251 patient speaking turns), were randomly selected among the remaining 20 sessions to perform data quality control.

2.2.1 Judges and Training Process

Three undergraduates and one Ph.D. students in psychology were recruited as judges and trained for the CMASP. Training consisted of 3-hour classes 3 times a week (for a total of 35 hours). During such a period, the judges learned the verbatim transcription norms as well as the usage of the Audacity® recording and editing software (version 2.2.1; Audacity Team, 2017) for observing and coding the audio recordings. Moreover, they studied the coding and training manual of the CMASP (Del Giacco et al., 2018) as well as they done exercises –rating 11 extracts of psychotherapy sessions audio recordings and transcripts for a total of 550 speaking turns coded (275 therapist speaking turns and 275 patient speaking turns)– and participated in discussion groups about encodings attributed.

2.3 Instruments

In systematic observation, recording instruments (e.g., to record and coding data) and observation instruments (that is purpose-designed *ad hoc* instruments) are differentiated (Anguera et al., 2018b).

2.3.1 Recording Instruments

Each 50-minute therapeutic session was recorded in the therapist's room through an MP3 audio recorder, positioned at an equal distance from the therapist and patient to reduce and control reactivity biases. Trained undergraduates realized a verbatim transcription for each audio recording of psychotherapy sessions to observe verbal behaviors during patient-therapist communicative exchanges. Moreover, they used the Audacity® recording and editing software (version 2.2.1; Audacity Team, 2017) to perform the extra-linguistic behaviors observation. Such software is a support instrument to listen to audio tracks which shows the sound wave and enables the observer to stop, segment, trace, and code the audio recording for applying the categories according to the coding manual. The dataset was built using Excel.

Data quality control analyses were performed through the Tool for the Observation of Social Interaction in Natural Environments (HOISAN, v. 1.6.3.3.4; Hernández-Mendo et al., 2012) and Sequential Data Interchange Standard-Generalized Sequential Querier computer program (SDIS-GSEQ, v. 4.1.3; Bakeman and Quera, 2011). Finally, descriptive statistics were performed through SPSS v. 23.0 Statistics statistical software.

2.4 Procedure

2.4.1 Development of the CMASP

The CMASP was elaborated within the observational methodology framework as an *ad hoc* indirect observation system of the therapeutic discourse (Anguera et al., 2018b) able to detect, record and classify verbal, vocal and interruption behaviors implemented turn-by-turn by patient and therapist, in the first phases of psychotherapy.

Based on this type of observation, the instrument building took place by implementing a recurrent process which oscillated between the observation of psychotherapeutic reality through audio recordings and transcripts and the theoretical framework that supporting the knowledge of that reality. To this end, the CMASP derived from the combination of two main instruments of the observational method, the field format and category systems, which were elaborated *ad hoc* for this specific observational study, exploiting the advantages of each to understand the reality of the therapeutic dialogue. Their combination rests on the theoretical framework of the observed reality and provides the instrument with the flexibility and dimensionality of the field format as well as with the consistency of the category systems (Anguera et al., 2007, 2018b).

In the CMASP building, the recording process –leading up to a systematized recording of verbal and extra-linguistic behaviors with maximum external control– was divided into two different phases: the exploratory or passive phase (pre-scientific) and the active phase (scientific; Anguera et al., 2007). These phases were realized using the audio recordings of six sessions randomly selected from the three cases of psychotherapy previously drew.

During the pre-scientific phase, firstly we defined the structural criteria of the observation tool starting from the theoretical framework of the performative function of verbal and non-verbal behaviors (Krause et al., 2006; Reyes et al., 2008; Searle, 2017), reciprocally performed by patient and therapist through speech to co-construct the communicative relationship and meanings. The criteria were deduced after an analysis of the characteristics of communication in psychotherapy from related scientific literature and the variables studied in other research paper. To this end, we have carried out a review of databases (Google Scholar, Scielo, Dialnet,

PsycINFO, PsycARTICLES, PsycCRITIQUES, and PubPsyc) using the following keywords: "verbal communication and performative language"; "non-verbal communication and performative language"; "psychotherapy and communication and performative language"; "psychotherapy and Speech Act Theory". We reviewed the abstracts and papers to select the studies related to the analysis of communication components according to the performative function of language (Goldberg, 1990; Hill, 1978; Krause et al., 2009; Li, 2001; Murata, 1994; Stiles, 1992; Tomicic et al., 2015a; Valdés et al., 2005, 2010). After discussing a preliminary list, we established core criteria and their definitions characterizing four dimensions: Verbal Mode-Structural Form (VeM-SF), Verbal Mode-Communicative Intent (VeM-CI), Vocal Mode (VoM) and Interruption Mode (IM). In particular, two dimensions were defined to analyze verbal behaviors: the VeM-SF, concerning the propositional content and corresponding to the structure by which speech expressed the communicative mode; the VeM-CI, concerning the performative content and corresponding to the communicative intent of the speaker's speech.

In this exploratory phase, three audio recordings were chosen at random from the six sessions so that they respectively corresponded to the first, second and third session of different individual psychotherapies. These audio recordings were listened through Audacity® software (version 2.2.1; Audacity Team, 2017) and verbatim transcribed. Such a step was fundamental for improving the training to observation, reducing biases (e.g., reactivity or expectation biases), as well as defining the norms for verbatim transcription, and elaborating a narrative recording (that is the first description of behaviors observed in the natural context with little constraints; Anguera et al., 2018b) at the root of the systematic observation process of communication.

To realize the narrative recording and observing verbal and extra-linguistic behaviors, we first unitized verbatim transcriptions and audio recordings in line with Krippendorff's procedures (2013); they were structured in text blocks and audio blocks, respectively. We defined a text block as the whole speech in the transcript included between the opening and closing sentences of each therapy session. The audio block corresponded to that of the transcription, and it was marked in the audio recording through Audacity® software (version 2.2.1; Audacity Team, 2017). Afterward, we organized the text and audio block in speaking turns according to patient and therapist's communicative exchanges. One speaking turn corresponded to the piece of speech emitted by one speaker from the moment he/she began to speak until the other speaker took the floor. Given the correspondence between the audio and text block, we marked the speaking turn in the audio recording through Audacity® software at the change of speaker (therapist or patient) who emitted the speech (Tomicic et al., 2011).

We assumed the speaking turn as the unit of analysis of communicative exchanges, and it was equivalent in both the transcription and the audio recording. To facilitate a microanalytical observation and to perform subsequent comparative analyses, each transcript and audio recording was divided into ten segments according to the procedure defined by Colli et al. (2014) for the Collaborative Interaction Scale-Revised (CIS-R). This choice permitted to obtain the same number of pairs of therapist-patient turns in all the segments as well as it allowed segmenting the CMASP in the same way as other tools for psychotherapy process analysis do (e.g., the CIS-R). Finally, speaking turns were sequentially numbered and named with T and P to differentiate the speech of therapist and patient, respectively.

After carrying out the unitizing process, we observed the audio recordings and transcripts of the psychotherapy sessions and elaborated a list of communicative behaviors for each dimension. Each dimension was exhaustively observed until we detected and listed all possible communicative behaviors that represented the core criterion.

During the scientific phase, we deduced a list of possible categories for each dimension, adapted to the study goals, from the previous works selected. With the list of communicative behaviors

for each dimension of the exploratory step, we performed a grouping process around concepts of the theoretical framework characterizing each provisional category. During this process, we improved the definitions and features of each category. Contemporarily, we performed a thematic grouping process of a series of communicative behaviors detecting new categories for each dimension. We defined provisional lists of categories systems that were discussed and modified until we achieved an agreement on each one.

As a result, we obtained a set of exhaustive and mutually exclusive (E/ME) categories of communicative behaviors for each criterion dimension (Anguera et al., 2018b), ensuring a good flexibility degree of the classification system. In other words, within the therapeutic discourse, each speech of patient and therapist could be evaluated according to the four dimensions of the instrument, while each communicative behavior identified could be assigned to one (exclusivity condition) and only one (mutual exclusivity condition) category within the category system of the corresponding dimension (Anguera and Izquierdo, 2006).

Once the categories were defined, an evidence check was performed on three new psychotherapeutic sessions –randomly selected among those of the three cases drew– to verify that new behaviors could not emerge, confirming the exhaustiveness of category systems after the instrument building. In this stage, the manual of the observational instrument (Del Giacco et al., 2018) was developed.

2.4.2 Coding Manual

A coding and training manual (Del Giacco et al., 2018) was elaborated to present the organization of the CMASP, the norms for the verbatim transcription, and the explanation of the Audacity® software usage (version 2.2.1; Audacity Team, 2017). Inside it, we described the categories of the CMASP dimensions. We illustrated each category definition through textual (and audio) examples and counter-examples, extrapolated from the observation of verbal and extra-linguistic psychotherapeutic communication, to identify and discriminate verbal, vocal and interruption modes, respectively. Furthermore, we showed and explained the procedure for unitizing the transcription and its audio recording as well as detecting the minimal unit of analysis for each dimension. For VeM-SF, VeM-CI, and VoM coding, we explained in the manual both the criteria for segmenting each speaking turn when a coder detected multiple categories for one dimension and the norms to be used to annotate these. Steps for coding verbal and extra-linguistic modes in the transcription and audio recording were defined. In the case of speaking turn segmentation due to VeM-SF, VeM-CI, and VoM coding, we described the rules for obtaining a global encoding. This aspect allows realizing comparative and sequential analyses as well as obtaining a systematized record in the form of a dataset (that is systems of codes structured as matrices) in which each speaking turn expressed multiple event codes.

Given the correspondence in the unitizing procedures of verbatim transcription and audio recording, we assumed the former as the coding sheet to note the observation and coding of verbal dimensions and extra-linguistic dimensions, respectively. Afterward, encodings –detected and transcribed for each dimension– were reported in a global coding sheet to obtain multiple event codes for each speaking turn.

2.4.3 Rigorous Data Quality Control of the CMASP

After the evidence check, control analyses were implemented through two quantitative statistical techniques to verify and ensure the data quality and the reliability of the instrument. The first one, the intra-observer reliability, was computed through Cohen's kappa coefficient (κ; Cohen, 1960) to verify the degree to which one observer's encodings of the same transcript and audio recording remained constant at two different times (in this study, we realized the second coding of the same transcription and audio recording after 1 month). The second one was the

inter-observer reliability to verify the agreement level of at least three observers' encodings of the same transcript and audio recording at the same point in time. It was computed, at the global and dimensional level, through Krippendorff's canonical agreement coefficient (Cc; Krippendorff, 1980) –an adaptation of Cohen's kappa– while, at the categorical level, as an average value of all the Cohen's kappa coefficients (κ; Cohen, 1960) calculated on different couples of observers (all the possible combinations of the four observers). These analyses were performed on the encodings of four judges –trained for the CMASP and its coding procedure (Anguera et al., 2018b; Losada and Manolov, 2015)– who observed 503 speaking turns, corresponding to the material of 2 psychotherapy sessions (1 verbatim transcription + 1 audio recording each one) randomly selected from the seven cases of the definitive sample. Although we observed only two sessions, the number of speaking turns was adequate to consider the material at a microanalytic level.

The four judges realized the coding independently, applying the CMASP on one selected psychotherapy session at a time. An observer chief was selected among the four judges to compute the intra-observer reliability.

Each reliability was computed for the CMASP, at the overall and dimensional level, through HOISAN v. 1.6.3.3.4 (Hernández-Mendo et al., 2012) and, at the categorical level, through SDIS-GSEQ v. 4.1.3 (Bakeman and Quera, 2011).

3 Results

Firstly, we present a general description of the CMASP. Afterward, we discuss the reliability study results and, finally, we report the CMASP applications to the sample (descriptive statistics of subscales trend and an example of coding).

3.1 General Presentation of the Classification System

The CMASP is an *ad hoc* classification system for the indirect observation of communication in psychotherapy, as a combination of a field format system for each criterion dimension and category systems, which analyzes (together or separately) patient and therapist's verbal, vocal and interruption behaviors turn-by-turn.

The instrument consists of four dimensions (Verbal Mode-Structural Form, Verbal Mode-Communicative Intent, Vocal Mode, Interruption Mode), two of them referred to two aspects of verbal behaviors and the others related to vocal and interruption behaviors of communication, respectively.

A total of 33 categories describes patient and therapist's verbal and extra-linguistic behaviors, respectively. Each dimension comprises a set of these categories in the form of exhaustive and mutually exclusive category system, as described below. Each speaking turn can present one and only one communicative mode for each dimension, but it can show co-occurrent communicative modes belonging to different dimensions.

Concerning the analysis of verbal modes, six categories constitute the VeM-SF dimension (Courtesies, Assertion, Question, Agreement, Denial, and Direction), while the VeM-CI dimension consists of eight categories (Acknowledging, Informing, Exploring, Deepening, Focusing, Temporizing, Attuning, and Resignifying). Concerning the VoM dimension, it consists of eight categories (Reporting, Connected, Declarative, Introspective, Emotional-Positive, Emotional-Negative, Pure Positive Emotion, and Pure Negative Emotion). The communicative intent of each category is associated with both a peculiar acoustic parameters combination and specific mode of the speaker's speech affecting the listener of communication, apart from the verbal content. Moreover, the "emotional" categories (Emotional-Positive,

Emotional-Negative, Pure Positive Emotion, and Pure Negative Emotion) are defined and described according to the principles of universal recognition of emotions (Thompson and Balkwill, 2006). Concerning the IM dimension, eleven categories are detected and specified in cooperative, intrusive, neutral and failed interruptions (Cooperative-Agreement, Cooperative-Assistance, Cooperative-Clarification, Cooperative-Exclamation, Intrusive-Disagreement, Intrusive-Floor taking, Intrusive-Competition, Intrusive-Topic change, Intrusive-Tangentialization, Neutral Interruption, Failed Interruption).

These categories are characterized by a description derived from the application of the observational method as well as from the previous works mentioned. Moreover, each definition of the Vocal Mode categories is supported by the description of the combination of acoustic parameters associated. Finally, a code for each category is established (for a detailed description, see "Appendix I. Description of the CMASP dimensions and categories").

3.2 Reliability Study of the CMASP

As shown in Table 1, results obtained at the overall, dimensional and categorical level of the CMASP are all greater than or equal to .81 in both psychotherapy session encodings, indicating an almost perfect level of the intra-judge reliability ($\kappa \geq .81$; Cohen, 1960). It is possible to notice that some categories are present only in a psychotherapy session but not in the other one (e.g., Courtesies, Cooperative-Assistance); however, their scores show an almost perfect agreement ($\kappa \geq .81$) in the session in which they were detected. Finally, some categories are not present since they do not appear in either session (e.g., Direction, Temporizing, Pure Negative Emotion). It does not represent a negative aspect of reliability, but on the contrary, it means that the judge shows a total agreement in not coding these categories in each session at two different times.

Please, insert Table 1 about here

As we mentioned above, the inter-judge reliability was computed, at the global and dimensional level, through Krippendorff's Cc and, at the categorical level, as an average value of all the Cohen's kappa coefficients derived from the four judge's encodings of the two psychotherapy sessions considered (220 and 283 speaking turns, respectively), for a total of 503 speaking turns coded. As shown in Table 2, results obtained at the overall and dimensional level of the CMASP are percentages greater than or equal to 81%, indicating an almost perfect level of the inter-judge reliability ($Cc \geq 81\%$; Krippendorff, 1980). At the categorical level, percentages show an inter-judge agreement level which varies between substantial ($61\% \leq k \leq 80\%$) and almost perfect ($k \geq 81\%$; Cohen, 1960). The categories detected by computing the intra-judge reliability also appear in one session, but not in the other one, by the inter-judge reliability computation. These categories present an agreement level varying between substantial ($61\% \leq k \leq 80\%$) and almost perfect ($k \geq 81\%$) in the session in which they were detected. Finally, the same categories not detected by computing the intra-judge reliability computation neither appear by the inter-judge reliability computation. Here again, this expresses a total agreement by the four judges in not coding these categories in either psychotherapy session.

Please, insert Table 2 about here

The CMASP reaches from high to very high intra-and inter-judge reliability for those categories expressing objective aspects of communication (the VeM-Structural Form categories) as well as for those categories based on the communicative intent (the categories of the VeM-Communicative Intent, Vocal Mode, and Interruption Mode dimension) which stimulate the subjectivity of the coder.

3.3 CMASP Applications: Descriptive Statistics of the Subscales Trend and an Example of Coding

As it is possible to see in Table 3, by the application of the CMASP on the 20 psychotherapy sessions (for a total of 6232 speaking turns), the VeM-Structural Form dimension shows the highest percentage of codes indicating high participation in communicative exchanges through speech contents with a clear structure. Precisely, speakers mainly expressed verbalizations in the form of statements (Assertion), recognition of the truth of the other's statements (Agreement) and requests for information (Question). A high percentage of communicative intents (VeM-CI) accompanied such structural forms, mainly characterized by asking for/providing contents (Exploring), taking the other's viewpoint (Acknowledging), deepening contents (Deepening), Resignifying, and Attuning (even if at a lesser percentage). It expresses the typical characteristics emerging in the initial phases of psychodynamic psychotherapy, although the CMASP brings added value since it is possible to integrate information corresponding to co-occurrences of behavior in all dimensions.

During sessions, a fairly high percentage of vocal modes (VoMs), spreading the underlying intentions apart from the verbal content, enriched speakers' speech. Compared to the expressed content, the voice of participants above all presented an elaborative speech in connection to oneself and oriented to the other (Connected); moreover, it transmitted positive/negative emotional states (Emotional-Positive and Emotional-Negative), positive non-verbal emotions (Pure Positive Emotions) and expressed certainty and conviction (Declarative), filling contents of new meanings.

Finally, the IM dimension shows the lowest percentage of codes compared to the 6232 speaking turns considered. As we mentioned, these modes represent an interactive aspect of communication as violations of the other participant's communicative space by an interrupter. Therefore, such a percentage do not indicate a negative aspect but, on the contrary, it expresses good self-regulation and coordination capacities of both participants during communicative exchanges. Generally, participants interrupted to show concurrence (Cooperative-Concurrence), neutrally take the floor (Neutral Interruption), or intrusively develop the topic of the current speaker (Intrusive-Floor taking). Moreover, they interrupted generating a battle to take the floor and express one's speech (Intrusive-Competition), or they could interrupt to understand the other's speech (Cooperative-Clarification).

The separate analysis of the CMASP categories aims to show the trend of each categorical system within the instrument. The integration of the communicative modes of the different dimensions occur at the interpretative level according to the values that these assume in line or not with the expected distributions; this makes it possible to determine different communication profiles that participants carry out. Assume that a speaker 1 shows the following communicative modes that are higher to the expected distribution: Assertion (VeM-SF), Exploring (VeM-CI), and Emotional-Positive (VoM). Moreover, assume that a speaker 2 shows the following communicative modes that are higher to the expected distribution: Assertion (VeM-SF), Exploring (VeM-CI), Emotional-Negative (VoM), and Intrusive-Floor taking (IM). It is possible to notice that, although both speakers use the same verbal communication modes, non-verbal modes convey speech in different ways, determining two distinct communication profiles. Speaker 1, indeed, refers to a certain state of things (Assertion) by reporting his/her inner

experience (Exploring) that is modulated by a positive emotional state (Emotional-Positive). Speaker 2, on the other hand, interrupts intrusively to take the floor (Intrusive-Floor taking IM) reporting his/her inner experience filled with negative emotions (Emotional-Negative).

Considering that each patient assumes an interactive role with his/her therapist and that for each one it is possible to detect the specific communicative modes, it results that we can have a detailed and "individualized" profile for the patient, therapist, and their unique interaction.

It is important to underline that some speaking turns were not coded due to the sensitivity of the classification system in coding certain communicative behaviors (e.g., vocal modes cannot be detected in a speech less than two seconds). Moreover, some categories showed a lower percentage than others, not because they were not present, but because the CMASP attributes a predominant communicative mode to a speaking turn for most of the dimensions (VeM-SF, VeM-CI, VoM). As we mentioned, this classification system micro-analyzes each speaking turn which can be segmented when changes occur in the communicative modes. Therefore, although these categories (e.g., Courtesies, Denial, Direction, Temporizing, Reporting) could occur in a segment at a micro level, the attribution of the predominant category decreased their probability of being coded at a speaking turn level. On the contrary, other categories (e.g., Pure Negative Emotion, Cooperative-Assistance, Cooperative-Exclamation, Intrusive-Topic change, Intrusive-Tangentialization) could present a lower percentage, although not being based on the predominance coding procedure, due to the specific characteristics of the communicative interactions with depressed patients.

Please, insert Table 3 about here

Hereunder, we present an example of the CMASP coding to show its capability to analyze the complexity of the psychotherapeutic exchange and giving information about the psychotherapy process (Table 4). Such a segment is extrapolated from the second session of psychodynamic psychotherapy, belonging to the final sample of seven cases, and it is related to communicative exchanges between a male patient with depressive symptomatology and the female therapist.

A trained coder, using both the audio recording and the verbatim transcript, realized the classification of patient and therapist's verbal and extra-linguistic communicative modes. Following the coding manual, he used the verbatim transcript to detect the different structural forms and communicative intents of verbal modes turn-by-turn. Moreover, he employed the transcript as support to note the extra-linguistic modes, emerging in each therapist and patient's speaking turn, detected by a careful listening of the audio recording. If two or more communicative modes of the same CMASP dimension occurred in a speaking turn, the coder assigned the predominant one according to the coding rules of the manual.

Please, insert Table 4 about here

Table 4 represents an illustration that shows the added value of the CMASP by integrating the information from several components. As it is possible to notice, in speaking turn no. 195 and no.197, the therapist asks for information (VeM-SF: Question) with the intent of deepening (VeM-CI: Deepening) "stimulated" by the patient's previous speech. The therapist expresses this through a positive emotion (VoM: Emotional-Positive) in speaking turn no. 195 since her

speech affects the listener as filled with curiosity. According to the coding procedures, the CMASP cannot code vocal modes in speaking turns less than 2 seconds unless they express emotional states. In speaking turn no. 195, therapist pauses her speech for a moment arousing uncertainty in the patient about her intention to continue to speak. Consequently, in speaking turn no. 196, the patient starts to speak without a real interruption (IM: Neutral interruption) to recognize the truth of the therapist's statement (VeM-SF: Agreement). He modulates his speech through a laugh (VoM: Emotional-Positive), synchronizing with the positive emotional state expressed by the therapist. In speaking turn no. 197, faced with such communication of agreement supported by positive emotion, the therapist intrusively interrupts the patient to regain the floor (IM: Intrusive-Floor taking) with the intent to continue her question about the previous speech (VeM-SF: Question; VeM-CI: Deepening). In speaking turn no. 198, the patient starts to speak in a coordinated way, referring to a certain state of things (VeM-SF: Assertion), to provide the information required by the therapist and giving new contents in the form of past experiences (VeM-CI: Exploring).

Such a speaking turn would be segmented due to the initial structural form of agreement ("Yes"). However, Assertion represents the predominant VeM-SF expressed by the patient for the rest of the speech and, for this reason, it can be attributed as the only code to the entire speaking turn. Finally, when the patient talks about his adolescence and the relationship with the sister, his speech affects the listener of the therapeutic exchange as filled with tenderness (Emotional-Positive).

The segment shows positive communicative exchanges between the therapist and the patient in which the two participants are emotionally synchronized. The previous patient's speech stimulates the emerging of a positive emotional state in the therapist which, at the same time, transmits to the patient the recognition of his experience and sustains the therapist herself in deepening the content referred. In turn, the patient emotionally and cognitively recognizes what the therapist expresses in the therapeutic relationship and transmits receptiveness to this last one. All this generates a climate of sharing and closeness which enables the therapist to reach the internal reality of the patient who, in turn, feels understood and supported in exploring his experience. In this case, the emotional climate helps the patient to get in touch with his emotions and legitimates him to attribute new meaning to his internal world through the sharing with the therapist. Instead, the disruptive interruption of the therapist sustains the patient in maintaining the emotional and relational balance, representing a typical problem of patients with depressive symptoms.

This illustration represents an example that shows the capacity of the CMASP to provide multiple and concurrent information about the intersubjective processes implemented by the therapist and patient during communicative exchanges. What emerges is a multi-level complexity in which the mutual regulation process occurs according to multiple and simultaneous directions (verbal–verbal, verbal–non-verbal, non-verbal–verbal, non-verbal–non-verbal). All this allows us to comprehend that these aspects of communication (content, voice, and interruptions) interweave during the co-construction of the therapeutic interaction, and they cannot be considered as independent elements. Naturally, the complexity and dynamicity of the psychotherapeutic exchange make difficult the complete knowledge of what occurs within the psychotherapy setting, but the CMASP provides a deeper understanding of the internal reality of each participant and their mutual regulation during the psychotherapy session. Therefore, as an integrated system, the CMASP enables the professionals and researchers to obtain consistent information about some fundamental components of communication and the way they affect the co-construction of meanings and orient the psychotherapy process.

4 Conclusions

The purposes of this study were, on the one hand, to introduce the building of the Communicative Modes Analysis System in Psychotherapy (CMASP) and its constituent dimensions and categories underlining its ability in detecting and coding multiple aspects of communication in psychotherapy simultaneously and, on the other hand, presenting its early reliability psychometrics for both inter-and intra-rater values. Inspired by the process of convergence of natural and human science, we developed the CMASP to overcome the limitations of the psychotherapy research –which investigates and theorizes the components of communication as in polar opposition– and trying to interpret some fundamental elements of therapeutic exchanges (verbal, vocal, and interruption behaviors) as an integrated and interactive system through a comprehensive theory, derived from the linguistic field.

As the CMASP is developed within the mixed methods framework by building a qualitative system that is quantitized (Sandelowski et al., 2009), it shows an increased incremental validity which ensures the qualitative/quantitative dimensions of functioning. The structure of the CMASP as a coding system applicable to both therapist and patient, as well as the possibility of detecting a predominant encoding at a speaking turn level, allow overcoming the limitations of many instruments and realizing comparative and sequential analysis of communicative modes implemented by both participants during the psychotherapy process, increasing the knowledge about their evolution. In particular, the instrument permits to classify verbal and non-verbal aspects connected to the effectiveness of psychotherapy and identifying the communication profiles that contribute to the process of change in patients.

Given its high reliability at the global, dimensional, and categorical level, the CMASP represents an effective instrument providing researchers and professionals with a single classification system, able to give multiple and concurrent information about patient-therapist communicative exchanges and their evolution during a psychotherapy session. Moreover, given its flexibility, this classification system allows focusing the knowledge on a specific area of communication. Precisely, the instrument can be used as a single system permitting to monitor simultaneously verbal and non-verbal changes bound up with psychotherapy, especially when it is applied together with other instruments (e.g., self-reports, clinical reports) to improve the incremental validity of the effectiveness measure. Alternatively, as the verbal and non-verbal dimensions of the CMASP can also be applied separately, the instrument can provide an objective measure of change –starting from the qualitative modes of relational exchange– in case of disorders (depression, ADHD, BPD) with marked non-verbal behaviors.

On the one hand, it could represent a useful instrument for researchers to increase the knowledge about what is occurring within the psychotherapy process reducing its complexity and, on the other hand, it could support the clinician in comprehending the patient functioning and improving the interventions tailored to each specific therapeutic interaction. Concerning to researchers, for example, the CMASP could allow them to deepen the knowledge about the interaction of communicative modes with other constructs (e.g., therapeutic alliance, attachment patterns), or different disorders (e.g., anxiety, eating disorders), or changes in patient's symptoms after and before the treatment. Concerning the clinicians, our final purpose would be to provide them with an instrument they will be able to internalize with practice, without the need for the physical support of audio recordings and verbatim transcripts, integrating it with their skills for sustaining the interaction with the patient and the psychotherapy process. For example, by recognizing the non-verbal communication underlining the expressed content (e.g., an elaborative speech, a positive emotional state, an interruption to clarify or to disrupt), the clinician may draw information about the coherence between the verbalized content and non-verbal modes associated, about the patient's resistance, or the internalized meaning he/she expresses behind and with words. In this way, the clinician can calibrate with more efficacy his/her intervention toward the patient.

Based on decades of studies on communication in the field of psychotherapeutic research, the CMASP attempts to contribute to understanding the complexity of this field by deepening the dynamic process of co-construction of meanings during patient-therapist communicative exchanges. The development of such a classification system showed the difficulty in coping with methodology problems in the communication study. These preliminary results come from the application of coding and counting approaches belonging to the tradition of research on communication, but we aim to integrate these as a part of a system in interaction in future studies (Peräkylä, 2004).

Firstly, since this paper is an early introduction of the classification system building and its psychometric properties, we aim to focus on its validation in future research. Moreover, convergent and discriminant validity studies are not available, but the CMASP segmentation procedure –elaborated through the CIS-R one– will allow performing correlational studies of validity between the communicative modes and the therapeutic alliance as well as internal correlation analyses among the categories, in future research. Finally, even though some categories of the CMASP show a low percentage, this is not a negative aspect as it may be due to the specificity of the sample (patients with depressive symptomatology), on the contrary, it provides information about the communicative characteristics of certain types of psychotherapeutic interactions, increasing the knowledge on this type of patients. Given the instrument flexibility, we aim to extend its application to other psychotherapy sessions, patients and, mostly, disorders. It is possible, for example, that a category like VoM-Declarative, with a low percentage in depressed patients, could characterize other types of disorders (e.g., narcissistic patients) predominantly.

Although the CMASP seems to solve the problem of understanding the communicative exchanges in psychotherapy through the pragmatic function of language as a global theory – increasing knowledge about what occurs during the interaction between the patient and therapist– the insubstantiality of certain distinctions between verbal and non-verbal aspects makes further studies necessary from an interdisciplinary standpoint. The CMASP development was based on the observation of psychotherapies conducted by just one therapist. At first, such a choice was made to reduce variability in the pilot research, but we know this decision could affect data because of the personal style of the therapist, or biases, or the individual communicative trends. For these reasons, in future research, it would be useful to consider the observation of more therapists to extend, improve and confirm the communicative modes analyzed. Furthermore, we observed only psychotherapies conducted by a female therapist. In future research, it would also be useful to observe psychotherapies conducted by a male therapist to verify if gender may affect the use of specific communicative modes (e.g., to examine if a female therapist may use more emotional communicative modes than a male therapist). We selected patients according to depressive symptomatology, but the purpose for future research is to extend the CMASP application to other types of disorders (e.g., anxiety, emotional dysregulation, obsessive-compulsive behaviors, eating disorders and so on) for creating a diagnostic classification system with established norms, or trends, for each diagnostic category. Finally, it would be useful to integrate the observation of video recording to extend the richness of communication in psychotherapy with other non-verbal components (e.g., facial expression or body movement observation).

5 Ethic Statement

We developed the CMASP at the Dynamic Psychotherapy Service belonging to the Interdepartmental Laboratories for Research and Applied Psychology (LIRIPAC), a recognized research center of the University of Padua (Italy). The ethics committee of psychology faculty of the University of Padua approved the collection of the research material (informed consents, the audio recording of sessions, and confidentiality modes of procedures) which followed the

ethical guidelines and procedures of the LIRIPAC, based on the Italian law about privacy and confidentiality (n. 196/03). We discussed the specific research practice and ethical procedure of this investigation with the Director of the Centre who approved them before the research began in 2016. We followed the ethical standards for research outlined in the Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 2017). Therefore, we assured confidentiality by replacing the participants' personal information. As for listening to the audio recordings, we guaranteed confidentiality not providing personal data of the speakers to the trained coders who were in charge of their listening and transcription. We did not award incentives, and we emphasized voluntary participation. In line with the Declaration of Helsinki, we collected the informed consents of the therapist (verbal consent) and each patient (written consent), finalized to research aims, before realizing data collection and audio recording. In other words, we conducted the study after the end of the psychotherapy treatments.

6 Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

7 Author Contributions

LDG documented, designed, drafted, and wrote the manuscript. Moreover, he trained and supervised the coders as well as he carried out statistical analyses. SS supervised the sample recruitment and the statistical analyses. MA supervised the method and procedure sessions as well as statistical analyses. SS and MA revised the manuscript for theoretical and intellectual content. Finally, all authors provided final approval of the version to be published.

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Table 1. Intra-judge reliability of the CMASP (*N* = 503 speaking turns)

CMASP	1st session (*n* = 220)	2nd session (*n* = 283)	*M*	*SD*
Overall	.97	.99	.98	.01
Verbal Mode-Structural Form (VeM-SF)	.97	.99	.98	.01
Courtesies (SF1)	1.00	TANC		
Assertion (SF2)	.93	.98	.96	.04
Question (SF3)	.94	.97	.96	.02
Agreement (SF4)	.93	.99	.96	.04
Denial (SF5)	TANC	1.00		
Direction (SF6)	TANC	TANC		
Verbal Mode-Communicative Intent (VeM-CI)	.93	.98	.96	.04
Acknowledging (CI1)	.99	.99	.99	.00
Informing (CI2)	.87	TANC		
Exploring (CI3)	.88	.93	.91	.04
Deepening (CI4)	.70	.95	.83	.18
Focusing (CI5)	.69	.95	.82	.18
Temporizing (CI6)	TANC	TANC		
Attuning (CI7)	1.00	1.00	1.00	.00
Resignifying (CI8)	1.00	.92	.96	.06
Vocal Mode (VoM)	.97	.94	.96	.02
Reporting (VM1)	1.00	TANC		
Connected (VM2)	.91	.93	.92	.01
Declarative (VM3)	.96	.91	.94	.04
Introspective (VM4)	.71	1.00	.86	.21
Emotional-Positive (VM5)	.91	.90	.91	.01
Emotional-Negative (VM6)	.95	.66	.81	.21
Pure Positive Emotion (VM7)	1.00	1.00	1.00	.00
Pure Negative Emotion (VM8)	TANC	TANC		
Interruption Mode (IM)	.91	.96	.94	.04
Cooperative-Concurrence (IM1)	.95	.97	.96	.01
Cooperative-Assistance (IM2)	TANC	1.00		
Cooperative-Clarification (IM3)	.83	.95	.89	.08
Cooperative-Exclamation (IM4)	TANC	1.00		
Intrusive-Disagreement (IM5)	1.00	1.00	1.00	.00
Intrusive-Floor taking (IM6)	TANC	.91		
Intrusive-Competition (IM7)	TANC	1.00		
Intrusive-Topic change (IM8)	TANC	TANC		
Intrusive-Tangentialization (IM9)	TANC	TANC		
Neutral interruption (IM10)	.94	.80	.87	.10
Failed Interruption (IM11)	TANC	.89		

Note. TANC, Total Agreement in the Not Coded Category; the intra-judge reliability was computed through Cohen's kappa (κ); κ: insufficient (lower than or equal to .60), substantial (between .61 and .80), satisfactory (greater than or equal to .81).

Table 2. Inter-judge reliability analysis of the CMASP (*N* = 503 speaking turns)

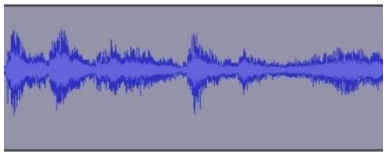
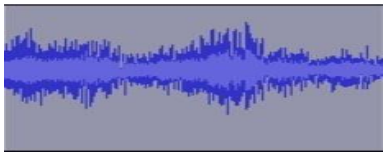
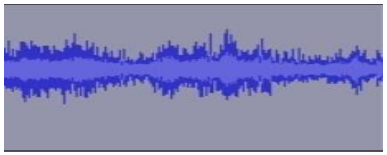
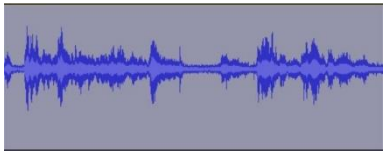
CMASP	1st session (*n* = 220)	2nd session (*n* = 283)	*M*	*SD*
Overall	93**	94**	93.50**	.71**
Verbal Mode-Structural Form (VeM-SF)	95**	95**	95.00**	.00*
Courtesies (SF1)	96*	TANC		
Assertion (SF2)	93*	92*	92.50*	.01*
Question (SF3)	95*	94*	94.50*	.01*
Agreement (SF4)	92*	95*	93.50*	.02*
Denial (SF5)	TANC	79*		
Direction (SF6)	TANC	TANC		
Verbal Mode-Communicative Intent (VeM-CI)	87**	92**	89.50**	3.54**
Acknowledging (CI1)	93*	97*	95.00*	.03*
Informing (CI2)	65*	TANC		
Exploring (CI3)	86*	86*	86.00*	.00*
Deepening (CI4)	75*	82*	78.50*	.05*
Focusing (CI5)	79*	82*	80.50*	.02*
Temporizing (CI6)	TANC	TANC		
Attuning (CI7)	70*	90*	80.00*	.14*
Resignifying (CI8)	100*	82*	91.00*	.13*
Vocal Mode (VoM)	93**	87**	90.00**	4.24**
Reporting (VM1)	100*	TANC		
Connected (VM2)	87*	89*	88.00*	.01*
Declarative (VM3)	75*	77*	76.00*	.01*
Introspective (VM4)	80*	100*	90.00*	.14*
Emotional-Positive (VM5)	83*	85*	84.00*	.01*
Emotional-Negative (VM6)	88*	61*	74.50*	.19*
Pure Positive Emotion (VM7)	100*	100*	100.00*	.00*
Pure Negative Emotion (VM8)	TANC	TANC		
Interruption Mode (IM)	81**	92**	86.50**	7.78**
Cooperative-Concurrence (IM1)	89*	96*	92.50*	.05*
Cooperative-Assistance (IM2)	TANC	100*		
Cooperative-Clarification (IM3)	100*	85*	92.50*	.11*
Cooperative-Exclamation (IM4)	TANC	100*		
Intrusive-Disagreement (IM5)	87*	83*	85.00*	.03*
Intrusive-Floor taking (IM6)	TANC	89*		
Intrusive-Competition (IM7)	TANC	100*		
Intrusive-Topic change (IM8)	TANC	TANC		
Intrusive-Tangentialization (IM9)	TANC	TANC		
Neutral interruption (IM10)	93*	81*	87.00*	.08*
Failed Interruption (IM11)	TANC	90*		

Notes. TANC, Total Agreement in the Not Coded Category; scores are expressed in percentage; * inter-judge reliability through Cohen's kappa (κ); ** inter-judge reliability through Krippendorff's canonical agreement coefficient (Cc); κ and Cc: insufficient (lower than or equal to 60%), substantial (between 61% and 80%), satisfactory (greater than or equal to 81%).

Table 3. Descriptive statistics of the CMASP communicative modes on the definitive sample (N=6232 speaking turns)

CMASP	***f***	**%**
Verbal Mode-Structural Form (VeM-SF)	5748	92.23
Courtesies (SF1)	52	.90
Assertion (SF2)	3299	57.39
Question (SF3)	752	13.08
Agreement (SF4)	1516	26.37
Denial (SF5)	80	1.39
Direction (SF6)	49	.85
Not coded	484	7.77
Verbal Mode-Communicative Intent (VeM-CI)	5171	82.97
Acknowledging (CI1)	1275	24.66
Informing (CI2)	196	3.79
Exploring (CI3)	2285	44.19
Deepening (CI4)	568	10.98
Focusing (CI5)	181	3.50
Temporizing (CI6)	26	.50
Attuning (CI7)	227	4.39
Resignifying (CI8)	413	7.99
Not coded	1061	17.03
Vocal Mode (VoM)	3832	61.49
Reporting (VM1)	10	.26
Connected (VM2)	1521	39.69
Declarative (VM3)	214	5.58
Introspective (VM4)	151	3.94
Emotional-Positive (VM5)	965	25.18
Emotional-Negative (VM6)	588	15.34
Pure Positive Emotion (VM7)	333	8.69
Pure Negative Emotion (VM8)	50	1.30
Not coded	2400	38.51
Interruption Mode (IM)	1144	18.36
Cooperative-Concurrence (IM1)	314	27.45
Cooperative-Assistance (IM2)	32	2.80
Cooperative-Clarification (IM3)	83	7.26
Cooperative-Exclamation (IM4)	18	1.57
Intrusive-Disagreement (IM5)	50	4.37
Intrusive-Floor taking (IM6)	185	16.17
Intrusive-Competition (IM7)	94	8.22
Intrusive-Topic change (IM8)	19	1.66
Intrusive-Tangentialization (IM9)	3	.26
Neutral interruption (IM10)	286	25.00
Failed Interruption (IM11)	60	5.24
Not coded	5088	81.64

Table 4. Illustration of the CMASP coding

Turn	Role	Transcription	Audacity® sound wave	VeM-SF	VeM-CI	VoM	IM
195	T	When did you sister…..(pause)// (<2”)		Question	Deepening	Emotional-Positive	/
196	P	//Yes, exactly (laugh)// (<2”)		Agreement	/	Emotional-Positive	Neutral interruption
197	T	//grow up? (<2”)		Question	Deepening	/	Intrusive-Floor taking
198	P	Yes, we are also 5 years apart, so when she got older, I started to get…. to be…to grow up me too and so to get impossible and all the rest of it.		Assertion	Exploring	Emotional-Positive	/

Notes. T, Therapist; P, Patient; VeM-SF, Verbal Mode-Structural Form; VeM-CI, Verbal Mode-Communicative Intent; VoM, Vocal Mode; IM, Interruption Mode. /, indicates the not-coded communicative behaviors. //, indicates the speaking turn interruption. (<2”), indicates speeches less than 2 seconds.

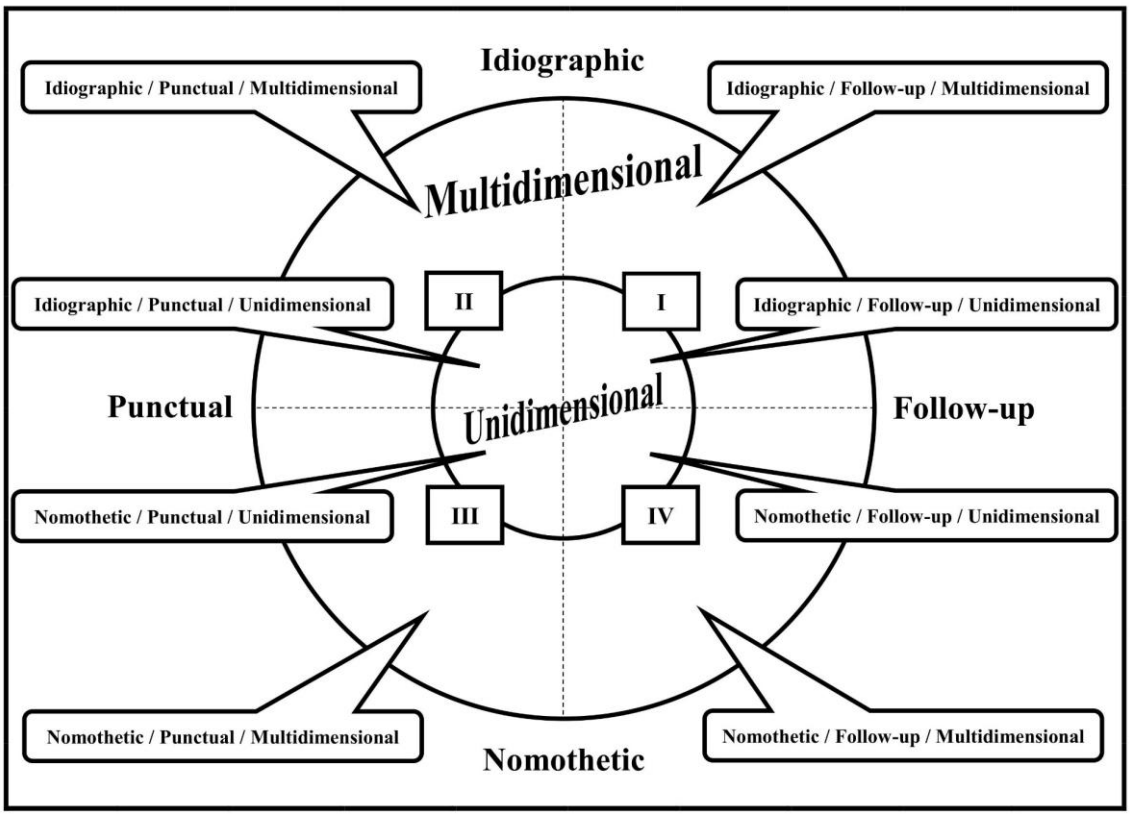


Figure 1. Representation of the observational designs (adapted from Blanco-Villaseñor et al., 2003, p.115). The intersection of the three dichotomous criteria (the unit of study, the continuity of recording, and the number of dimensions) brings about eight possible combinations, corresponding to the eight observational designs distributed in the four quadrants.

Supplementary Material

The Communicative Modes Analysis System in Psychotherapy from Mixed Methods framework: Introducing a New Observation System for Classifying Verbal and Nonverbal Communication

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Appendix I. Description of the CMASP dimensions and categories

Dimension	Categories	Description	Code
Verbal Mode-Structural Form (VeM-SF) It concerns the formal structure of the speech by which the speaker expresses the verbal mode (it corresponds to the propositional component of the speaker's speech).	Courtesies	Speaker's speech is in the form of terms expressing receptiveness to the communication according to social conventions (e.g., *"Good morning"*, *"Goodbye"*, *"Thank you"*, *"Your welcome"*).	SF1
	Assertion	Speaker's speech expresses something he/she considers true, or it refers to a specific state of the things (e.g., *"I feel empty"*, *"I can hardly concentrate"*).	SF2
	Question[1]	Speaker's speech is in the form of a request for specific information (e.g., "*Would you like to tell me the problem?"*, *"And this laziness hum for example in what…"*, *"So, you're not Italian…"*).	SF3
	Agreement	Speaker's speech recognizes the truth of the other's statement (e.g., *"Mm-hm"*, *"Right"*, *"Yes"*, *"Of course"*, *"Perhaps"*, *"All right"*).	SF4

	Denial	Speaker's speech refuses or rejects to recognize the truth of something said by the other (e.g., *"No"*, *"In no way"*, *"Absolutely no"*).	SF5
	Direction	Speaker's speech encourages the listener towards cognitive, emotional, or behavioral actions by guiding the other's behavior (e.g., *"Tell me what's wrong"*).	SF6
Verbal Mode-Communicative Intent (VeM-CI) It concerns the underlying intention of the speaker's speech (it corresponds to the performative component of communication).	Acknowledging	Speaker's communicative intent is to take the other's point about the experience of this last one, not presuming a specific knowledge of the other's experience but the speaker's one only (e.g., *"Mm-hm"*, *"Ok"*; *"Exactly"*, *"Mh"*, *"Right"*, *"Good morning"*, *"Goodbye"*, *"Thank you"*, *"Your welcome"*).	CI1
	Informing	Speaker's communicative intent is to supply (or request for), information about the here and now of psychotherapy in the form of data, facts, resources, theory, and assessment parameters. The information may be specifically related to the counseling process, therapist behavior, or arrangements (time, place, fee, and so on), (e.g., T: *"We'll meet once again, and then we'll take stock of the situation"*).	CI2
	Exploring	Speaker's communicative intent is to ask for information about knowledge, events, feelings, or about the causes of content or behavior (e.g., T: *"Would you like to tell the reason you are here?*"; T: *"How was your move to Padua?"*). Moreover, the speaker can provide the information required by the other focusing on knowledge, events or feelings (e.g., P: *"My parents are divorced"*), or he/she can give new contents in the form of stories as well as descriptions of past or present experiences (e.g., P: *"When I was a child, I liked to sleep with my parents"*). Finally, he/she can describe a feeling or emotional state (e.g., P: *"I've no energy and I always feel sad"*).	CI3
	Deepening	Speaker's communicative intent is to deepen the description, presentation, or discovery of some contents. He/she can realize it: a) verifying the truthfulness of an assertion made by the other which is questioned (e.g., P: *"I got so mad when he said to me those words, but you I'm fine on my own"* – T: *"So, don't you care of what the others say?"*); b) correcting the comprehension of the other (e.g., T: *"If I've understood correctly, it sounds like your problem is due to relationships"* – P: *"No, the problem is only with my mother"*); c) corroborating something stated (an opinion, facts, or new contents which are given or requested by the other) (e.g., T: *"So, you're one of the most aged"*	CI4

	– P: *"Yes, I was selected for my age"*); d) requesting for information about the content of the other's communication (e.g., P: *"I've called him many times but…nothing"* – T: *"In other words, hasn't he called you back anymore?"*).	
Focusing	Speaker's communicative intent is to direct the attention and efforts towards a specific topic of conversation. The speaker can realize it: a) introducing/addressing a topic (e.g., P: *"Well, I would like to start with the reasons"*); b) returning to a topic (e.g., T: *"So, getting back to what we were talking about"*); c) summarizing a content (e.g., T: *"Today we have spoken about many things"*); d) defining the limits of a given content (e.g., T: *"I'd like to focus on the relationship with your boyfriend"*).	CI5
Temporizing	Speaker's communicative intent is to assume a suspended position as regards the other's communication. This allows the speaker to get in touch with his/her thoughts and feelings or, on the contrary, to avoid facing the requests of the previous speech, momentarily (e.g., T: *"How did you feel?...How.."* – P: *"How I felt…*").	CI6
Attuning	Speaker's communicative intent is to understand or be understood by the other. He/she realizes this: a) verifying his/her comprehension with a careful examination of what he/she understood about the other's communication (e.g., T: *"Let me get this straight, you're telling me your mom doesn't know you smoke"*); b) telling the other how his/her actions or thoughts are being understood (e.g., T: *"In other words you think your mood is due to your parents' divorce"*); c) communicating to the other that his/her actions or thoughts are understood (e.g., T: *"Now I see, in other words, you're a sophomore in University"*). Moreover, to express attuning, the speaker can harmonize with the other showing an emotional connection to his/her reality (e.g., T: *"I imagine it's a difficult situation"*). Finally, the speaker can perform such a communicative intent by providing feedback: a) validating or discouraging the other's behaviors, meanings or feelings (e.g., T: *"Don't worry, go on"*); b) showing the other's affections or telling the emotional impact that the other had on the speaker (e.g., T: *"I'm making you angry"*).	CI7
Resignifying	Speaker's communicative intent is: a) to offer a new perspective on content (e.g., T: *"Maybe, there is also the fear of not being understood"*); b) to connect	CI8

		contents, to one another (e.g., P: *"I realize that I tend to get angry at my boyfriend like my father"*); c) to recognize or establish a psychological working model (e.g., T: *"You have a very rigid way of facing things*); d) to question a content (e.g., T: *"Well, but it seems you're afraid to understand you can do it on your own"*).	
Vocal Mode (VoM) It concerns the underlying intentions of the speaker's speech associated with both a peculiar acoustic parameters combination (tone, intensity, duration, and timbre) and a specific way the speaker's speech affects the listener of communicative exchange, apart from the verbal content. The "emotional" categories building follows the principle of universal emotions recognition.	Reporting	The listener has the impression of a detached speech emitted by the speaker like he/she is reporting, narrating, or exploring contents without any emotional involvement. Speaker's voice seems to attribute a detached quality to speech; moreover, an emotional disconnection and (or) emotional distance seems to characterize what is being said. A typical vocal parameter of this category is the repetitive prosody (concerning the tone) which, in turn, presents agogic accent (concerning the tone) and high variation in the dynamic (concerning the intensity). Finally, the speech is usually characterized by fluid pace (concerning the duration).	VM1
	Connected	The listener has the impression of an elaborative speech emitted by the speaker and oriented to the other. Speaker's voice seems to attribute to speech the quality of being connected and (or) attuned to him/herself as well as to the other, giving this last one space for intervening. The distinctive vocal parameters of this category are the anti-cadence, characterizing the end of the sentence expressed, and agogic accent (concerning the tone) with a soft-vocal attack (concerning the duration). Finally, the pace may present pauses and loss of fluidity (e.g., extensions, repetitions and so on), concerning the duration.	VM2
	Declarative	The listener has the impression of a secure, instructive, engaged or convinced talk emitted by the speaker. Speaker's voice seems to attribute the quality of certainty and conviction to the speech like he/she is instructing (or explaining to) the other, or like he/she seems very sure of (engaged in) what he/she is saying. The other has a little space for intervening. The peculiar vocal parameters of this category are the suspended or anti-cadence, characterizing the end of the sentence expressed, as well as agogic and (or) dynamic accent (concerning the tone) with a hard-vocal attack (concerning the intensity). The pace is usually fluid (concerning the duration) while the intensity may present an average volume increased (concerning the intensity).	VM3

Introspective	The listener has the impression of an introverted speech emitted by the speaker. Speaker's voice seems to attribute to speech the quality of being directed toward her/himself like he is connected with her/his internal world or in a dialog with her/himself. The distinctive vocal parameters of this category are an average volume decreased and dynamics decrescendo (concerning the intensity). Sometimes, this vocal mode may present a reduced speed and long pauses (concerning the duration).	VM4
Emotional-Positive	The listener has the impression of a positive-emotional speech emitted by the speaker. Speaker's voice seems to attribute positive affection and (or) positive emotional strength to speech. Such a vocal mode expresses the speaker's positive emotion (e.g., cheerfulness, happiness, sweetness, excitement, charm, understanding) modulating the verbal component of the speech (e.g., a laugh, shrill or sweet voice can accompany it) or, on the contrary, the effort to contain the emotion. A typical parameter of this category is the timbre, characterizing speech with variation in color and bright (Clear/Bright and Clear/Opaque), associated with changes in the sounding system (e.g., the shape that mouth assumes when someone smiles) expressing positive affection. Moreover, this category is often associated with a soft-vocal attack.	VM5
Emotional-Negative	The listener has the impression of a negative-emotional speech. Speaker's voice seems to attribute the quality of negative emotion and (or) negative emotional strength to speech. Such a vocal mode expresses the speaker's negative emotion (e.g., anger, sadness, fear, tension) modulating the verbal aspect of the speech (e.g., sobbing, broken voice, trembling voice, snort can accompany it) or, on the contrary, the effort to contain the emotion. A typical parameter of this category is the timbre, characterizing speech with variation in color and bright (Clear/Bright, Dark/Bright, and Dark/Opaque), associated with changes in the sounding system (e.g., the nasal congestion when someone cries, or the tension of the vocal cord when someone is nervous) expressing negative affection. Moreover, this category is often associated with an increased volume and (or) a not fluid pace. Finally, an increased volume and/or a no fluid pace is often associated with this category.	VM6
Pure Positive Emotion	Speaker's voice quality expresses a positive emotional state (e.g., doing a half-smile, laughing) without uttering any verbal content. The speaking turn is	VM7

		characterized only by vocalizations, due to changes in the sounding system, expressing a positive emotion and no utterance precedes or follows.	
	Pure Negative Emotion	Speaker's voice quality expresses a negative emotional state (e.g., crying, sighing) without uttering any verbal content. The speaking turn is characterized only by vocalizations, due to changes in the sounding system, expressing a negative emotion and no utterance precedes or follows.	VM8
Interruption Mode (IM) It concerns the interrupter's behaviors, implemented to take the floor (successfully or not), for supporting or hindering the communicative flow of the current speaker. These modes analyze the potential violations of the transition relevance place (TRP) by the interrupter, as well as the impact the interruption has on the other participant and the "reaction" that this last one implements towards the interrupter. Each mode is defined by the moment and way the interrupter takes the floor as well as by the purpose of his/her interruption.	Cooperative-Concurrence	This kind of interruption enables the interrupter to show agreement, validation, understanding, compliance, or support to the current speaker. Sometimes, the interruption also aims to extend or elaborate on the idea presented by the speaker.	IM1
	Cooperative-Assistance	This interruption mode enables the interrupter to sustain the current speaker by providing a word, phrase, sentence, or idea when the interrupter perceives the current speaker needs help.	IM2
	Cooperative-Clarification	The interrupter usually implements this kind of interruption mode with the intention to understand the message sent by the current speaker. The ultimate goal of the interruption is to make sure that the current speaker clarifies or explains a previously expressed piece of information the listener is dubious. In other words, when the listener is unclear about a piece of information the current speaker has just expressed, he/she interrupts this last one to request clarifications.	IM3
	Cooperative-Exclamation	This mode is implemented by the interrupter to show rapport as well as coparticipant involvement by expressing surprise to the previous utterance of the speaker.	IM4
	Intrusive-Disagreement	This mode occurs when the interrupter intervenes to show disagreement about what the speaker is saying and wants to correct or express his/her opinion immediately.	IM5
	Intrusive-Floor taking	This kind of interruption mode occurs when interrupter intervenes to develop the topic of the current speaker by taking over the floor from this last one. Generally, the interrupter does not intend to change the topic of the speaker, but only express his/her opinion, idea, thoughts, by taking the floor.	IM6
	Intrusive-Competition	This kind of interruption is characterized by a simultaneous speaking in which both participants interrupt each other to complete their speech, generating a real fight for the floor. In such an interruption, the one who first interrupted manages	IM7

	to take the floor and to prevent the other to end his/her speech.	
Intrusive-Topic change	It occurs when the interrupter intervenes to change the topic cutting the speech of the current speaker. The interrupter is somewhat more aggressive than in the floor-taking situation because he/she must accomplish the task of changing the topic.	IM8
Intrusive-Tangentialization	In this kind of interruption, the listener interrupts to summarize the information sent by the current speaker, reflecting his/her awareness. In other words, since the interrupter does not want to listen to the same information repeatedly, then he/she intervenes to summarize one or more pieces of the previously expressed information; in this way, he/she minimizes the message sent by the current speaker. Tangentialization prevents the interrupter from listening to an unwanted piece of information because either the information has been presented previously or the listener through other channels already knows the information.	IM9
Neutral interruption	This kind of interruption mode is neither cooperative nor intrusive (it does not violate the principles of turn change). It occurs when the speaker pauses or stops the talk, creating uncertainty about his/her intention to continue the speech and, consequently, the interrupter takes the floor and starts to talk. The central aspect of this kind of IM is that the speaker's speech appears incomplete due to his/her stop.	IM10
Failed Interruption	A simultaneous speech characterizes the present interruption mode, but there is no turns exchange as in the IM Intrusive-Competition. It occurs when the listener tries to intervene interrupting, but he/she stops before finishing the intruding speech since the current speaker continues talking. This last one ignores the interrupter and continues talking until he/she finishes. In other cases, the interrupter stops before completing his/her intruding speech since he/she understands the speaker wants to continue talking.	IM11

Note. [1]Question represents a complex category resulting from the combination of different aspects at the same time (social action, sequential position, and turn-design features; Stivers and Rossano, 2013). Different forms of questions were considered, indicating different degrees of disparities in the reciprocal participants' knowledge and conveying the relationship between them (Park, 2012).

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Study 2. The Action of Verbal and Non-verbal Communication in the Therapeutic Alliance Construction: A Mixed Methods Approach to Assess the Initial Interactions With Depressed Patients

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The Action of Verbal and Non-verbal Communication in the Therapeutic Alliance Construction: a Mixed Methods Approach to Assess the Initial Interactions with Depressed Patients

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Abstract

In psychodynamic psychotherapy, verbal (structures and intents) and non-verbal (voice and interruptions) dimensions of communication intertwine conveying information and determining the mutual regulation between therapist and patient through conversational sequences. The communication components interplay is the foundation for building the therapeutic alliance, a relational dimension that predicts a psychotherapy outcome and change, influenced by patient-therapist exchanges from the initial stages of their encounter. Depressed patients present specific verbal and non-verbal communication and show difficulties in developing and maintaining the therapeutic alliance. Based on the reviewed literature, the main aim of this study was to analyze how the action of specific communicative modes, implemented by the therapist and depressed patients, affect the reciprocal construction of the early therapeutic alliance by each participant during the mutual regulation processes. We employed a mixed methods approach based on a systematic observation of communication and alliance ruptures and repairs within the audio recordings and verbatim transcripts of 20 psychotherapy sessions (6,232 speaking turns) with seven depressed patients. The observational design was nomothetic, follow-up, and multidimensional. The choice of methodology is justified because we developed a comprehensive procedure that integrates an *ad hoc* indirect observation system (the Communicative Modes Analysis System in Psychotherapy), analyzing verbal and non-verbal communication, and an observational tool with deductive categories (the Collaborative Interactions Scale-Revised), assessing the therapeutic alliance construction. Once we confirmed the intra-and inter-observer reliability for the *ad hoc* system and the inter-rater reliability for the tool with deductive (or theoretical) categories, we performed descriptive statistics (to describe quantitatively communicative modes and alliance ruptures and repairs), lag sequential analysis (to detect stable patterns in communication-alliance interactions), and polar coordinate analysis (to identify significant relationships between communicative modes and alliance ruptures and repairs). Results confirm that the therapist's verbal (asking and exploring) and non-verbal (elaborating and cooperatively interrupting) modes and the depressed patients' verbal (asserting and exploring) and non-verbal (expressing emotions and cooperatively interrupting) modes determine stable patterns and significant associations with collaborative behaviors connected to the reciprocal construction of alliance by each participant. All this may provide professionals with useful information to increase the psychotherapy effectiveness with depressed patients.

Keywords: verbal and non-verbal communication, performative language, therapeutic alliance construction, mutual regulation, coordination processes, psychotherapy process, depression, mixed-methods approach.

1 Introduction

According to the psychodynamic approach, the therapeutic setting is the place where the therapist and patient establish a specific and asymmetric dialogue to explore and co-construct meanings through the intertwinement of verbal and non-verbal communication (Molina et al., 2013).

In psychotherapy research, these components of communication have always been considered independent (Westland, 2015) and studied separately (e.g., Ruiz-Sancho et al., 2013; Salvatore et al., 2010; Tomicic et al., 2011). However, in recent decades, scholars have been acknowledging the mutual influence of verbal and non-verbal dimensions as interrelated phenomena that can occur sequentially and simultaneously during communicative exchanges (Jones and LeBaron, 2002; Westland, 2015).

Assuming that people "co-construct and negotiate meanings in their ongoing interactions" (Jones and LeBaron, 2002, p. 504), we developed an integrative model of communication in psychotherapy (Del Giacco et al., 2019) to overcome the limitations of previous research, based on the notion of performative language from the Speech Act Theory (SAT; Searle, 2017). According to our model, verbal and non-verbal dimensions are linguistic acts expressing the intents of speakers who co-construct a dynamic relationship through a two-way process that oscillates between self-and mutual regulation and is connected to psychotherapy change (Martínez et al., 2014; Westland, 2015). Precisely, voice and interruptions, together with verbal communication, assume a fundamental role in co-constructing meanings as, from one hand, they provide information on the psychological messages and emotional states underlying the participants' behaviors and, on the other hand, they enrich the speech through their interaction even though they are separate components (Jones and LeBaron, 2002). Therefore, verbal communication (through the structural form and communicative intents of the content), voice (through prosodic modulations), and cooperative/competitive interruptions (through behaviors of involvement or dominance) interact by spreading information and determining the mutual regulation between participants in the form of conversational sequences, observable and recordable during communicative exchanges (Li, 2001; Tomicic et al., 2015b; Valdés et al., 2010; Westland, 2015).

Scholars (e.g., Adigwe and Okoro, 2016; Rocco et al., 2018) agree that the dynamic interaction of verbal and non-verbal components is the foundation for building a good therapeutic alliance (TA) (Martínez et al., 2014), a collaborative dimension whose quality depends on the mutual interaction between therapist and patient as well as their respective contributions (Lingiardi et al., 2016). Different authors have proven that the TA is an active agent in the process of change in psychotherapy (Colli and Lingiardi, 2009; Flückiger et al., 2018; Uckelstam et al., 2018; Vernmark et al., 2019). In particular, the TA in the initial stages of psychotherapy predicts a better outcome and change than the one measured in the middle of psychotherapy (Flückiger et al., 2018): it seems to be stronger in the first session with peaks during the third one (Ardito and Rabellino, 2011). This relational dimension consists of a continuous negotiation process between the patient's and therapist's needs and passes through rupture and repairs moments implemented by both participants that influence change (Locati et al., 2019; Safran et al., 2011). Precisely, ruptures manifest themselves through phases of lack of coordination characterized by non-cooperative behaviors between participants, while repairs through coordination phases identified by cooperative behaviors; both of them are expressed through verbal and non-verbal communication (Colli and Lingiardi, 2009; Colli et al., 2017; Morán et al., 2016). The

therapist's capacity to acknowledge and manage these moments could lead the therapy to positive changes or negative results (Eubanks et al., 2018). Therefore, the intersubjective negotiation in the therapeutic relationship involves a reciprocal regulation process that can itself be a mechanism of therapeutic change (Martínez et al., 2014; Safran and Muran, 2003, 2006): shifts in the collaboration and coordination levels can be considered fundamental keys of change (Colli and Lingiardi, 2009; Lingiardi et al., 2016).

Even though the literature acknowledges that the TA manifests itself through verbal and non-verbal expressions (Morán et al., 2016), studies mainly focused on verbal interactions (e.g., Krause et al., 2016), giving little emphasis to research on non-verbal components (e.g., Rocco et al., 2018) and their interactions with the former (e.g., Martínez et al., 2014) in the TA construction. Therefore, deepening the relationship between communication and TA by considering the verbal and non-verbal dimensions as an integrated and interacting system (Del Giacco et al., 2019) may overcome the limitations of previous research and provide professionals with useful information to increase knowledge about building such a collaborative relationship and the therapy effectiveness.

Scholars attempted to determine what communicative actions patient and therapist reciprocally implement during change episodes, specific in-session segments characterized by verbal and non-verbal coordination between participants and associated with the TA co-construction (Mellado et al., 2017), confirming the essential role of verbal structures and intentions, voice, and interruptions. For example, Krause et al. (2016) detected that *asserting* something and *asking* for information represented the verbal structures connected to the coordination processes at the basis of change episodes and the TA construction. Furthermore, they proved that the patient tended to assert more than the therapist, while the latter was inclined to question more than the former. Dagnino et al. (2012) showed that *exploring* one's own or the other's experience was the main verbal communicative intention underlying the coordination sequences connected to change episodes in the initial stages of psychotherapy. Moreover, during this phase, patients tended to explore more than the therapist. Tomicic et al. (2015b) emphasized that, regardless of verbal content, both an *elaborative* and *emotional vocal quality* were associated with coordination processes between participants. Furthermore, the therapist highlighted a more elaborative voice than the patient, while the latter expressed a greater emotionality than the former in terms of vocal emission. Finally, Oka et al. (in press) confirmed the mediating role of interruptions in the TA construction, although the results showed little effect of the cooperative versus the competitive type. However, the patient implemented more competitive interruptions than the therapist, while the latter tended to interrupt more cooperatively than the former. Since research on the relationship between interruptions and TA is scarce in psychotherapy, we relied on studies in the field of communication (e.g., Cafaro et al., 2016; Li et al., 2005) to assume that the *cooperative interruptions*[1] can also support coordination processes in the TA construction.

Patients, therefore, live the therapeutic relationship and the alliance construction by manifesting different experiential and behavioral modalities through verbal and non-verbal communication (Tomicic et al., 2009; Valdés and Krause, 2015), as an expression of their psychological processes and symptoms (Elvevåg et al., 2016; Valdés, 2014). Depressed patients, in particular, show difficulties in developing and maintaining the TA because of the specific verbal and non-verbal correlates that define their communicative behaviors (Balsters et al., 2012; Smirnova et al., 2018). According to the psychodynamic approach, these behaviors reflect the broad range of depressed patients' defensive, adaptation, and cognition styles deriving from the early cognitive-affective representations where anger and aggression are predominant (Levy and Wasserman,

[1] The constructs of the cited studies (*asking*, *asserting*, and *exploring* for the verbal dimension; *elaborating*, *expressing emotions*, and *cooperatively interrupting* for the non-verbal dimension) will correspond to the variables operationalized in the observational instrument that analyzes verbal and non-verbal communication in this research.

2009). This kind of patients has difficulty in accessing their inner world and emotions and in maintaining an adequate relational distance (Valdés, 2014; Valdés and Krause, 2015) which are manifested, on the one hand, through a rambling, repetitious, and vague speech (Bucci and Freedman, 1981), and from the other, through slow and monotonous speech with less volume and voice modulation (Rottenberg and Gotlib, 2004). These aspects vehicle the egocentric view of self, lack of empathy, interpersonal problems, and relational dependence typical of depressed patients who tend to exhibit hopelessness and passive-aggressive behaviors (Levy and Wasserman, 2009) through verbal and non-verbal communication that impact on the construction of a collaborative relationship.

As Hardy and Llewelyn (2015) point out, over the years, the study of the dynamics underlying the therapeutic relationship has involved the use of different methodologies (e.g., individual case studies, qualitative or quantitative analysis, naturalistic studies) and different analysis techniques (e.g., standardized methods, hermeneutics approaches, speech analysis) to provide empirical evidence aimed at explaining the role of factors that foster clinical change (e.g., Elliott et al., 2009; Eubanks et al., 2018; Smink et al., 2019). However, in recent decades, psychotherapy research has been moving toward an integrated approach of qualitative and quantitative methods, the mixed methods approach (Creswell and Plano Clark, 2017), to have a fuller picture of the ecological context of the therapeutic interaction supported by objective measures (Bartholomew and Lockard, 2018; Gelo et al., 2012). The systematic observation, deriving from this approach and considered being mixed methods in itself, represents the best technique and/or method to analyzed communication-alliance interactions since it offers both rigor and flexibility (Anguera et al., 2018), as proven by the broad range of observation tools created to analyze psychotherapy (e.g., Arias-Pujol and Anguera, 2017; Del Giacco et al., 2019) or other research areas (e.g., education, García-Fariña et al., 2018; sport, Tarragó et al., 2017). This scientific procedure, indeed, allows collecting qualitative data in observational records that are quantitized (Tashakkori and Teddlie, 1998) to obtain primary parameters (frequency, order, and duration) for carrying out quantitative analyses and identifying relationships between behaviors in systematized observational datasets (Anguera et al., 2017). In this study, we systematically observed the interactions between communication (as an integrated system of verbal and non-verbal dimensions) and the early TA construction in a group of depressed patients who show difficulties in developing and maintaining such a collaborative relationship because of their personality profile. For this purpose, we applied a peculiar and unconventional case of the observational method by developing a comprehensive procedure that integrates an *ad hoc* indirect observation system of verbal and non-verbal behaviors (the Communicative Modes Analysis System in Psychotherapy, CMASP; Del Giacco et al., 2018, 2019) and an observation instrument with deductive (or theoretical) categories for assessing the TA construction (the Collaborative Interactions Scale-Revised, CIS-R; Colli et al., 2014). Studies on such integration are limited and outdated (e.g., Bales and Cohen, 1979) and not focused on the interaction between communication and TA. In general, to our knowledge, no study has been conducted to observe systematically the micro-processes underlying the interaction of verbal (structures and intents) and non-verbal (voice and interruptions) communication with the TA construction in an Italian group of depressed patients by integrating a single observation system of communication with a tool based on deductive (or theoretical) categories for the alliance evaluation. We believe that this strategy may overcome the limitations of previous research since it allows observing the complexity of mutual regulation processes between the therapist and the depressed patient from different perspectives at the same time.

Understanding the verbal and non-verbal communicative dynamics that promote the early TA construction between therapist and patients with depressive symptomatology can provide professionals with useful information to carry out interventions aimed, on the one hand, at containing the dysfunctional behavior of these patients and, on the other hand, at increasing the effectiveness of the therapy by laying the foundations for change. According to the previous

theoretical background and the integration of two observational analysis techniques (lag sequential analysis and polar coordinate analysis) to obtain objective measures, this study aimed to analyze the action of specific communicative modes carried out by the therapist and depressed patients that foster the TA construction by each participant during the mutual regulation processes emerging in the initial stages of psychotherapy. Based on previous studies (Cafaro et al., 2016; Dagnino et al., 2012; Krause et al., 2016; Li et al., 2005; Oka et al., in press; Tomicic et al., 2015b), we expect that the therapist's verbal (*asking* and *exploring*) and non-verbal (*elaborating* and *cooperatively interrupting*) modes and the depressed patients' verbal (*asserting* and *exploring*) and non-verbal (*expressing emotions* and *cooperatively interrupting*) modes positively affect the reciprocal construction of the early TA, determining stable patterns and significant associations with collaborative behaviors by each participant.

2 Material and Methods

We applied the observational methodology to carry out a systematic observation of the interactions between communication (verbal and non-verbal behaviors) and TA ruptures and repairs during the mutual regulation processes between therapist and depressed patients, based on an exploratory sequential mixed methods approach (Fetters et al., 2013). Starting from an initial exploratory analysis of the 20 psychotherapy sessions whereby the *ad hoc* indirect observation system CMASP was built (Del Giacco et al., 2019), in this study, we performed an in-depth study of the observational methodology by exploring sequential patterns and statistically significant relationships between communication and TA through the CMASP and CIS-R use. As we mentioned, the observational methodology (considered being mixed methods in itself) is intensive and involves working with a small number of participants, but it allows us to collect a large number of registers with high rigor (e.g., Arias-Pujol and Anguera, 2017; García-Fariña et al., 2018) by mixing qualitative (QUAL) and quantitative (QUANT) data (Plano Clark et al., 2015). Such a methodology establishes three ordered stages (QUAL-QUANT-QUAL) that can be complemented based on different options. Creswell and Plano Clark (2017) recommended this integration according to the *connecting* strategy in addition to the *merging* and *embedding* strategies. We believe that the first strategy (*connecting* by building a dataset on the other) is the most optimal one in this study, given the qualitative nature of our data that reveals their transformative capacity to facilitate the integration. Therefore, starting from the QUAL stage, we obtained a descriptive qualitative dataset through the non-participant and indirect observation of the initial sessions of psychotherapy that was transformed in a systematized register by using the CMASP and CIS-R. The integration between the *ad hoc* indirect observation system and the tool with deductive or (theoretical) categories provides information about verbal, vocal, and interruption behaviors (the CMASP) and TA variations in the form of ruptures and repairs (the CIS-R). Each recorded session, indeed, provides a matrix of codes where each row represents the observed unit that expresses the co-occurrence of behaviors related to the dimensions of the two instruments. According to a quantification record process, the observational methodology provides the primary parameters of frequency, order, and duration organized based on a progressive order of inclusion (Anguera et al., 2017; Bakeman, 1978): from frequency (which supplies the least information) to duration (which adds time units besides the other two). Specifically, "the order parameter is crucial for detecting hidden structures through the quantitative analysis of relationships between different codes in systematized observational datasets" (Anguera et al., 2017, p. 6). This parameter (which also comprises frequency) is essential in the quantitizing process of our study because it is suitable for the defined purposes and the nature of data. Therefore, in the second stage (QUANT stage), after having tested and passed the data quality control, it is possible to perform analyses through different quantitative techniques for categorical data (e.g., lag sequential analysis, polar coordinate analysis, and detection of T-Patterns) obtaining quantitative results that can be

qualitatively interpreted in the third and last stage (QUAL stage) based on the research problem. All this leads to a perfect integration (Anguera et al., 2017).

2.1 Design

The observational methodology provides eight observational designs deriving from the intersection of three dichotomous criteria (Blanco-Villaseñor et al., 2003; Portell et al., 2015): the unit of study, distinguished in *idiographic* (a single participant or a natural group of participants with a stable bond such as the family) and *nomothetic* (a group of participants) studies; the continuity of recording, divided into single-session (*point*) and multiple-session (*follow-up*) studies; and the level of response (or dimensionality), differentiated between *unidimensional* (a single level) and *multidimensional* (multiple levels) designs. Each one is characterized by an increasing level of complexity that leads the study in terms of data collection, organization, and analysis (Anguera et al., 2018). We employed a Nomothetic/Follow-up/Multidimensional (N/F/M; Blanco-Villaseñor et al., 2003) design because it showed the highest level of complexity and information that fitted the complexity of this research. It was *nomothetic* because we studied different participants (therapist-patient interaction in seven psychotherapies), *follow-up* because we collected data over seven clinical cases of three successive sessions each (inter-sessional follow-up) and recorded each whole session without interruption (intra-sessional follow-up), and *multidimensional* because we observed communication (verbal, vocal, and interruption behaviors) and TA (ruptures and repairs) as an integrated system of different dimensions.

2.2 Participants and Materials

We selected the individual psychotherapies with 7 Italian university students (3 men and 4 women; age M = 26 years, SD = 3.91) self-referred to the Dynamic Psychotherapy Service (DPS) of the University of Padua (Italy) for problems of insecurity and difficulties in relationships and adaptation to the environment, low self-esteem, and deflected mood. They were treated by the same female therapist with 15 years of experience in brief focal psychotherapy, a form of once-a-week psychodynamic therapy lasting 15 sessions in which the therapist and patient develop the central focus of the treatment on a circumscribed problem area of discomfort for the latter during the initial assessment process (Rawson, 2018). Patients showed depressed symptomatology without psychiatric diagnosis detected through a previous screening to the assessment with the Beck Depression Inventory-II (BDI-II, Italian version; Ghisi et al., 2006) and the Symptom Checklist 90-Revised (SCL-90-R, Italian version; Sarno et al., 2011). The inclusion criteria for the patients' recruitment were (a) agreement to participate (signing the informed content to the research and tape recording), (b) initial assessment stage completed, (c) presence of depressive symptoms with scores $\geq 85^{th}$ percentile in all scales (Total Score, Somatic-Affective Area, and Cognitive Area) of the BDI-II and T scores ≥ 60 in the Global Severity Index and the Depression Scale of the SCL-90-R. The exclusion criteria were (a) psychiatric diagnosis, (b) ongoing pharmacological treatments for depression, (c) previous psychological treatments. Each case of psychotherapy comprised of 14 sessions of 50 minutes each. The sessions were entirely recorded by an MP3 recorder that was discreetly positioned in the therapy room at the same distance from the therapist and patient to minimize the reactivity bias. Based on the objectives of our research, we selected the audio recordings of the first three sessions of each clinical case (corresponding to the initial stage of psychotherapy) for a total of 21 sessions. Afterward, we eliminated one session audio recording because it was not complete (it stopped after 10 minutes), so the final sample was 20 sessions. Each audio recording was verbatim transcribed based on the norms defined by the CMASP manual (Del Giacco et al., 2018), which made it possible to produce a transcript that was also suitable for use with CIS-R. Therefore, we observed a total of 20 audio recordings and their corresponding transcripts equivalent to 6,232 speaking turns (3,121 therapist speaking turns + 3,111 patient speaking

turns). The Psychology Interdepartmental Ethics Committee of the University of Padua (Italy) evaluated and approved this investigation. The study has been conducted following the ethical guidelines and procedures of the Interdepartmental Laboratories for Research and Applied Psychology (L.I.RI.P.A.C.), to which the DPS belongs, based on Italian law no. 196/03 about privacy and confidentiality and the ethical standards for research established by the American Psychological Association (APA, 2017). All participants gave their written informed consent to participate in the research in conformity with the Declaration of Helsinki before making the audio recording and data collection; the study was conducted after the end of psychotherapies. Personal information of participants was replaced and not provided to the coders of audio recordings and transcripts to guarantee confidentiality.

2.3 Instruments

According to the systematic observation procedure (Anguera et al., 2018), recording instruments and the *ad hoc* observation instrument will be distinguished and described separately.

2.3.1 Recording Instruments

An MP3 audio recorder was used to record the psychotherapy sessions. We performed and used the verbatim transcription of each audio recording for indirect observation of verbal content. The Audacity® recording and editing software (v. 2.3.0; Audacity Team, 2018), a support instrument to listen, segment, trace, and code the audio tracks, was used to observe voice and interruption behaviors. We used Excel to report the codes of communication and TA.

2.3.2 Observational Instruments

2.3.2.1 The Communicative Modes Analysis System in Psychotherapy

The Communicative Modes Analysis System in Psychotherapy (CMASP; Del Giacco et al., 2018) is an *ad hoc* (Del Giacco et al., 2019) indirect observation system (Anguera et al., 2018) that determines the verbal, vocal, and interruption modes implemented by therapist and patient whereby they affect each other and co-construct meanings and psychological changes during communicative exchanges. It is a single classification system derived from the combination of two instruments of the observational method, the field format and category systems (Anguera et al., 2018), that is applied to audio recordings and verbatim transcripts and can be used at a global and dimension level (Table 1; for an in-depth description of the CMASP categories, see Supplementary Appendix I). The CMASP consists of four main dimensions based on the performative function of language (Searle, 2017): Verbal Mode-Structural Form (VeM-SF; six categories) and Verbal Mode-Communicative Intent (VeM-CI; eight categories) that evaluate the formal structure and communicative intent of verbal content, respectively; Vocal Mode (VoM; eight categories) that analyzes the communicative intent of the speaker's voice (regardless of verbal content) based on specific combinations of acoustic parameters impacting on the listener; Interruption Mode (IM; eleven categories) that identifies the interrupter's intent to support or hinder the communicative flow of the current speaker. This classification system comprises 33 categories derived from the observational method application and previous studies (Goldberg, 1990; Hill, 1978; Krause et al., 2009; Li, 2001; Murata, 1994; Stiles, 1992; Tomicic et al., 2015a; Valdés et al., 2005, 2010). Each dimension consists of a set of exhaustive and mutually exclusive (E/ME; Anguera et al., 2018) categories. The coder divides the audio recording and its verbatim transcript into speaking turns, each of which represents the unit of analysis. The verbatim transcript is the support to identify the structural form and communicative intent of verbal communication, while the audio recording to detect vocal and interruption modes through careful listening. The coder attributes to each speaking turn one and only one predominant communicative mode of each dimension.

Please, insert Table 1 about here

2.3.2.2 The Collaborative Interactions Scale-Revised

The Collaborative Interactions Scale-Revised (CIS-R; Colli et al., 2014) is the revised version of the CIS (Colli and Lingiardi, 2009), an observational tool with deductive or (theoretical) categories to assess ruptures and repairs of the TA through a micro-analytic evaluation of the therapeutic process (Table 2; for an in-depth description of the CIS-R categories, see Supplementary Appendix II). In this study, we used the CIS-R for a categorical coding by detecting the therapist's and depressed patients' ruptures and repairs at a speaking turn level. This transcript-based method, derived from Safran and Muran's (2003) theorization of TA, comprises two main scales for a total of 31 mutually exclusive and deductive categories: the Collaborative Interactions Scale-Therapist (CIS-T), to evaluate the therapist's positive and negative contributions to the therapeutic relationship, and the Collaborative Interactions Scale-Patient (CIS-P), to evaluate the patient's rupture and collaborative processes. The CIS-T is composed of the Form of the Therapist Intervention (TI) and the object of the therapist intervention. This last one is further divided into three subscales: Direct Collaborative Interventions (DCIs; four categories) and Indirect Collaborative Interventions (ICIs; three categories), the therapist's collaborative contributions directly or not directly related to the relationship with the patient or certain aspects of the therapy; and Rupture Interventions (RIs; five categories), the therapist's actions that negatively impact on the psychotherapy process. The CIS-P is composed of four subscales: Direct Collaborative Processes (DCPs; three categories) and Indirect Collaborative Processes (ICPs; three categories), the collaborative contributions to the TA construction directly or not directly related to the therapy and the therapeutic relationship; Direct Ruptures Markers (DRMs; four categories) and Indirect Rupture Markers (IRMs; five categories), the patient's ruptures of the TA directly or not directly related to the therapy. First, to evaluate the TA within a psychotherapy session, the transcript is divided into speaking turns, each of which represents the unit of analysis. Afterward, the speaking turns are grouped into narrative units, each one comprising a therapist-patient exchange. Finally, these are grouped into ten homogeneous segments composing the psychotherapy session transcript.

As a first step, the coder performs a categorical coding by detecting ruptures or repairs that the therapist and patient implemented at a speaking turn level and attributing one and only one predominant category of the CIS-T or CIS-P, respectively. Afterward, it is possible to evaluate the TA trend within a psychotherapy session by applying a 4-point Likert scale to each coded category based on its frequency in all speaking turns of a segment. Moreover, it is possible to determine the intensity levels of ruptures and repairs for the therapist and patient, respectively, using a 3-point Likert scale at the global level. Finally, it is possible to obtain a TA global score for each psychotherapy session as a final result of the interactive processes between the ruptures and repairs of the therapist and patient.

Please, insert Table 2 about here

2.3.3 Data Analysis Software

We used SPSS v. 23.0 statistics to perform the inter-rater reliability for the CIS-R and descriptive statistics. Moreover, the Generalized Sequential Querier computer program (GSEQ, v. 5.1.23; Bakeman and Quera, 2011) was used to carry out the intra-observer reliability for the CMASP and lag sequential analysis. Finally, we used the Tool for the Observation of Social

Interaction in Natural Environments (HOISAN, v. 1.6.3.3.4; Hernández-Mendo et al., 2012) to perform the inter-observer reliability for the CMASP and the polar coordinate analysis.

2.4 Procedure

As we mentioned previously, the 20 psychotherapy sessions audio recordings were first verbatim transcribed according to the norms defined by the CMASP manual (Del Giacco et al., 2018). Then, we segmented each audio recording and its transcript to divide them into meaningful units (Anguera et al., 2018) based on the study purposes. To do this, we applied Krippendorff's unitizing procedure that consists in performing "systematic distinctions within a continuum of otherwise undifferentiated text –documents, images, voices, videos, websites, and other observables– that are of interest to an analysis, omitting irrelevant matter but keeping together what cannot be divided without loss of meaning" (Krippendorff, 2018, p. 88). As a result of such a procedure, we defined the division of audio recordings and their transcripts into speaking turns, and each one represented our unit of analysis. A turn comprised any speech of a speaker that ended when the other participant took the floor, marked in the audio trace through Audacity® software (v. 2.3.0; Audacity Team, 2018). The CIS-R unitizing procedure produced the same segmentation as the CMASP; for this reason, we could use the speaking turn as the unit of analysis for both instruments and the transcript as single support to report their codes.

The 20 sessions (corresponding to the first three sessions, the initial stage, of each psychotherapy) were analyzed to data collection and analysis. Firstly, we administered the CMASP to each psychotherapy session: VeM-SFs and VeM-CIs were coded by analyzing each speaking turn in the transcript, while VoMs and IMs by carefully listening to speaking turn in the audio recording through the Audacity software (v. 2.3.0; Audacity Team, 2018). Following the coding manual (Del Giacco et al., 2018), we applied one dimension of the CMASP at a time to each speaking turn of the therapist and patients and attributed one and only one predominant communicative mode of the dimension considered. A systematized register of verbal (structures and intents), vocal, and interruption modes resulted in the form of a matrix of codes where each speaking turn expressed multiple event codes (Bakeman, 1978). Then, the CIS-R was administered to verbatim transcripts based on its coding procedures (Colli et al., 2014). Each speaking turn of the therapist and patients were analyzed by CIS-T and CIS-P, respectively, assigning one and only one predominant code for the ruptures or repairs used. A systematized register of ruptures and repairs resulted in the form of a catalog where each speaking turn expressed event-based sequential data (Bakeman, 1978).

Before quantification of data resulting from indirect observation, Krippendorff (2018) recommends a rigorous data quality control for preventing possible biases from skewing results (Anguera et al., 2018). According to this, we performed the two main quantitative techniques for evaluating the reliability of data: intra-observer reliability, the agreement level of an observer in coding of the same psychotherapy session at two different times; and the inter-observer reliability, the agreement level of at least three observers in coding of the same psychotherapy session at the same time. Precisely, we tested the intra-and inter-observer reliability for the CMASP and the inter-rater reliability for the CIS-R. Following the procedure, we carried out the reliability check on 10% of all the sessions coded corresponding to two psychotherapy sessions in our study. Therefore, four trained judges independently coded such two sessions (equivalent to 503 speaking turns) drawn at random from the sample. The intra-observer reliability was calculated as the average Cohen's κ (Cohen, 1960) through GSEQ (v. 5.1.23; Bakeman and Quera, 2011). The inter-observer reliability was computed using Krippendorff's canonical agreement coefficient (Cc; Krippendorff, 1980) through HOISAN (v. 1.6.3.3.4; Hernández-Mendo et al., 2012). Finally, the inter-rater reliability of the tool with deductive (or theoretical) categories, equivalent to the inter-observer agreement of observational methodology, was calculated as the average of Cohen's κ through SPSS v. 23 statistics. The CMASP showed an average κ of 0.98 and an average Cc of 94%, confirming almost perfect

intra-and inter-observer reliability for $\kappa \geq 0.81$ (Cohen, 1960) and $Cc \geq 81\%$ (Krippendorff, 1980), respectively. The CIS-R presented an average κ of 0.79, indicating good inter-rater reliability ($0.61 \leq \kappa < 0.81$; Cohen, 1960).

After passing the data quality control, we performed a re-categorization process by grouping the data of some basic categories of CMASP into macro-categories with more global characteristics and appropriate to the extent of the constructs under investigation. Based on the reviewed studies on communication-TA interaction, indeed, the concepts of explorative intent (Dagnino et al., 2012), emotional voice (Tomicic et al., 2015b) and cooperative/intrusive interruptions (Oka et al., in press) analyzed the reality of therapeutic exchanges at a more global level. Such re-categorization was possible since, in observational methodology, the everyday life of behavioral flow can be observed at different levels of *granularity* (Schegloff, 2000) "as a function of the possibilities ranging from most molar to most molecular" (Anguera, 2020, p. 52), characterized by greater interconnectedness (the molar level) or greater objectivity (the molecular level; Anguera, 2017), respectively. For this reason, we grouped the communicative intents Exploring (CI3), Deepening (CI4), and Focusing (CI5) within the macro-category Global Exploration (CIGE). The vocal categories Emotional-Positive (VM5) and Emotional-Negative (VM6), related to the expression of positive and negative emotions during verbalizations, were grouped in the macro-category Emotional (VME). Finally, we included all categories of interruptions related to cooperative and intrusive behaviors within the macro-categories Cooperative (IMC) and Intrusive (IMI), respectively.

Based on mixed methods approach, data resulting from CMASP and CIS-R application could then be merged in a comprehensive dataset (Fetters et al., 2013) since (a) their coding procedures fitted each other, (b) a predominant code could be attributed at a speaking turn level in both instruments, (c) the resulting data were categorical for both CMASP and CIS-R. Therefore, we obtained a systematized register of communicative modes and alliance ruptures and repairs in the form of a matrix of codes where each speaking turn of the therapist and depressed patients expressed multiple and co-occurrent event codes (Bakeman, 1978) of CMASP and CIS-R together (Figure 1).

Please, insert Figure 1 about here

2.5 Statistical Analyses

We used three statistical analysis techniques to answer the study aim: descriptive statistics, lag sequential analysis, and polar coordinate analysis..

2.5.1 Descriptive Statistics

We performed a macro-analytical analysis through SPSS Statistics (v. 23.0) to describe quantitatively the communicative modes and the alliance ruptures and repairs used by the therapist and depressed patients during communicative exchanges.

2.5.2 Lag Sequential Analysis

We performed lag sequential analysis (Bakeman and Quera, 2011) to identify the stable behavioral patterns connected to the TA construction deriving from the action of specific communicative modes in the initial stages of psychotherapy. This statistical technique is used in observational methodology to analyze the sequences of behaviors detected through direct and/or indirect observation, being effective in different research areas (e.g., psychotherapy, Venturella et al., 2019; education, Santoyo et al., 2017; sport, Tarragó et al., 2017). The first step consists

in establishing the *criterion behaviors* (i.e., the trigger behaviors of any possible pattern detected) and applying time lags defined for the study. Afterward, the observed probabilities of co-occurring *conditional behaviors* (i.e., associated behaviors) are calculated for each lag by using the binomial test; this test produces adjusted residuals (Z; Allison and Liker, 1982) that express the strength of association between significantly associated categories (i.e., between the criterion behaviors and the associated conditional behaviors). The significance level was fixed at $p < 0.05$. Adjusted residuals can be prospective or retrospective depending on whether the lags are analyzed in a forward (lag+1, lag+2, etc.) or backward (lag-1, lag-2, etc.) direction from the criterion behavior. They are statistically significant for values > 1.96 (excitatory association) and < -1.96 (inhibitory association) between criterion and conditional behaviors. To evaluate the strength of patterns, Bakeman and Gottman (1987) defined interpretative rules which conventionally establish that (a) a pattern ends when two or more consecutive lags present non-significant behaviors, (b) a pattern weakens when two successive lags exhibit multiple behaviors (the first one is the last interpretable, called Max Lag).

Based on the study aim and the reviewed literature, we selected the following communicative modes as criterion behaviors: Question (SF3), Global Exploration (CIGE), Connected (VM2), and Cooperative (IMC) for the therapist; Assertion (SF2), Global Exploration (CIGE), Emotional (VME), and Cooperative (IMC) for depressed patients. The alliance ruptures and repairs were assumed as conditional behaviors. We considered only the CMASP and CIS-R categories with a frequency > 5 since behavioral occurrences less than this value are not significant in observational methodology practice (Sackett, 1980). Ten retrospective lags (from lag-10 to lag-1) and ten prospective lags (from the lag+1 to lag +10) were analyzed to investigate the associations between communication and the TA construction. This choice, while not involving the exploration of all possible lags, allows us to adequately catch the complexity of the research object, making progress compared to the usual practice of analyzing only five lags (Sackett, 1980). The GSEQ program (v. 5.1.23; Bakeman and Quera, 2011) was used on multiple and concurrent event data.

2.5.3 Polar Coordinate Analysis

Polar coordinate analysis (Anguera, 1997; Sackett, 1980) identified the statistically significant relationships between one *focal behavior* (i.e., the behavior of interest) and *conditional behaviors* (i.e., associated behaviors). Such a quantitative analytical technique, widely used in different research areas (e.g., psychotherapy, Arias-Pujol and Anguera, 2017; education, Camerino et al., 2019; sport, Tarragó et al., 2017; interventions at the workplace, Portell et al., 2019), complements lag sequential analysis by reducing the volume of conditional probability data obtained by the latter through the Z_{sum} algorithm ($Z_{sum} = \frac{\sum Z}{\sqrt{n}}$, where Z is the standard value of each adjusted residual deriving from the sequential analysis and n is the number of lags; Cochran, 1954). This statistic reflects the association between the focal behavior and each conditional behavior, and it is calculated for both prospective lags (Z_{sum} P, lags +1 to +5 or more) and retrospective lags (Z_{sum} R, lags -1 to -5 or less) (Sackett, 1980, 1987), obtaining a prospective and retrospective value for each conditional behavior. Anguera (1997) modified the original technique by introducing the concept of *genuine retrospectivity* to optimize the procedure. A vectorial depiction of the interrelationships between the focal behavior and each conditional behavior supports the analysis. Z_{sum} P and Z_{sum} R values are reported along the X and Y axes, respectively, defining the four quadrants of the vectors map where the focal behavior is the zero point (Figure 2). These values and the interaction between the positive or negative signs of Z_{sum} R and Z_{sum} P define the quadrant where each vector is located and its respective length (or radius) and angle (Sackett, 1980). The radius ($\text{Radius} = \sqrt{(Z_{sum}\ P)^2 + (Z_{sum}\ R)^2}$) expresses the strength of the relationship and is statistically significant for values > 1.96 with $p < 0.05$. The angle ($\varphi = \frac{\text{arcsine } Z_{sum\ R}}{\text{radius}}$) shows the nature of the

relationship and is adjusted as follows, depending on the quadrant where the vector is located: quadrant I ($0° < \varphi < 90°$) = φ; quadrant II ($90° < \varphi < 180°$) = $180° - \varphi$; quadrant III ($180° < \varphi < 270°$) = $180° + \varphi$; quadrant IV ($270° < \varphi < 360°$) = $360° - \varphi$.

Please, insert Figure 2 about here

Each quadrant indicates the (inhibitory vs. excitatory) association between the focal and conditional behaviors: Quadrant I (+ +) expresses a mutually excitatory relationship between the focal and conditional behaviors (i.e., they activate each other); in Quadrant II (- +), the focal behavior inhibits and, at the same time, is activated by the conditional behavior; Quadrant III (- -) shows a mutually inhibitory relationship between the focal and conditional behaviors (i.e., they inhibit each other); and in Quadrant IV (+ -), the focal behavior activates and, at the same time, is inhibited by the conditional behavior.

We chose the communicative modes related to the study aim as focal behaviors [Question (SF3), Global Exploration (CIGE), Connected (VM2), and Cooperative (IMC) for the therapist; Assertion (SF2), Global Exploration (CIGE), Emotional (VME), and Cooperative (IMC) for depressed patients] and alliance ruptures and repairs as conditional behaviors. The polar coordinate analysis and vectorial maps were performed through the HOISAN program (v. 1.6.3.3.4; Hernández-Mendo et al., 2012) considering ten lags (from lag-10 to lag-1) for Z_{sum} R and ten lags (from lag+1 to lag+10) for Z_{sum} P.

3 Results

Firstly, we introduce the general results of the descriptive statistics obtained by applying the CMASP and CIS-R. Then, we focus on the lag sequential analysis and polar coordinate analysis of the specific communicative modes implemented by the therapist and depressed patients that affect the reciprocal construction of a positive TA by each participant during the mutual regulation processes in the initial stages of psychotherapy.

3.1 Main Communicative Modes Used by the Therapist and Depressed Patients

As shown in Table 3, from the comparison between the communicative modes used by the therapist and depressed patients during the initial stage of psychotherapy, the predominant structural forms characterizing their speech are Assertion (SF2), especially depressed patients, and Agreement (SF4) and Question (SF3), especially the therapist. The participants' verbal content mainly expresses communicative intents of Acknowledging (CI1), by taking the other's point of view about his/her experience (especially the therapist), and Global Exploration (CIGE) of his/her own or other's inner world (especially depressed patients). The vocal modes modulating the verbal content are mainly Connected (VM2), whereby participants perform elaborative processes in connection with themselves and oriented to the other (especially depressed patients), and Emotional (VME), whereby participants modulate speech through their emotional states (especially depressed patients). Finally, during communicative exchanges, participants mainly implement Cooperative (IMC) interruption modes (especially the therapist).

Please, insert Table 3 about here

3.2 Alliance Ruptures and Repairs Used by the Therapist and Depressed Patients

In Table 4, it is possible to notice that, during the initial phase of the psychotherapy, the therapist above all contributes to the TA through Indirect Collaborative Interventions (ICI) focused on Facts (ICI1), Affects (ICI2), and Meaning (ICI3) related to the depressed patients' experiences and through Direct Collaborative Interventions (DCI) related to the Task/Goals of the therapy (DCI1). Moreover, the therapist tends to break the TA through Rupture Interventions (RI), mainly characterized by suddenly changing the topic in the form of Linguistic Avoidance (RI1) and by Hostility (RI3). On the other hand, depressed patients contribute to TA construction through Indirect Collaborative Processes (ICP) related to Facts (ICP1) and Affects (ICP2). Moreover, they implement Indirect Rupture Markers (IRM) characterized by Linguistic Avoidance (IRM1) and Affective Avoidance (IRM2).

Please, insert Table 4 about here

3.3 Behavioral Patterns of Depressed Patients and Therapist in the Therapeutic Alliance Construction

Tables 5–8 show the sequential patterns of behaviors related to the TA construction in the therapist and depressed patients considering the communicative modes detected from the reviewed literature as criterion behaviors. We have structured the results into sections organized by the different four verbal and non-verbal dimensions that have been analyzed for the therapist and depressed patients. We will discuss only the behavioral patterns with Z values greater than 1.96 ($p < 0.05$), representing the excitatory relationships between criterion and conditional behaviors.

3.3.1 Verbal Mode-Structural Form

In Table 5, during the TA construction, the therapist's use of questions (SF3T) is followed and preceded with high probability by stable behavioral patterns of depressed patients expressed through collaborative processes related to the events experienced (ICP1). Moreover, such patients symmetrically activate collaborative processes on feelings and/or thoughts related to their experiences (ICP2), and only prospectively, collaborative processes focused on the therapy goals (DCP1).

Example:

Patient: This time, I decided not to stay home but to go out. (ICP1)
Therapist: How did you spend the day? (SF3T)
Patient: I went to the mountains with my girlfriend. (ICP1)

On the other hand, in the presence of assertions from depressed patients (SF2P), the therapist implements a stable and symmetrical pattern of collaborative interventions focused on patients' experiences (ICI1), supplemented by interventions on their feelings and/or thoughts (ICI2) in the lags immediately before and after the criterion behavior.

Example:

Therapist: Can you tell me something about your father? (ICI1)
Patient: My daddy grew up in Sicily, and when he speaks, he always gesticulates. . . (SF2P)
Therapist: For example,…. when does it happen? (ICI1)

Please, insert Table 5 about here

3.3.2 Verbal Mode-Communicative Intent

In Table 6, the communicative intent Global Exploration (CIGET) –exploring, deepening, and focusing– of the therapist is followed and preceded with high probability by a stable pattern of depressed patients' collaborative processes related to the events experienced (ICP1); in prospective lags, such patients also activate collaborative processes on feelings and/or thoughts related to their experiences (ICP2).

Example:

Patient: We're trying to sell the house because it's too expensive for one person. (ICP1)
Therapist: There's also, um, a difficult choice, that is, this choice to leave the house… (CIGET)
Patient: No, no, um, we're not... my sister and I aren't going to be there anymore.. (ICP1)

Symmetrically, when depressed patients express the speech with the communicative intent Global Exploration (CIGEP), the therapist is likely to activate a stable pattern that precedes and follows such a criterion behavior, characterized by collaborative interventions on patients' experiences (ICI1) that are supplemented by interventions on their feelings and/or thoughts (ICI2).

Example:

Therapist: How's your relationship now? (ICI1)
Patient: Well, there's… um… respect between my boyfriend and me. (CIGEP)
Therapist: Do you still work together? (ICI1)

Please, insert Table 6 about here

3.3.3 Vocal Mode

In Table 7, in the presence of the therapist's elaborative vocal mode (VM2T), depressed patients retrospectively activate (up to lag -3) collaborative processes on feelings and/or thoughts related to their experiences (ICP2), and prospectively (up to lag +3), collaborative processes related to the events experienced (ICP1), the therapy goals (DCP1), and their feelings toward the therapist and therapy (DCP2).

Example (from the audio track coding):

Patient: I feel happy when I listen to music! (ICP2)
Therapist: Last time, you were telling me that this is your biggest passion… (pause). (VM2T)
Patient: Yes! ... I started late because I was 18 years old, but it was love at first sight. (ICP1)

On the other hand, in the presence of the depressed patients' emotional vocal mode (VMEP), the therapist symmetrically activates (up to lags -3 and +3) a pattern of collaborative interventions on feelings and/or thoughts of patients linked to their experiences (ICI2), integrated by collaborative interventions related to the patients' feelings toward the therapy and the therapist (DCI2).

Example (from the audio track coding):

Therapist: Wouldn't you have liked. . . to. . . to go to Japan too? (ICI2)
Patient: I think I'd be a different person with that kind of experience in Japan! (VMEP)
Therapist: Uhm! And what kind of person do you think you would be? (ICI2)

Please, insert Table 7 about here

3.3.4 Interruption Mode

In Table 8, the therapist's use of cooperative interruption modes (IMCT) is followed and preceded with high probability by a stable pattern of depressed patients' collaborative processes related to the events experienced (ICP1). Moreover, such patients symmetrically activate collaborative processes on feelings and/or thoughts related to their experiences (ICP2), and only prospectively, collaborative processes related to the deep meaning of the events experienced (ICP3).

Example (from the audio track coding):

Patient: I wasn't feeling well, so I made up an… an… ex-// (interrupted) (ICP1)
Therapist: //an excuse? (IMCT)
Patient: Yes… but in the end, I told her the truth, and she was very understanding of me. (ICP1)

On the other hand, in the presence of a cooperative interruption mode by depressed patients (IMCP), the therapist activates with high probability a stable pattern of collaborative interventions focused on the therapy goals and tasks (DCI1). Such behaviors of the therapist are symmetrically integrated by interventions related to the meaning of patients' experiences (ICI3), retrospectively, by interventions on feelings and/or thoughts of patients about their experiences (ICI2), and prospectively, by interventions on patients' feelings toward the therapy and/or the therapist (DCI2).

Example (from the audio track coding):

Therapist: If you agree, I'd like to meet you for a few sessions to discuss your problems together and see how to proceed// (interrupted) (DCI1)
Patient: //What do you mean "how to proceed"? (IMCP)
Therapist: What to advise you on, how to deal with your difficulties… (DCI1)

Please, insert Table 8 about here

3.4 Relationships Between the Communicative Modes and the Construction of the Therapeutic Alliance

Figures 3–6 show the results of the polar coordinate analysis for the therapist and depressed patients. Each vectorial map represents the statistically significant associations between each communicative mode (i.e., each focal behavior detected from the reviewed literature) and the behaviors connected to the TA construction (i.e., conditional behaviors). The statistically significant association is shown both qualitatively (Quadrant I, II, III, or IV) and quantitatively (vector length). Again, the results are structured into sections based on the four verbal and non-verbal dimensions that we analyzed for the therapist and depressed patients. We will discuss the vectors with a length greater than 1.96 ($p < 0.05$), expressing the relationships between focal behaviors' and conditional behaviors' activations in each vectorial map.

3.4.1 Relationships Between the Structural Forms Used by the Therapist and Depressed Patients and the Reciprocal Construction of the Therapeutic Alliance

Figure 3A shows the mutual activation (Quadrant I) between the structural form Question (SF3T) used by the therapist and the collaborative processes of depressed patients related to the TA construction. In particular, we can notice a strong mutual excitatory relationship with collaborative processes related to the events experienced by such patients (ICP1). Moreover, although with less intensity, there are mutually excitatory relationships with depressed patients'

collaborative processes on feelings and/or thoughts related to their experiences (ICP2) and on the therapy goals and tasks (DCP1). On the other hand, in Figure 3B, there is a mutual activation (Quadrant I) between the structural form Assertion (SF2P) used by depressed patients and the therapist's collaborative interventions on the events experienced by this last one (ICI1).

Please, insert Figure 3 about here

3.4.2 Relationships Between the Communicative Intents Used by the Therapist and Depressed Patients and the Reciprocal Construction of the Therapeutic Alliance

In Figure 4A, there is above all a mutually excitatory relationship (Quadrant I) between the communicative intent Global Exploration (CIGET) used by the therapist and collaborative processes of depressed patients related to the events experienced (ICP1). Furthermore, there are mutual excitatory relationships with depressed patients' collaborative processes on feelings and/or thoughts related to their experiences (ICP2). Symmetrically, in Figure 4B, the depressed patients' use of the communicative intent Global Exploration (CIGEP) involves a mutual activation (Quadrant I) with the therapist's collaborative interventions on the events experienced by depressed patients (ICI1), and with less intensity, with collaborative interventions focused on thoughts and/or feelings about their experiences (ICI2).

Please, insert Figure 4 about here

3.4.3 Relationships Between the Vocal Modes Used by the Therapist and Depressed Patients and the Reciprocal Construction of the Therapeutic Alliance

In Figure 5A, the therapist's use of the vocal mode Connected (VM2T) determines mutually excitatory relationships (Quadrant I) with depressed patients' collaborative processes on feelings and/or thoughts related to their experiences (ICP2), feelings toward the therapist and therapy (DCP2), the therapy goals and tasks (DCP1), and the deep meaning of the events experienced (ICP3). On the other hand, in Figure 5B, the depressed patients' use of the vocal mode Emotional (VMEP) involves mutual activations (Quadrant I) with the therapist's collaborative interventions on patients' feelings toward the therapy and/or the therapist (DCI2) and on the feelings and/or thoughts of patients about their experiences (ICI2). Moreover, the vocal mode Emotional (VMEP) activates (Quadrant IV) the therapist's collaborative interventions on the meaning of the episodes that occur with patients during the psychotherapy session to identify behavioral patterns in the relationship with them (DCI3).

Please, insert Figure 5 about here

3.4.4 Relationships Between the Interruption Modes Used by the Therapist and Depressed Patients and the Reciprocal Construction of the Therapeutic Alliance

Figure 6A shows the mutually excitatory relationship (Quadrant I) between the therapist's use of the interruption mode Cooperative (IMCT) and depressed patients' collaborative processes related to the events experienced (ICP1). In Figure 6B, there are mutual activations (Quadrant I) between the depressed patients' use of the interruption mode Cooperative (IMCP) and therapist's collaborative interventions focused on the therapy goals and tasks (DCI1), the

patients' feelings toward the therapy and/or the therapist (DCI2), and the meaning of patients' experiences (ICI3).

Please, insert Figure 6 about here

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4 Discussion

Our study aimed to analyze how specific verbal and non-verbal modes, implemented by the therapist and depressed patients, could influence and foster the reciprocal construction of a good TA, a relational and collaborative dimension that proved to be an active agent in the process of psychotherapy change (Colli and Lingiardi, 2009) during the mutual regulation processes emerging in the initial stages of therapy.

The findings presented propose a perspective of investigation on the psychotherapeutic exchange that emphasizes the importance of the joint action of *what* is said and *how* it is said, as an interacting system of verbal and non-verbal behaviors that acts by spreading information within a mutual regulation process between participants (Del Giacco et al., 2019). This notion of communication allows analyzing the therapeutic interaction by identifying those actions whereby both the therapist and the depressed patient participate in the TA construction and the verbal and non-verbal coordination processes. These aspects are at the basis of therapeutic change, as new ways for the patient to give meaning, interpret, and represent the inner reality and the surrounding world (Arístegui et al., 2004; Valdés and Krause, 2015). The results of the early TA study during the mutual regulation processes corroborate that the verbal and non-verbal behaviors of the therapist and depressed patients (who show difficulties in establishing and maintaining the TA because of their symptomatic characteristics) play a significant role in fostering collaborative behaviors that consolidate the therapeutic relationship in the initial stages of psychotherapy. All this confirms that the early TA lays the foundations for therapeutic change (Ardito and Rabellino, 2011; Colli and Lingiardi, 2009).

Concerning Verbal Mode-Structural Forms, the results confirm our hypothesis and corroborate the findings of Krause et al. (2016), according to which the therapist's structural form Question and the depressed patients' structural form Assertion foster the coordination between participants through collaborative behaviors. First of all, as in the study of Krause et al. (2016), we can notice that the therapist tends to ask more than depressed patients, while the latter tend to assert more than the former during the processes of TA building in the initial stages of psychotherapy. Of course, Verbal Mode-Structural Forms represent a surface characteristic of the communicative exchange between the therapist and patient; however, this result may provide information about the heterogeneity of the therapeutic process over time. According to Krause et al. (2016), these differences in using structural forms show the relational asymmetry between the therapist and patients where the roles are complementary: questions about the problems of the patient characterize the therapist's role, while assertions about their inner reality characterize patients. Moreover, this asymmetry is consistent with the idea of the initial phase of therapy as a moment of co-construction of the relationship and development of intersubjectivity, in which participants regulate each other according to the different verbal behaviors associated with their roles (Beebe et al., 2005). The studies of Krause et al. (2016) and Long (2001) emphasize that this asymmetry is reduced during the final stage of psychotherapy as if the former was preparatory to the latter. During this stage, indeed, both participants tend to affirm; moreover, the therapist performs actions aimed at making patients more responsible about the problem and its recovery to prepare them for the end of the therapy.

Our analyses show that the therapist's use of questions involves stable patterns and significant associations with collaborative processes by depressed patients, mainly related to the exploration of their experiences, emotions, and the goals of psychotherapy. Symmetrically, the depressed patients' use of assertions involves stable patterns and significant associations with collaborative interventions by the therapist on their experiences. Therefore, during the initial stages of psychotherapy, both questions of the therapist and assertions of depressed patients generate, together with the collaborative behaviors of the other, two self-sustaining systems that consolidate the therapeutic relationship within a mutual coordination process (Beebe, 2006). These behaviors are mainly at an experiential level for both participants and do not deepen the meaning of the internal representations of patients. Nevertheless, the use of questions stimulates depressed patients to give the therapist access to their emotional states related to these experiences and participate in the definition of therapeutic work. All this is consistent with the initial stage of psychotherapy when the therapist and patients are focused on laying the foundations of the therapeutic relationship (Safran and Muran, 2003). Thus, in clinical practice, the use of questions and assertions in the first stages of psychotherapy may promote collaborative behaviors that support the development and consolidation of a positive therapeutic relationship. Questions assume the function of a negotiating tool available to the therapist for the subsequent construction of new meanings. On the other hand, assertions become the expression of oneself and one's inner reality by depressed patients on which the therapist may act through his/her interventions for the construction of "new certainties" (Krause et al., 2016). We can conclude that questions and assertions, as regulatory strategies fostering the construction of a collaborative relationship, lay the foundations on which the therapeutic change rests and support its understanding.

Regarding Verbal Mode-Communicative Intents, the results confirm what we expected and are consistent with the findings of Dagnino et al. (2012), which underline that the therapist's and patients' intents of exploring (in our case the macro-category Global Exploration) affect the reciprocal coordination between participants through collaborative behaviors. As in the study of Dagnino et al. (2012), during the processes of building the TA, depressed patients use more global exploration (exploring, deepening, and focusing) than the therapist in the initial stages of psychotherapy. All this is consistent with the idea that the psychotherapy process requires an initial stage of inquiry and information exchange mainly focused on the exploration by patients (Dagnino et al., 2012).

As we can notice, the therapist's and depressed patients' global explorations involve similar stable patterns and significant associations with the reciprocal collaborative behaviors of participants, focused on the events experienced by patients and their feelings about these experiences. The communicative intents of exploring, deepening, and focusing –which constitute the global exploration– show the complementary nature of verbal interactions and collaborative behaviors of participants, implemented through circular schemes that foster the coordination processes and the TA construction (Dagnino et al., 2012; Heatherington, 1988). All this allows the construction of a relational space that promotes collaborative behaviors aimed at the joint work of the therapist and the depressed patient on the problems of the latter who, however, is the primary agent for subjective change (Dagnino et al., 2012; Reyes et al., 2008). As Valdés et al. (2005) pointed out, these exploratory intents lay the foundations for the subsequent processes of resignification and therapeutic change. The collaborative behaviors related to experiences and emotions emerging in the initial stages of therapy could be considered as necessary precursors "to raise awareness of better cognitive or affective adaptive patterns" (Valdés and Krause, 2015, p. 115) and to encourage cognitive and behavioral changes in the subsequent phases of building new meanings (Goldman et al., 2005). In clinical practice, these results may provide the therapist with empirical support to develop and consolidate an appropriate collaborative relationship at the basis of resignification processes, where there is a mutual communicative and emotional adaptation between participants: this is possible by

performing interventions aimed at self-and mutual regulation through the speech and by encouraging the depressed patient to explore.

Concerning Vocal Modes, the results confirm our hypothesis and support the findings of Tomicic et al. (2015b) where the therapist's vocal mode Connected and the patients' vocal mode Emotional play a significant role in the coordination processes between participants at the basis of the TA construction and psychotherapy change. In our study, it emerged that depressed patients show a greater elaborative and emotional vocal mode than the therapist during the coordination processes. Compared with the study of Tomicic et al. (2015b), where the latter expressed a more elaborative vocal quality than the former, our result could be interpreted as the effect of psychodynamic psychotherapy. Especially in the early stages, indeed, this approach stimulates depressed patients to connect with their inner world and to define the unresolved problems and unconscious feelings, creating a space of intervention that the therapist may access to work on them (Busch et al., 2007; Gabbard, 2018).

Nevertheless, our analyses show that the therapist's use of an elaborative vocal mode involves stable patterns and significant associations with depressed patients' collaborative processes on feelings related to their experiences and the therapy as well as on the therapy goals and the meaning of the events experienced. According to Tomicic and Martínez (2011), during the psychotherapeutic process, the occurrence of vocal modes is heterogeneous and assumes a U-shape where the elaborative vocal mode characterizes the initial stages. Considering voice as a tool for transmitting psychological meanings and emotional states among participants (Tomicic et al., 2011), this vocal mode of the therapist promotes the development of the inter-mental space (Martínez et al., 2014) that receives patients and stimulates the latter to implement collaborative behaviors focused on reworking their emotional states and inner representations. At the same time, this inter-mental space supports intersubjective processes in depressed patients, encouraging their contribution to define and consolidate the relationship and therapeutic work with the therapist through continuous circular processes (Wiseman and Rice, 1989). Similarly, from the depressed patients' use of emotional vocal mode, there are stable patterns and significant associations with the therapist's collaborative interventions on patients' feelings related to the therapy and their experiences and on the meaning of episodes occurring during a psychotherapy session. The emotional vocal mode, characterizing the whole therapeutic process (Tomicic and Martínez, 2011), affects the emotional climate of sessions and the development of TA (Bauer et al., 2010). Voice reflects the speaker's emotional state that "allows the listener an empathetic understanding of the speaker him/herself" (Tomicic et al., 2009, p. 36). Therefore, vocal expression of emotions by depressed patients stimulates the therapist to consolidate the affective syntony that emerges in the psychotherapeutic relationship and to rework the emotional experience of patients through circular and continuous patterns (Beebe, 2006; Orsucci et al., 2016). At the same time, this vocal mode expresses the depressed patients' openness to their inner states, encouraging the therapist to implement interventions aimed at identifying dysfunctional patterns. Thus, in clinical practice, elaborative and emotional vocal modes, intertwining with the verbal dimension of the therapeutic dialogue (Jones and LeBaron, 2002), may become psychotherapeutic tools that support the therapist in self-and mutual regulation processes with depressed patients (Tomicic et al., 2009), increasing the effectiveness of interventions to consolidate the therapeutic relationships and the deepest reworking processes that prepare for change.

Regarding Interruption Modes, the results confirm our hypothesis and, in agreement with Li et al. (2005), show that cooperative interruptions activate coordination processes between participants through circular schemes (Beebe, 2006), assuming a mediating role in the TA construction and, consequently, in psychotherapy change (Oka et al., in press). As in the study of Oka et al. (in press), during the TA construction, the therapist implements more cooperative interruptions than depressed patients in the initial stages of psychotherapy. Within the

therapeutic encounter, the relational asymmetry between patient and therapist implies that the latter is the one who has control of the conversational process (Fisher, 1984). Patients who ask for help recognize the therapist's position as an expert to rely on; the latter, therefore, has the professional power whereby he/she can interrupt to address the problems that the patient brings into the session (Stratford, 1998). Thus, the therapist's interruptions may assume collaborative potential when experienced by patients as "appropriate use of their expertise, to helpfully alter the direction or content of the therapeutic conversation" (Stratford, 1998, p. 388).

From our results, we can notice that the therapist's use of cooperative interruptions leads to stable patterns and significant associations with depressed patients' collaborative behaviors related to the events experienced. As we mentioned above, the initial stage of psychodynamic therapy represents a moment of acceptance and definition of the patient's problems in which the therapist guides the inquiry and, at the same time, leaves freedom of exploration to the former (Busch et al., 2007; Gabbard, 2018). During the therapeutic dialogue, the therapist invades the elaborative space of depressed patients with the intent of agreeing, supporting, and clarifying, that is implementing interruptions that, according to Ng et al. (1995) and Stratford (1998), promote the patients' exploratory behaviors and create an inter-mental space where participants develop and consolidate the therapeutic relationship (Martínez et al., 2014). On the other hand, from the depressed patients' use of cooperative interruptions, there are stable patterns and significant associations with the therapist's collaborative interventions on the therapy goals, patients' feelings related to the therapeutic relationship, and the meaning of their experiences. This result shows that, during the TA construction in the initial stages of therapy, depressed patients cooperatively interrupt to express involvement and participation in the therapeutic dialogue (Cafaro et al., 2016; Tannen, 1994), activating intersubjective processes that feed the inter-mental space with the therapist through continuous circular processes (Beebe, 2006; Martínez et al., 2014). This context allows the latter to implement collaborative interventions aimed, on the one hand, at consolidating the therapeutic relationship and work and, on the other hand, at promoting the redefinition of depressed patients' representations (Goldberg, 1990). In clinical practice, during the initial stages of psychotherapy, cooperative interruptions enrich the meaning and strength of the speech: they could be facilitators for the therapist and indicators of the depressed patients' involvement level. Therefore, the therapist may use these interruptions both to encourage the exploratory processes with the depressed patient and to orient the mutual coordination processes at the basis of the TA construction and psychotherapy change.

In support of our results and by way of example, the two following clinical vignettes (Table 9) show possible combinations of communicative behaviors for a good and a poor TA, respectively.

Please, insert Table 9 about here

Clinical vignette 1 emphasizes what emerged so far and how the interaction of verbal and non-verbal communicative modes, analyzed in our study and implemented by the therapist and depressed patient, leads to the building of a good alliance and the consolidation of the therapeutic relationship. Clinical vignette 2, on the contrary, shows the series of communicative exchanges bringing to the rupture of TA due to the combination of some verbal and non-verbal modes by the therapist and patient that, according to the literature (Dagnino et al., 2012; Krause et al., 2016; Li et al., 2005; Oka et al., in press; Tomicic et al., 2015b), may negatively influence the processes of change and relational construction. In turn 106, the therapist tries to resignify the patient's experience by affirming with conviction a particular state of reality. However, the patient reacts by intrusively interrupting and denies with certainty by attacking the relationship

with the therapist (turn 107). In turn, the therapist intrusively interrupts through a new resignification that affirms with conviction and hostility (turn 108). The patient replies by interrupting again in an intrusive way and affirms with conviction his inner reality by isolating affection (turn 109). It should be noted that, despite the patient's communicative intent of global exploration, the presence of declarative and intrusive modes intertwining with the verbal component affects the meaning of the speech emitted, hindering the process of change and bringing to the rupture of TA.

Probably, since these are the initial stages of the therapy (the first three sessions), the attempt of resignification that the therapist affirms with conviction is too premature to be supported by the depressed patient, generating an escalation of conflictual ruptures between participants that deteriorate the TA.

The results obtained advance in understanding the verbal and non-verbal communication modes that foster the TA construction between therapist and depressed patients in the initial stages of psychodynamic psychotherapy. Precisely, the study provides a measure of those elements of communication that may sustain depressed patients to overcome the difficulties in accessing their inner world and emotions and in regulating their relational distance in interaction with the therapist (Valdés, 2014; Valdés and Krause, 2015). These represent typical aspects of the functioning profile of depressed patients that derive from the first cognitive-affective representations and impact on the development and maintenance of the TA (Balsters et al., 2012; Levy and Wasserman, 2009; Smirnova et al., 2018). We believe, therefore, that these results, on the one hand, may consolidate knowledge on verbal dynamics and, on the other hand, may reveal aspects unexplored in the Italian context on vocal and interruption modes that, together with the former, may guide interventions with this kind of patients to increase the therapeutic effectiveness and lay the foundations for change.

The observational methodology application, both through the integrative procedure of an *ad hoc* indirect observation instrument and an observation tool with deductive (or theoretical) categories and through the use of quantitative statistical analysis techniques, has proved effective in obtaining relevant information on the dynamics existing between patient and therapist. In particular, the complementary use of lag sequential analysis and polar coordinate analysis allows a rigorous, objective, and exhaustive evaluation of the reality of the therapeutic exchange (Anguera et al., 2018). In our study, these analyses were performed considering ten retrospective lags (from lag-10 to lag-1) and ten prospective lags (from lag+1 to lag+10), unlike the usual practice of including only five lags (Sackett, 1980). Given the type of subject, the purpose of the study, and the characteristics of participants, we made this choice to obtain a greater wealth of information from the complexity of the interactive dynamics between therapist and depressed patients. The mixed methods approach, which includes this methodology, has allowed observing the ecological context of the therapeutic exchange through objective measures increasing the knowledge on the processes related to the TA construction (Anguera et al., 2018; Creswell and Plano Clark, 2017).

However, this study is not exempt from limitations. The first one is related to the theoretical approach of psychotherapy. Our research only considered psychodynamic psychotherapy but, as a future objective, it would be interesting to extend the study of the dynamics between communication and TA building to other types of psychotherapeutic approaches (e.g., cognitive-behavioral therapy, systemic therapy) to investigate the potential precursors of change in each of them. Second, we only contemplated therapies conducted by the same female therapist; for future developments, it would be useful to include the study of psychotherapies with male therapists to assess the presence of gender differences in the indicators underlying the change. Third, we only analyzed the first three sessions of each psychotherapy, but it would be useful to extend the study to complete therapies to understand how the communicative modes

influence the whole process and the psychotherapy outcome (e.g., by performing pre-post treatment studies), connected to change. Fourth, we observed 20 psychotherapy sessions (equivalent to 6,232 speaking turns); although it is an adequate number to collect a large amount of data and to detect hidden structures between constructs from the investigative perspective of the observational method (Anguera et al., 2017), it corresponds to the material produced by only seven patients from a clinical perspective. It would be useful to progressively increase the number of participants to extend the research and carry out further investigations such as the *multiple case study analysis* that allows detecting regularities between cases that are similar in some ways and homogeneous in the selection criteria (Stake, 2006). Fifth, our study focused on the interaction between communication and TA in patients with depressive symptoms. It could be interesting to extend the research to other types of disorders (e.g., anxiety, eating disorders, affective dysregulation) to trace behavioral patterns and significant associations related to change that are specific to each of them. Sixth, we focused on communication modes that have a positive impact on building a collaborative relationship between patient and therapist. However, it would be useful to extend the research by evaluating those indicators that may have a negative impact or hinder therapeutic change. Finally, our study took into account the processes of mutual regulation between therapist and patient; however, it would be useful to deepen the self-regulatory processes to understand how they affect the internal organization of each participant during the construction of change.

5 Data Availability Statement

The datasets generated for this study are available on request to the corresponding author.

6 Ethic Statement

The Psychology Interdepartmental Ethics Committee of the University of Padua (Italy) evaluated and approved this investigation. The study has been conducted following the ethical guidelines and procedures of the Interdepartmental Laboratories for Research and Applied Psychology (L.I.RI.P.A.C.), to which the DPS belongs, based on Italian law no. 196/03 about privacy and confidentiality and the ethical standards for research established by the American Psychological Association (2017). All participants gave their written informed consent to participate in the research in conformity with the Declaration of Helsinki before making the audio recording and data collection; the study was conducted after the end of psychotherapies. Personal information of participants was replaced and not provided to the coders of audio recordings and transcripts to
guarantee confidentiality.

7 Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

8 Author Contributions

LD documented, designed, drafted, and wrote the manuscript. Moreover, he trained and supervised the coders and accomplished statistical analyses. SS supervised the sample recruitment, while MA supervised the method and procedure sessions and statistical analyses. SS and MA revised the manuscript for theoretical and intellectual content. Finally, all authors provided the final approval of the version to be published.

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Table 1. Summary scheme of the Communicative Modes Analysis System in Psychotherapy (CMASP) (retrieved from Del Giacco et al., 2019).

Verbal Mode-Structural Form (VeM-SF)	Verbal Mode-Communicative Intent (VeM-CI)	Vocal Mode (VoM)	Interruption Mode (IM)
Courtesies (SF1)	Acknowledging (CI1)	Reporting (VM1)	Cooperative-Concurrence (IM1)
Assertion (SF2)	Informing (CI2)	Connected (VM2)	Cooperative-Assistance (IM2)
Question (SF3)	Exploring (CI3)	Declarative (VM3)	Cooperative-Clarification (IM3)
Agreement (SF4)	Deepening (CI4)	Introspective (VM4)	Cooperative-Exclamation (IM4)
Denial (SF5)	Focusing (CI5)	Emotional-Positive (VM5)	Intrusive-Disagreement (IM5)
Direction (SF6)	Temporizing (CI6)	Emotional-Negative (VM6)	Intrusive-Floor taking (IM6)
	Attuning (CI7)	Pure Positive Emotion (VM7)	Intrusive-Competition (IM7)
	Resignifying (CI8)	Pure Negative Emotion (VM8)	Intrusive-Topic change (IM8)
			Intrusive-Tangentialization (IM9)
			Neutral interruption (IM10)
			Failed Interruption (IM11)

Table 2. Summary scheme of the Collaborative Interactions Scale-Revised (CIS-R) (adapted from Colli et al., 2014). The authors granted permission to use the CIS-R scheme.

CIS-Therapist	CIS-Patient
Form of Therapist Interventions (TI)	Direct Collaborative Processes (DCP)
Supportive (TI1)	Negotiation Tasks/Goals (DCP1)
Explicative (TI2)	Affects (DCP2)
Explorative (TI3)	Meaning (DCP3)
Expressive (TI4)	Indirect Collaborative Processes (ICP)
Direct Collaborative Interventions (DCI)	Facts (ICP1)
Task/Goal (DCI1)	Affects (ICP2)
Affects (DCI2)	Meaning (ICP3)
Meaning (DCI3)	Direct Rupture Markers (DRM)
Meta Communication (DCI4)	Task/Goal (DRM1)
Indirect Therapist Interventions (ICI)	Relationship (DRM2)
Facts (ICI1)	Discouragement (DRM3)
Affects (ICI2)	Parameters (DRM4)
Meaning (ICI3)	Indirect Rupture Markers (IRM)
Rupture Interventions (RI)	Linguistic Avoidance (IRM1)
Linguistic Avoidance (RI1)	Affective Avoidance (IRM2)
Affective Avoidance (RI2)	Self-esteem Regulation Strategies (IRM3)
Hostility (RI3)	Indirect Allusions (IRM4)
Perseveration (RI4)	Acquiescence (IRM5)
Lack of Clarity (RI5)	

Table 3. CMASP categories distribution in the therapist and depressed patients (*N* = 6,232 speaking turns).

	Therapist (*n* = 3,121 speaking turns)		**Patients group (*n* = 3,111 speaking turns)**	
CMASP	*f*	%	*f*	%
Verbal Mode-Structural Form (VeM-SF)	2,750	88.11	2,997	96.34
Courtesies (SF1)	23	0.84	29	0.97
Assertion (SF2)	832	30.25	2,467	82.32
Question (SF3)	687	24.98	65	2.17
Agreement (SF4)	1,149	41.78	366	12.21
Denial (SF5)	11	0.40	69	2.30
Direction (SF6)	48	1.75	1	0.03
Not coded	371	11.89	114	3.66
Verbal Mode-Communicative Intent (VeM-CI)	2,503	80.20	2,668	85.76
Acknowledging (CI1)	1,108	44.27	167	6.26
Informing (CI2)	140	5.59	56	2.10
Global Exploration (CIGE)	832	33.24	2,202	82.53
Temporizing (CI6)	3	0.12	23	0.86
Attuning (CI7)	180	7.19	47	1.76
Resignifying (CI8)	240	9.59	173	6.48
Not coded	618	19.80	443	14.24
Vocal Mode (VoM)	1,419	45.47	2,413	77.56
Reporting (VM1)	2	0.14	8	0.33
Connected (VM2)	670	47.22	851	35.27
Declarative (VM3)	92	6.48	87	3.61
Introspective (VM4)	9	0.63	177	7.34
Emotional (VME)	339	23.89	1,214	50.31
Pure Positive Emotion (VM7)	287	20.23	46	1.91
Pure Negative Emotion (VM8)	20	1.41	30	1.24
Not coded	1,702	54.53	698	22.44
Interruption Mode (IM)	550	17.62	585	19. 09
Cooperative (IMC)	238	43.27	209	35.19
Intrusive (IMI)	171	31.09	180	30.30
Neutral Interruption (IM10)	96	17.45	190	31.99
Failed Interruption (IM11)	45	8.18	15	2.53
Not coded	2,571	82.38	2,526	81.20

Table 4. CIS-T and CIS-P items distribution (*N* = 6,232 speaking turns).

	Therapist (*n* = 3,121 speaking turns)			Patients group (*n* = 3,111 speaking turns)	
CIS-R	*f*	%		*f*	%
CIS-Therapist (CIS-T)	1,215	38.93	CIS-Patient (CIS-P)	2,529	81.29
Direct Therapist Intervention (DCI)	165	13.58	Direct Collaborative Processes (DCP)	98	3.88
Task/Goal (DCI1)	137	11.28	Negotiation Tasks/Goals (DCP1)	48	1.90
Affects (DCI2)	19	1.56	Affects (DCP2)	48	1.90
Meaning (DCI3)	9	0.74	Meaning (DCP3)	2	0.08
Meta communication (DCI4)	0	0.00	Indirect Collaborative Processes (ICP)	1,106	43.73
Indirect Therapist Intervention (ICI)	787	64.77	Facts (ICP1)	786	31.08
Facts (ICI1)	455	37.45	Affects (ICP2)	227	8.98
Affects (ICI2)	177	14.57	Meaning (ICP3)	93	3.68
Meaning (ICI3)	155	12.76	Direct Rupture Marker (DRM)	40	1.58
Rupture Interventions (RI)	263	21.65	Task/Goal (DRM1)	2	0.08
Linguistic Avoidance (RI1)	140	11.52	Relationship (DRM2)	35	1.38
Affective Avoidance (RI2)	0	0.00	Discouragement (DRM3)	0	0.00
Hostility (RI3)	122	10.04	Parameters (DRM4)	3	0.12
Perseveration (RI4)	1	0.08	Indirect Rupture Marker (IRM)	1,285	50.81
Lack of Clarity (RI5)	0	0.00	Linguistic Avoidance (IRM1)	798	31.55
Not coded	1,906	61.07	Affective Avoidance (IRM2)	337	13.33
			Self-esteem Regulation Strategies	43	1.70
			Indirect Allusions (IRM4)	26	1.03
			Acquiescence (IRM5)	81	3.20
			Not coded	582	18.71

Table 5. Depressed patients' and therapist's behavioral patterns in the alliance construction due to the action of the reciprocal structural forms.

Lag-10	Lag-9	Lag-8	Lag-7	Lag-6	Lag-5	Lag-4	Lag-3	Lag-2	Lag-1	CB	Lag+1	Lag+2	Lag+3	Lag+4	Lag+5	Lag+6	Lag+7	Lag+8	Lag+9	Lag+10
ICP1 (3.69)	ICP1 (4.77)	ICP1 (5.80)	ICP1 (3.10)	ICP1 (3.94)	ICP1 (5.28)	ICP1 (3.27) ICP2 (2.79)	ICP1 (6.98)	ICP1 (3.23)	ICP1 (6.70)	SF3T	ICP1 (9.60)	ICP1 (2.85)	ICP1 (7.21)	DCP1 (2.81) ICP1 (2.75)	ICP1 (6.33)	ICP2 (3.86) DCP1 (2.52)	ICP1 (5.89)	ICP2 (2.87)	ICP1 (5.19) ICP2 (2.10)	**ICP1 (2.49)**
IRM1 (-3.52)	*IRM1 (-2.63)* *IRM5 (-2.12)*	*IRM1 (-2.59)*	*IRM1 (-2.52)* *IRM5 (-2.51)*	*IRM1 (-2.33)* *IRM5 (-1.98)*	*IRM1 (-4.38)* *DCP2 (-2.31)*	*IRM5 (-2.31)* *IRM1 (-2.20)* *DRM2 (-2.16)*	*IRM1 (-5.56)* *IRM5 (-2.17)*	*ICP3 (-2.39)* *DRM2 (-2.16)*	***IRM1 (-4.84)*** ***IRM5 (-2.10)***		*IRM1 (-5.05)* *IRM2 (-3.14)* *IRM5 (-2.74)*	*IRM1 (-4.20)*	*IRM5 (-4.37)* *IRM1 (-4.36)*	*IRM1 (-2.93)*	***IRM1 (-4.18)*** ***IRM5 (-3.22)***	*IRM1 (-2.68)* *IRM5 (-2.68)*	*IRM1 (-2.96)* *IRM5 (-2.91)* *DRM2 (-2.06)*	*IRM1 (-2.90)* *DRM2 (-2.06)*	*IRM1 (-3.87)* *IRM5 (-3.20)* *ICP3 (-2.13)* *DRM2 (-2.00)*	*DRM2 (-2.24)*
ICI1 (3.27)	ICI1 (4.20)	ICI1 (3.84)	ICI1 (4.89)	ICI1 (3.70)	ICI1 (5.52) ICI2 (2.92)	ICI1 (3.18)	ICI1 (7.49) ICI2 (4.58)	ICI1 (2.52)	ICI1 (8.57) ICI2 (4.64)	SF2P	ICI1 (9.43) ICI2 (3.42)	ICI1 (3.83)	ICI1 (7.81) ICI2 (3.96)	ICI1 (4.35)	ICI1 (5.41) ICI2 (2.61)	ICI2 (2.34)	ICI1 (4.41)	ICI1 (2.93)	ICI1 (5.50)	**ICI1 (2.33)**
DCI1 (-3.31) *ICI3 (-3.25)* *ICI3 (-2.02)*	*DCI1 (-5.10)* *RI1 (-2.45)*	*DCI1 (-4.16)* *ICI3 (-3.37)*	*DCI1 (-7.14)* *RI1 (-2.46)*	*DCI1 (-4.12)*	*DCI1 (-6.47)* *ICI3 (-3.35)* *RI1 (-2.56)*	*DCI1 (-4.71)*	*DCI1 (-7.63)* *ICI3 (-4.83)* *RI1 (-2.93)*	*ICI3 (-2.73)* *DCI3 (-2.27)*	***DCI1 (-8.88)*** ***ICI3 (-7.78)***		*ICI3 (-7.64)* *DCI1 (-7.32)*	*DCI1 (-3.89)*	***DCI1 (-7.40)*** ***ICI3 (-4.16)*** ***RI3 (-2.75)*** ***DCI2 (-1.98)***	*DCI1 (-3.60)* *ICI3 (-2.74)* *DCI2 (-2.23)*	*DCI1 (-6.33)* *ICI3 (3.17)*	*DCI1 (-3.16)* *ICI3 (-3.17)*	*DCI1 (-3.82)* *ICI3 (-2.30)*	*DCI1 (4.02)*	*DCI1 (-3.06)* *ICI3 (-2.83)*	*DCI1 (-3.63)*

Note. **Structural Form (Therapist)-CIS (Patient) Interaction**: *Criterion Behavior* (CB): structural form Question (SF3T); *Conditional Behaviors*: Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Affective Avoidance (IRM2), and Acquiescence (IRM5). **Structural Form (Patient)-CIS (Therapist) Interaction**: *Criterion Behavior*

(CB): structural form Assertion (SF2P); *Conditional behaviors*: Direct Collaborative Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3). Z values > 1.96 indicate the excitatory relationships; Z values < -1.96 (in italics) indicate the inhibitory relationships; categories in bold indicate the Max lag and the end of the pattern; significance level at $p < 0.05$.

Table 6. Depressed patients' and therapist's behavioral patterns in the alliance construction due to the action of the reciprocal communicative intents.

Lag-10	Lag-9	Lag-8	Lag-7	Lag-6	Lag-5	Lag-4	Lag-3	Lag-2	Lag-1	CB	Lag+1	Lag+2	Lag+3	Lag+4	Lag+5	Lag+6	Lag+7	Lag+8	Lag+9	Lag+10
ICP1 (3.73)	ICP1 (3.66)	ICP1 (4.28)	ICP1 (4.72)	IRM3 (3.59) ICP1 (3.50)	ICP1 (5.96)	ICP1 (4.26) ICP2 (2.06)	ICP1 (7.31)	ICP1 (6.75)	ICP1 (8.53)	CIGET	ICP1 (11.37)	ICP1 (5.97)	ICP1 (7.24) ICP2 (2.23)	ICP1 (4.86)	ICP1 (5.87)	ICP1 (3.56) ICP2 (2.45)	ICP1 (4.90)	ICP1 (3.64) ICP2 (2.53)	ICP1 (5.96)	**ICP1 (4.21) ICP2 (3.14)**
IRM1 (-2.89) DCP2 (-2.39) IRM5 (-2.38)	*DCP2 (-2.19)*	*IRM1 (-2.69) IRM5 (-2.24) DCP2 (-2.14)*	*IRM5 (-2.71) IRM1 (-2.20)*	*IRM1 (-2.36) ICP3 (-2.03)*	*IRM1 (-3.77) IRM5 (-2.21)*	*DCP1 (-2.71) IRM1 (-2.64) DCP2 (-2.48) DRM2 (-2.37)*	*IRM1 (-5.30) DCP1 (-2.98) IRM5 (-2.43) DCP2 (-2.07)*	*ICP3 (-3.48) DCP1 (-2.75) DRM2 (-2.22) IRM1 (-2.15)*	***IRM1 (-4.57) DCP1 (-2.26) IRM5 (-2.12)***		***IRM1 (-5.28) IRM2 (-3.21) ICP3 (-2.54) IRM5 (-2.50) DCP1 (-2.29)***	*IRM1 (-5.28) DCP1 (-3.64) IRM5 (-2.63)*	*IRM1 (-4.38) DCP1 (-3.05) IRM5 (-2.35)*	*IRM1 (-3.73) DCP1 (-2.58) IRM5 (-2.20)*	*IRM1 (-4.15) DRM2 (-2.06)*	*IRM1 (-3.74)*	*DRM2 (-2.62) IRM2 (-2.07) DCP1 (-1.97)*	*IRM1 (-2.59) DRM2 (-2.43) IRM1 (-2.40)*	*IRM1 (-3.18) DRM2 (-2.89) DCP1 (-2.86) IRM2 (-1.97)*	*IRM1 (-3.20) IRM5 (-2.69) DRM2 (-2.18)*
ICI1 (6.04)	ICI1 (5.77)	ICI1 (6.02) ICI2 (2.34)	ICI1 (6.67)	ICI1 (6.96)	ICI1 (9.10) ICI2 (2.02)	ICI1 (6.58)	ICI1 (10.82)	ICI1 (5.88)	ICI1 (12.30) ICI2 (3.71)	CIGEP	ICI1 (10.20) ICI2 (2.54)	ICI1 (6.25)	ICI1 (7.99) ICI2 (2.86)	ICI1 (4.94)	ICI1 (6.72)	ICI1 (3.58) IC2 (2.13)	ICI1 (4.74)	ICI1 (4.25)	ICI1 (4.56)	**ICI1 (4.47)**
DCI1 (-7.30) ICI3 (-4.11) DCI3 (-2.62)	*DCI1 (-6.63) ICI3 (-2.97) DCI3 (-2.73) RI1 (-1.99)*	*DCI1 (-8.61) ICI3 (-2.21) DCI3 (-2.12) DCI2 (-1.99)*	*DCI1 (-7.67) DCI3 (-3.32) ICI3 (-2.71) RI1 (-2.42)*	*DCI1 (-6.98) DCI3 (-2.95)*	*DCI1 (-7.75) ICI3 (-5.03) DCI3 (-2.67) RI1 (-2.33) DCI2 (-2.01)*	*DCI1 (-6.37) DCI3 (-4.10) DCI2 (-2.15)*	*DCI1 (-8.14) ICI3 (-6.37) RI1 (-2.91) DCI3 (-2.63) DCI2 (-2.33)*	*DCI1 (-6.73) ICI3 (-3.34)*	***DCI1 (-9.70) ICI3 (-9.57) RI1 (-4.29)***		***ICI3 (-8.67) DCI1 (-7.44) DCI3 (-2.75)***	*DCI1 (-5.46) ICI3 (-3.64) DCI2 (-3.52) DCI3 (-2.58)*	*ICI3 (-5.68) DCI1 (-5.20) DCI3 (-3.70) RI3 (-2.69)*	*ICI3 (-4.30) DCI1 (-3.84) DCI3 (-3.52)*	*DCI3 (-5.17) ICI3 (-4.58) DCI1 (-3.03) DCI2 (-2.84) RI3 (-2.11)*	*ICI3 (-4.98) DCI2 (-2.32) DCI1 (-2.23) DCI3 (-2.09)*	*ICI3 (-4.38) DCI3 (-3.18)*	*ICI3 (-4.70) DCI3 (-2.48)*	*ICI3 (-2.96) DCI3 (-2.94) DCI2 (-2.47) DCI1 (-2.05)*	*ICI3 (-5.81) DCI1 (-2.93)*

Note. **Communicative Intent (Therapist)-CIS (Patient) Interaction**: *Criterion Behavior* (CB): communicative intent Global Exploration (CIGET); *Conditional Behaviors*: Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Affective Avoidance (IRM2), Self-esteem Regulation Strategies (IRM3), and Acquiescence (IRM5). **Communicative Intent (Patient)-CIS (Therapist) Interaction**: *Criterion Behavior* (CB): communicative intent Global Exploration (CIGEP); *Conditional behaviors*: Direct Collaborative Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3). Z values > 1.96 indicate the excitatory relationships; Z values < -1.96 (in italics) indicate the inhibitory relationships; categories in bold indicate the Max lag and the end of the pattern; significance level at $p < 0.05$.

Table 7. Depressed patients' and therapist's behavioral patterns in the alliance construction due to the action of the reciprocal vocal modes.

Lag-10	Lag-9	Lag-8	Lag-7	Lag-6	Lag-5	Lag-4	Lag-3	Lag-2	Lag-1	CB	Lag+1	Lag+2	Lag+3	Lag+4	Lag+5	Lag+6	Lag+7	Lag+8	Lag+9	Lag+10
ICP3 (2.01)	ICP2 (2.62)					**ICP2 (2.05)**	ICP2 (2.35)	ICP2 (2.52)	ICP2 (2.95)	VM2T	ICP1 (2.89) DCP1 (2.57)	ICP1 (2.53)	**DCP2 (2.35)**			IRM3 (2.07)				DRM2 (2.09) DCP1 (2.01)
DCP1 (-2.45)				***IRM5 (-2.80)***		*DCP1 (-2.71)* *IRM5 (-2.13)*	*DRM2 (-2.13)*	*DRM2 (-2.00)*	*IRM1 (-2.97)*		*IRM1 (-4.20)*	*IRM1 (-2.26)*	***IRM1 (-2.18)***							
		ICI3 (2.07)					**ICI2 (2.00)**	ICI2 (2.40)	DCI2 (2.95)	VMEP	ICI2 (2.80)	ICI2 (2.09)	**DCI2 (2.15)**			ICI3 (2.60)	ICI3 (2.57) DCI2 (2.12)	ICI3 (3.17)	ICI3 (2.54) DCI2 (2.51)	ICI3 (2.06) DCI2 (2.06)
	DCI1 (-2.27)			*DCI3 (-2.28)* *ICI2 (-1.99)*			***DCI3 (-2.42)***	*ICI1 (-1.99)*						*RI1 (-2.24)*				*ICI2 (-2.20)*	*ICI1 (-2.34)*	

Note. **Vocal Mode (Therapist)-CIS (Patient) Interaction**: *Criterion Behavior* (CB): vocal mode Connected (VM2T); *Conditional Behaviors*: Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Self-esteem Regulation Strategies (IRM3), and Acquiescence (IRM5). **Vocal Mode (Patient)-CIS (Therapist) Interaction**: *Criterion Behavior* (CB): vocal mode Emotional (VME); *Conditional behaviors*: Direct Collaborative Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1). Z values > 1.96 indicate the excitatory relationships; Z values < -1.96 (in italics) indicate the inhibitory relationships; categories in bold indicate the Max lag and the end of the pattern; significance level at $p < 0.05$.

Table 8. Depressed patients' and therapist's behavioral patterns in the alliance construction due to the action of the reciprocal interruption modes.

Lag-10	Lag-9	Lag-8	Lag-7	Lag-6	Lag-5	Lag-4	Lag-3	Lag-2	Lag-1	CB	Lag+1	Lag+2	Lag+3	Lag+4	Lag+5	Lag+6	Lag+7	Lag+8	Lag+9	Lag+10
ICP2 (2.57)		ICP2 (2.24)			**ICP1 (2.74)**	ICP1 (3.27)	ICP1 (2.51)	ICP1 (2.07)	ICP1 (3.60)	IMCT	ICP1 (3.60)	ICP1 (2.71)	ICP1 (2.96)	ICP1 (1.98)	ICP3 (2.02)	**ICP2 (2.80)**				
					IRM5 (-2.11)	*IRM2 (-2.06)*			***DCP1 (-3.07)***		*IRM5 (-2.17)*		*DCP1 (-2.05)*		*IRM1 (-2.13)*	***IRM1 (-2.08)***				
			ICI2 (3.27) DCI1 (2.26)		DCI1 (2.36)	DCI1 (3.03)	DCI1 (2.62)	DCI1 (2.62)	DCI1 (3.70) ICI3 (2.68)	IMCP	DCI1 (3.27) ICI3 (3.24)	DCI1 (2.45)	DCI1 (2.90)	DCI1 (2.65)	DCI1 (2.04)		**DCI1 (2.15) DCI2 (1.99)**			
		RI1 (-2.80)	*ICI1 (-2.41)*						***ICI1 (-3.44)***		*RI3 (-4.24)*		*ICI1 (-2.21)*	***ICI2 (-2.06)***						

Note. **Interruption Mode (Therapist)-CIS (Patient) Interaction**: *Criterion Behavior* (CB): interruption mode Cooperative (IMCT); *Conditional Behaviors*: Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Self-esteem Regulation Strategies (IRM3), and Acquiescence (IRM5). **Interruption Mode (Patient)-CIS (Therapist) Interaction**: *Criterion Behavior* (CB): interruption mode Cooperative (IMCP); *Conditional behaviors*: Direct Collaborative Interventions on Task/Goal (DCI1), Affects (DCI2); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3). Z values > 1.96 indicate the excitatory relationships; Z values < -1.96 (in italics) indicate the inhibitory relationships; categories in bold indicate the Max lag and the end of the pattern; significance level at $p < 0.05$.

Table 9. Clinical vignettes.

Turn	Role	Transcription	VeM-SF	VeM-CI	VoM	IM	CIS-T	CIS-P
Clinical vignette 1								
180	T	How do you feel about talking about stuff like that again?	Question	Global Exploration	Connected	/	DCI on Affects	
181	P	It's strange… I'm not used to talking about my things, but I feel calm because it was something I wanted to do for me.	Assertion	Global Exploration	Emotional	/		DCP on Affects
182	T	Calm how? //(<2")	Question	Global Exploration	/	/	DCI on Affects	
183	P	//Well, you know, it's hard to have a dialogue with my mom without a figh-//	Assertion	Global Exploration	Emotional	Cooperative		ICP on Facts
184	T	//Do you feel anger growing with her too?	Question	Global Exploration	Connected	Cooperative	ICI on Affects	
185	P	Yes…I try to tell her what I have inside, but she doesn't listen to me and stays firm in her beliefs…so I start shouting...	Assertion	Global Exploration	Emotional	/		ICP on Facts
Clinical vignette 2								
106	T	It seems to me that you're behaving with your boyfriend the same way as you are with your fathe-//	Assertion	Resignifying	Declarative	/	ICI on Meaning	
107	P	//No, it's not like you're sayin-//	Denial	Global Exploration	Declarative	Intrusive		DRM on Relationship
108	T	//but, when you stop to put together the relationship you have with your boyfriend and that one with your father, you don't seem so sure anymore-//	Assertion	Resignifying	Declarative	Intrusive	RI of Hostility	
109	P	//My father was a person who disappeared for days, but you know how fathers are… they're always busy at work.	Assertion	Global Exploration	Declarative	Intrusive		IRM of Affective Avoidance

Note. T, Therapist; P, Patient; VeM-SF, Verbal Mode-Structural Form; VeM-CI, Verbal Mode-Communicative Intent; VoM, Vocal Mode; IM, Interruption Mode; CIS-T, Collaborative Interactions Scale-Therapist; CIS-P, Collaborative Interactions Scale-Patient; DCI, Direct Collaborative Intervention, ICI, Indirect Collaborative Intervention; RI, Rupture Intervention; DCP, Direct Collaborative Process; ICP, Indirect Collaborative Process; DRM, Direct Ruptures Marker; IRM, Indirect Rupture Marker; /, indicates the not-coded behaviors; //, indicates the speaking turn interruption; (<2"), indicates a speech less than 2 seconds in duration.

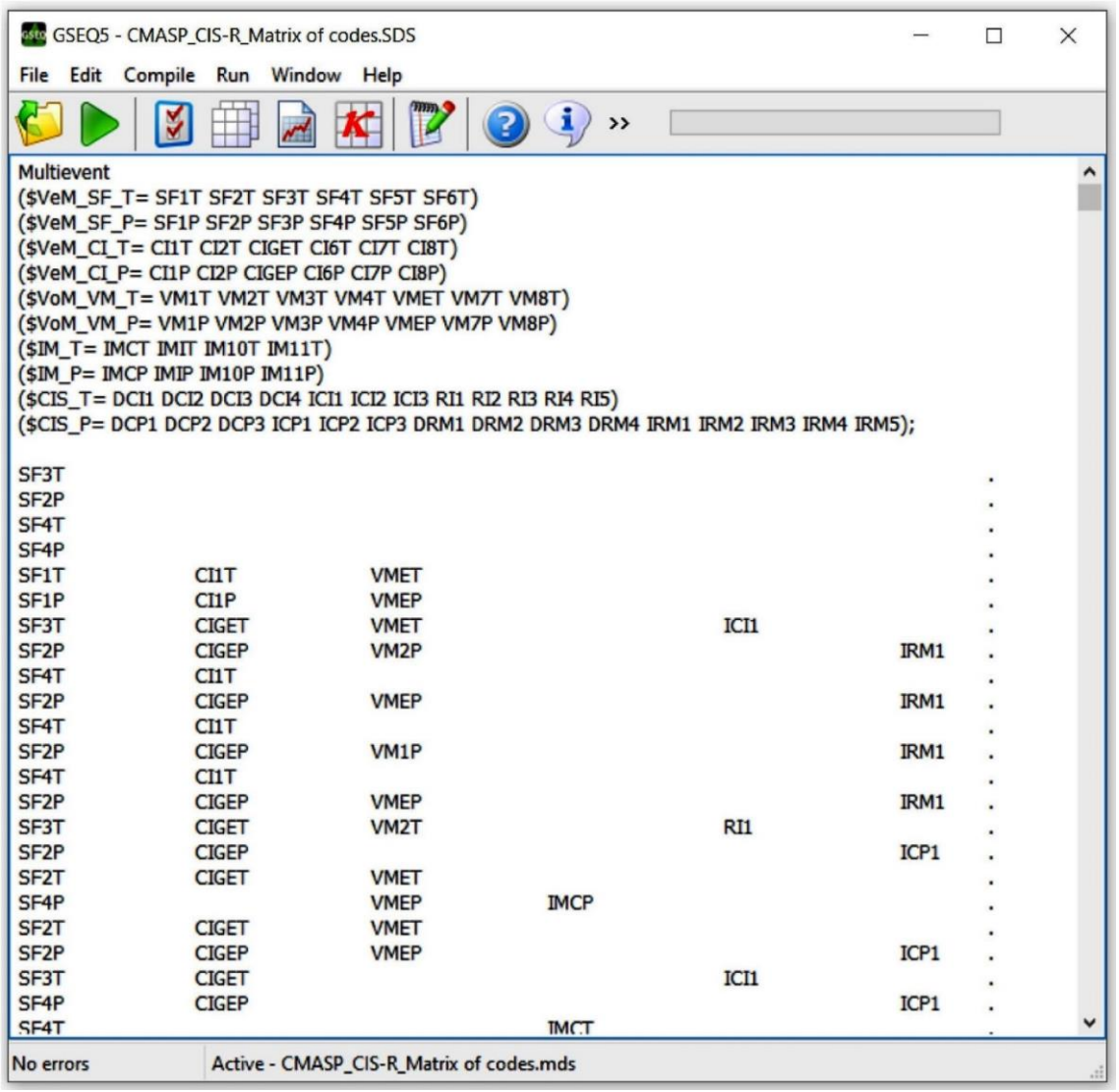


Figure 1. Screenshot of CMASP and CIS-R merged data in the form of a code matrix in GSEQ (v. 5.1.23; Bakeman and Quera, 2011). Each row corresponds to the multiple and concurrent event codes of a speaking turn. T and P distinguish the therapist's and patients' codes in their respective speaking turns.

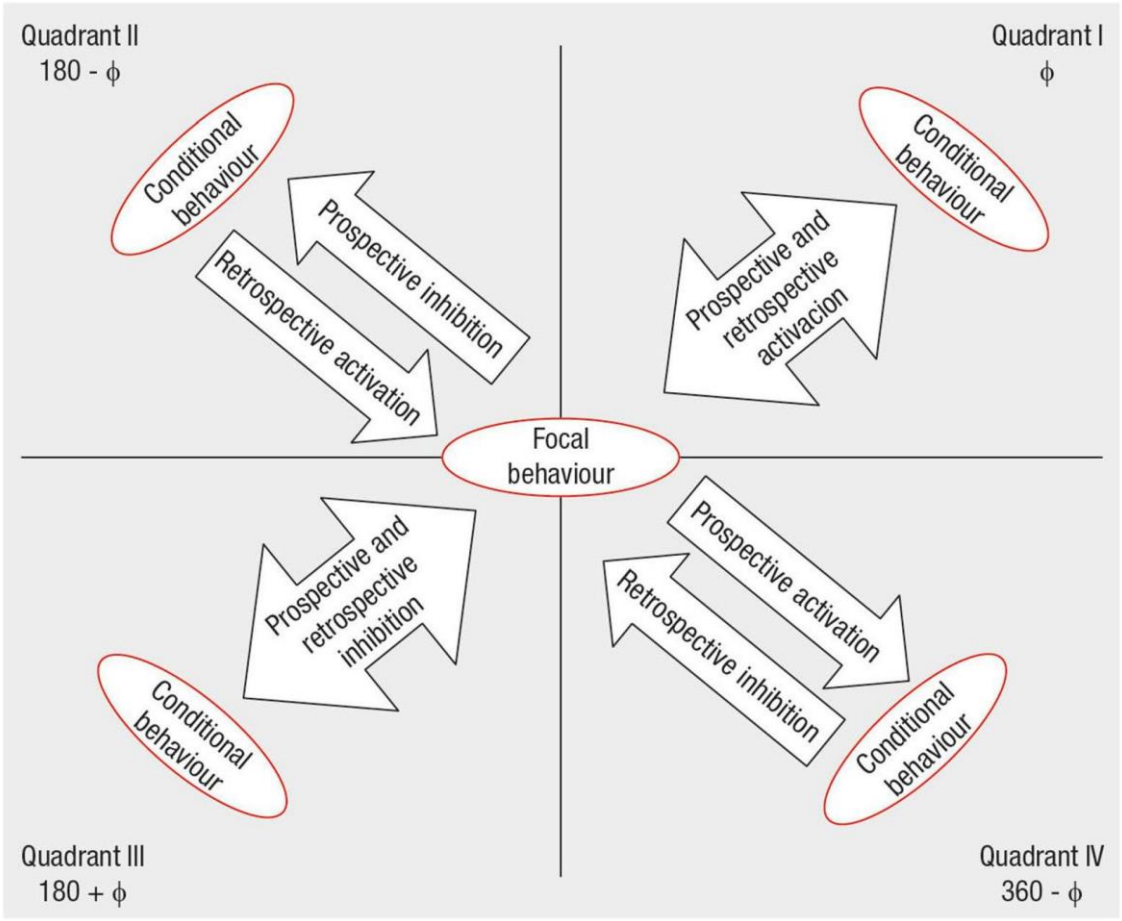
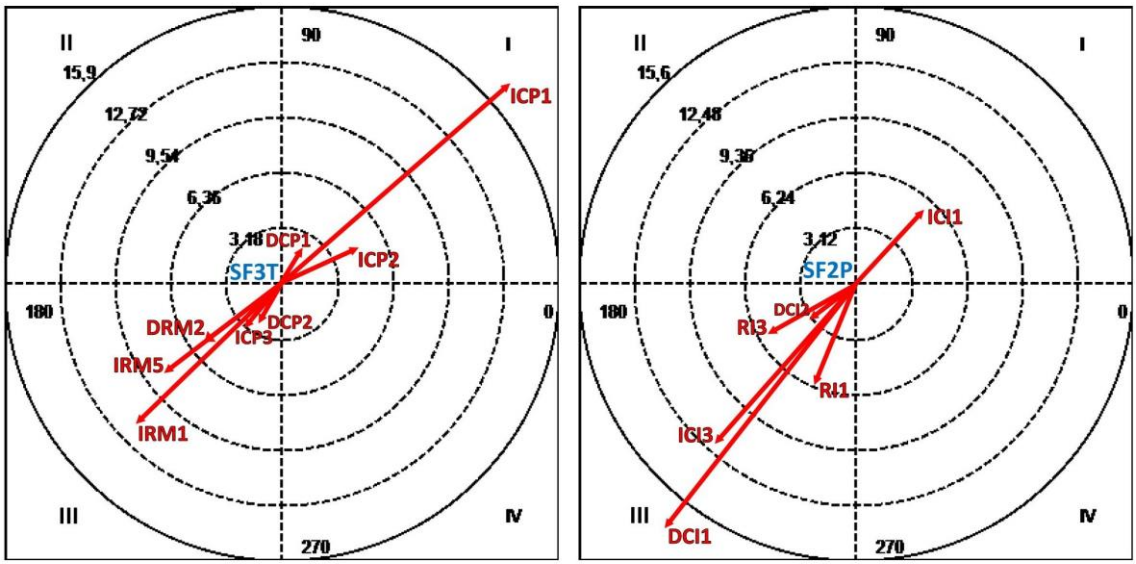


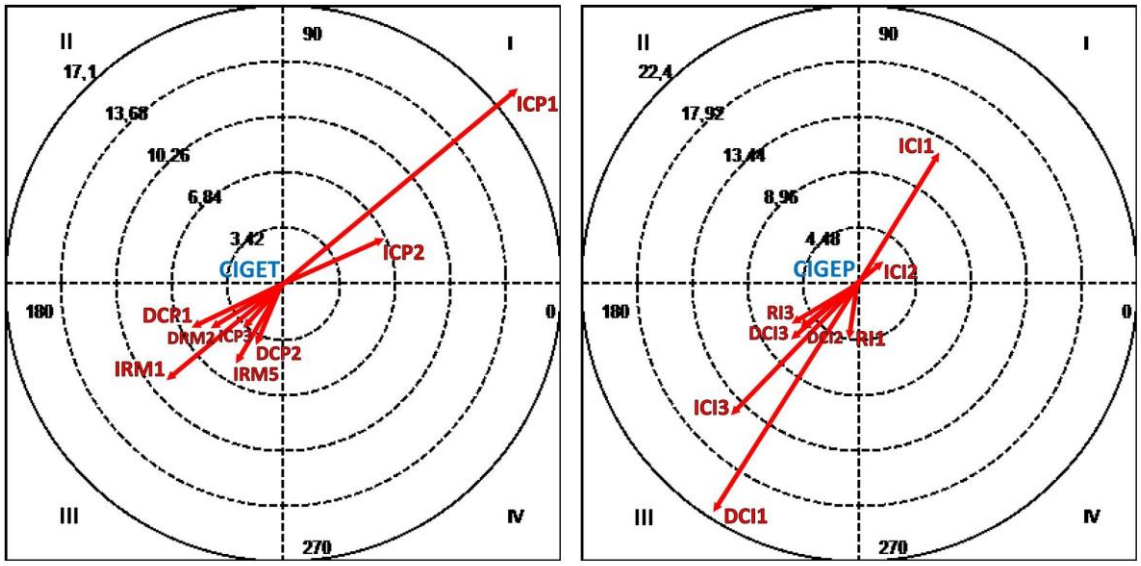
Figure 2. Polar coordinates' vector map that depicts the relationship between the focal and conditional behaviors, based on the quadrant where the vector is located (retrieved from Aragón et al., 2016, p. 5). The authors granted permission to use the image.



Category	Q	Prosp.	Retrosp.	Ratio	Radius	Angle
DCP1	I	1.19	2.07	0.87	2.39*	60.19
DCP2	III	-1.45	-1.74	-0.77	2.26*	230.16
ICP1	I	13.29	11.54	0.66	17.61*	40.97
ICP2	I	4.63	2.05	0.40	5.07*	23.88
ICP3	III	-2.06	-2.15	-0.72	2.98*	226.34
DRM2	III	-4.38	-3.35	-0.61	5.51*	217.40
IRM1	III	-8.37	-8.19	-0.70	11.71*	224.35
IRM2	III	-1.38	-1.08	-0.62	1.75	218.11
IRM3	III	-0.43	-0.40	-0.68	0.58	223.15
IRM4	I	0.47	1.66	0.96	1.73	74.32
IRM5	III	-6.69	-5.11	-0.61	8.42*	217.34

Category	Q	Prosp.	Retrosp.	Ratio	Radius	Angle
DCI1	III	-9.99	-12.99	-0.79	16.39*	232.44
DCI2	III	-2.72	-1.97	-0.59	3.35*	215.92
DCI3	III	-0.79	-0.79	-0.71	1.11	224.86
ICI1	I	3.62	3.91	0.73	5.33*	47.17
ICI2	I	0.38	1.48	0.97	1.53	75.62
ICI3	III	-7.74	-8.77	-0.75	11.70*	228.59
RI1	III	-2.30	-5.55	-0.92	6.01*	247.45
RI3	III	-4.81	-2.55	-0.47	5.44*	207.93

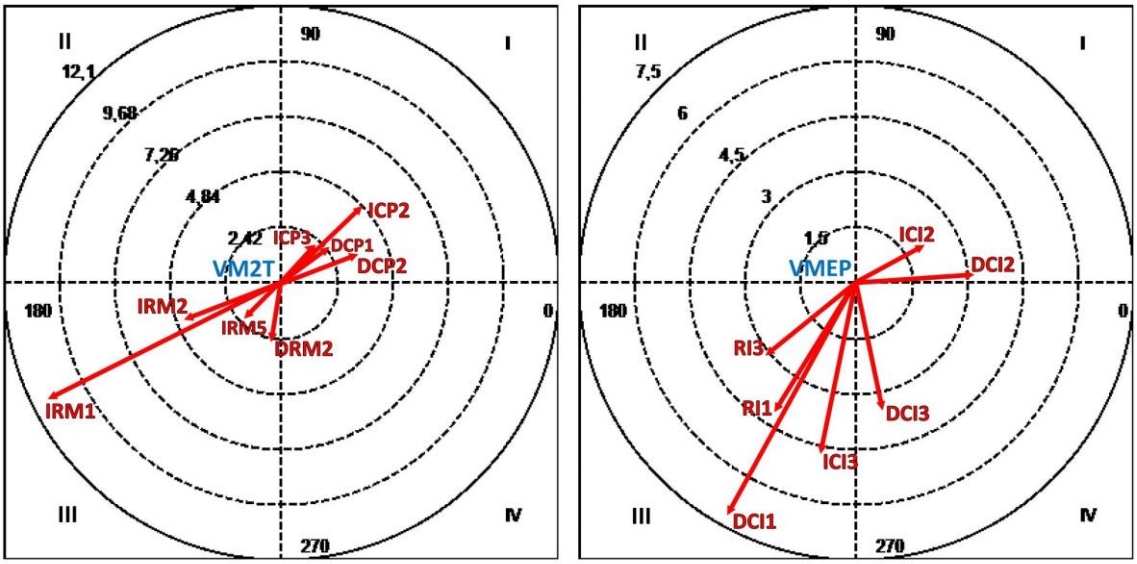
Figure 3. Vectorial maps of the statistically significant relationships for the therapist **(A)**, considering the structural form Question (SF3T) as focal behavior and CIS-P categories (Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1) Affective Avoidance (IRM2), Self-esteem Regulation Strategies (IRM3), Indirect Allusions (IRM4), and Acquiescence (IRM5)) as conditional behaviors, and for the group of depressed patients **(B)**, considering the structural form Assertion (SF2P) as focal behavior and CIS-T categories (Direct Collaborative Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3)) as conditional behaviors. Under each map, the results of the polar coordinate analysis are presented. The significance level was fixed at $p < 0.05$ (*).



Category	Q	Prosp.	Retrosp.	Ratio	Radius	Angle
DCP1	III	-5.41	-2.57	-0.43	5.99*	205.46
DCP2	III	-1.91	-3.65	-0.89	4.12*	242.45
ICP1	I	14.28	12.00	0.64	18.65*	40.04
ICP2	I	6.14	2.88	0.42	6.78*	25.14
ICP3	III	-2.55	-2.55	-0.71	3.60*	224.93
DRM2	III	-4.53	-2.48	-0.48	5.17*	208.70
IRM1	III	-7.18	-5.77	-0.63	9.21*	218.82
IRM2	III	-1.48	-0.11	-0.07	1.48	184.26
IRM3	III	-0.05	-0.05	-0.66	0.07	221.53
IRM4	I	0.96	0.42	0.40	1.05	23.40
IRM5	III	-2.73	-4.80	-0.87	5.52*	240.39

Category	Q	Prosp.	Retrosp.	Ratio	Radius	Angle
DCI1	III	-11.69	-18.65	-0.85	22.01*	237.93
DCI2	III	-4.74	-3.83	-0.63	6.09*	218.91
DCI3	III	-5.48	-4.82	-0.66	7.29*	221.31
ICI1	I	6.68	10.34	0.84	12.31*	57.15
ICI2	I	1.71	1.47	0.65	2.26*	40.62
ICI3	III	-10.02	-10.39	-0.72	14.43*	226.04
RI1	III	-0.62	-4.64	-0.99	4.68*	262.39
RI3	III	-5.41	-3.41	-0.53	6.40*	212.21

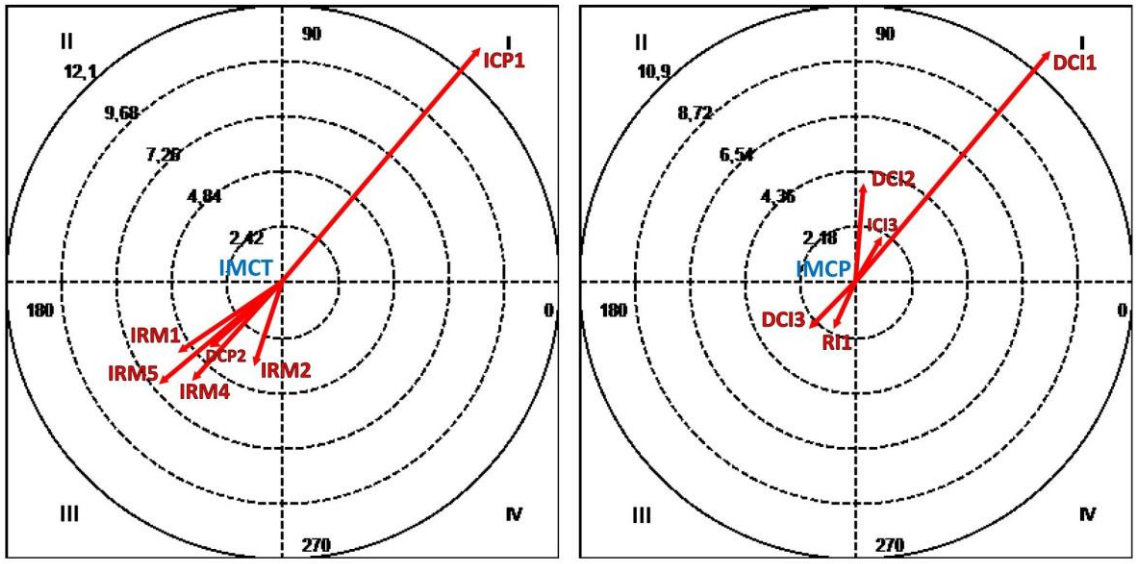
Figure 4. Vectorial maps of the statistically significant relationships for the therapist **(A)**, considering the communicative intent Global Exploration (CIGET) as focal behavior and CIS-P categories (Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1) Affective Avoidance (IRM2), Self-esteem Regulation Strategies (IRM3), Indirect Allusions (IRM4), and Acquiescence (IRM5)) as conditional behaviors, and for the group of depressed patients **(B)**, considering the communicative intent Global Exploration (CIGEP) as focal behavior and CIS-T categories (Direct Collaborative Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3)) as conditional behaviors. Under each map, polar coordinate analysis results are presented. The significance level was fixed at $p < 0.05$ (*).



Category	Q	Prosp.	Retrosp.	Ratio	Radius	Angle
DCP1	I	1.99	1.84	0.68	2.71*	42.78
DCP2	I	2.87	1.10	0.36	3.08*	20.92
ICP1	II	-0.02	1.03	1.00	1.03	91.34
ICP2	I	3.46	3.46	0.71	4.89*	45.01
ICP3	I	1.61	1.61	0.71	2.27*	45.01
DRM2	III	-0.35	-2.53	-0.99	2.55*	262.13
IRM1	III	-10.06	-5.01	-0.45	11.24*	206.49
IRM2	III	-4.24	-1.55	-0.34	4.52*	200.10
IRM3	I	1.22	1.22	0.71	1.72	45.01
IRM4	IV	1.82	-0.19	-0.10	1.83	354.06
IRM5	III	-1.71	-1.44	-0.64	2.23*	220.05

Category	Q	Prosp.	Retrosp.	Ratio	Radius	Angle
DCI1	III	-3.45	-6.21	-0.87	7.10*	240.92
DCI2	I	3.11	0.18	0.06	3.12*	3.29
DCI3	IV	0.65	-3.34	-0.98	3.40*	281.09
ICI1	IV	1.32	-1.31	-0.70	1.86	315.25
ICI2	I	1.83	1.04	0.50	2.10*	29.68
ICI3	III	-0.98	-4.55	-0.98	4.65*	257.81
RI1	III	-2.11	-3.47	-0.85	4.06*	238.71
RI3	III	-2.39	-1.95	-0.63	3.09*	219.18

Figure 5. Vectorial maps of the statistically significant relationships for the therapist **(A)**, considering the vocal mode Connected (VM2T) as focal behavior and CIS-P categories (Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1) Affective Avoidance (IRM2), Self-esteem Regulation Strategies (IRM3), Indirect Allusions (IRM4), and Acquiescence (IRM5)) as conditional behaviors, and for the group of depressed patients **(B)**, considering the vocal mode Emotional (VMEP) as focal behavior and CIS-T categories (Direct Collaborative Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3)) as conditional behaviors. Under each map, the results of the polar coordinate analysis are presented. The significance level was fixed at $p < 0.05$ (*).



Category	Q	Prosp.	Retrosp.	Ratio	Radius	Angle
DCP1	III	-0.80	-1.04	-0.79	1.31	232.40
DCP2	III	-1.76	-1.52	-0.65	2.32*	220.82
ICP1	I	4.75	5.57	0.76	7.32*	49.53
ICP2	I	0.80	0.14	0.17	0.82	9.61
ICP3	I	1.28	1.46	0.75	1.94	48.61
DRM2	II	-0.39	1.57	0.97	1.62	103.79
IRM1	III	-2.55	-1.69	-0.55	3.06*	213.52
IRM2	III	-0.66	-2.02	-0.95	2.12*	251.96
IRM3	IV	0.65	-0.62	-0.69	0.89	316.41
IRM4	III	-2.25	-2.25	-0.71	3.18*	225.00
IRM5	III	-2.95	-2.39	-0.63	3.79*	219.08

Category	Q	Prosp.	Retrosp.	Ratio	Radius	Angle
DCI1	I	7.74	9.10	0.76	11.95*	49.64
DCI2	I	0.25	3.88	1.00	3.89*	86.31
DCI3	III	-1.77	-1.77	-0.71	2.50*	225.00
ICI1	I	0.38	1.22	0.96	1.28	72.84
ICI2	II	-0.86	1.42	0.85	1.66	121.25
ICI3	I	1.14	1.71	0.83	2.05*	56.35
RI1	III	-0.90	-1.80	-0.89	2.01*	243.43
RI3	II	-0.96	1.45	0.84	1.74	123.36

Figure 6. Vectorial maps of the statistically significant relationships for the therapist **(A)**, considering the interruption mode Cooperative (IMCT) as focal behavior and CIS-P categories (Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1) Affective Avoidance (IRM2), Self-esteem Regulation Strategies (IRM3), Indirect Allusions (IRM4), and Acquiescence (IRM5)) as conditional behaviors, and for the group of depressed patients **(B)**, considering the interruption mode Cooperative (IMCP) as focal behavior and CIS-T categories (Direct Collaborative Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3)) as conditional behaviors. Under each map, the results of the polar coordinate analysis are presented. The significance level was fixed at $p < 0.05$ (*).

Supplementary Material

Supplementary Appendix I. Description of the CMASP dimensions and categories (retrieved from Del Giacco et al., 2019)

Dimension	Categories	Description	Code
Verbal Mode-Structural Form (VeM-SF) It concerns the formal structure of the speech by which the speaker expresses the verbal mode (it corresponds to the propositional component of the speaker's speech).	Courtesies	The speaker's speech is in the form of terms expressing receptiveness to the communication according to social conventions (e.g., *"Good morning"*, *"Goodbye"*, *"Thank you"*, *"Your welcome"*).	SF1
	Assertion	The speaker's speech expresses something he/she considers true, or it refers to a specific state of things (e.g., *"I feel empty"*, *"I can hardly concentrate"*).	SF2
	Question	The speaker's speech is in the form of a request for specific information (e.g., *"Would you like to tell me the problem?"*, *"And this laziness hum for example in what…"*, *"So, you're not Italian…"*).	SF3
	Agreement	The speaker's speech recognizes the truth of the other's statement (e.g., *"Mm-hm"*, *"Right"*, *"Yes"*, *"Of course"*, *"Perhaps"*, *"All right"*).	SF4
	Denial	The speaker's speech refuses to recognize (or rejects) the truth of something said by the other (e.g., *"No"*, *"In no way"*, *"Absolutely no"*).	SF5
	Direction	The speaker's speech encourages the listener towards cognitive, emotional, or behavioral actions by guiding the other's behavior (e.g., *"Tell me what's wrong"*).	SF6
Verbal Mode-Communicative Intent (VeM-CI) It concerns the underlying intention of the speaker's speech (it corresponds to the performative component of communication).	Acknowledging	The speaker's communicative intent is to take the other's point of view about the other's experience while presuming no knowledge of it (presuming knowledge of the speaker's experience only), (e.g., *"Mm-hm"*, *"Ok"*; *"Exactly"*, *"Mh"*, *"Right"*, *"Good morning"*, *"Goodbye"*, *"Thank you"*, *"Your welcome"*).	CI1
	Informing	The speaker's communicative intent is to supply (or request for), information about the here and now of psychotherapy in the form of data, facts, resources, theory, and assessment parameters. The information may be specifically related to the counseling process, therapist behavior, or arrangements (time, place, fee,	CI2

	and so on), (e.g., T: *"We'll meet once again, and then we'll take stock of the situation"*).	
Exploring	The speaker's communicative intent is to ask for information about knowledge, events, feelings, or the causes of content or behavior. (e.g., T: *"Would you like to tell the reason you are here?*"; T: *"How was your move to Padua?"*). Moreover, the speaker may provide the information required by the other focusing on knowledge, events or feelings (e.g., P: *"My parents are divorced"*); he/she may talk about new contents in the form of stories as well as descriptions of past or present experiences (e.g., P: *"When I was a child, I liked to sleep with my parents"*); he/she may describe a feeling or emotional state (e.g., P: *"I've no energy and I always feel sad"*).	CI3
Deepening	The speaker's communicative intent is to deepen the description, presentation, or discovery of some contents. The speaker may realize it: a) by verifying the truthfulness of an assertion made by the other which is questioned (e.g., P: *"I got so mad when he said to me those words, but you I'm fine on my own"* – T: *"So, don't you care of what the others say?"*); b) by correcting the comprehension of the other (e.g., T: *"If I've understood correctly, it sounds like your problem is due to relationships"* – P: *"No, the problem is only with my mother"*); c) by corroborating something stated (an opinion, facts, or new contents given or requested by the other) (e.g., T: *"So, you're one of the most aged"* – P: *"Yes, I was selected for my age"*); d) by requesting for information about the content of the other's communication (e.g., P: *"I've called him many times but…nothing"* – T: *"In other words, hasn't he called you back anymore?"*).	CI4
Focusing	The speaker's communicative intent is to direct the attention and efforts towards a specific topic of conversation. The speaker may realize it: a) by introducing or addressing a topic (e.g., P: *"Well, I would like to start with the reasons"*); b) by returning to a topic (e.g., T: *"So, getting back to what we were talking about"*); c) by summarizing a content (e.g., T: *"Today we have spoken about many things"*); d) by defining the limits of a given content (e.g., T: *"I'd like to focus on the relationship with your boyfriend"*).	CI5
Temporizing	Speaker's communicative intent is to assume a suspended position as regards the other's communication. This intent allows the speaker to get in touch with his/her thoughts and feelings or, on the contrary, to avoid facing the requests	CI6

1
2

		of the previous speech, momentarily (e.g., T: *"How did you feel?...How.."* – P: *"How I felt…*").	
	Attuning	The speaker's communicative intent is to understand or be understood by the other. He/she may realize it: a) by verifying his/her comprehension with a careful examination of what he/she understood about the other's communication (e.g., T: *"Let me get this straight, you're telling me your mom doesn't know you smoke"*); b) by telling the other how his/her actions or thoughts are being understood (e.g., T: *"In other words, you think your mood is due to your parents' divorce"*); c) by communicating to the other that his/her actions or thoughts are understood (e.g., T: *"Now I see, in other words, you're a sophomore in University"*). Moreover, to express attuning, the speaker may harmonize with the other showing an emotional connection to his/her reality (e.g., T: *"I imagine it's a difficult situation"*). Finally, the speaker may perform this communicative intent by providing feedback: a) to validate or discourage the other's behaviors, meanings or feelings (e.g., T: *"Don't worry, go on"*); b) to show the other's affections or tell the emotional impact that the other had on the speaker (e.g., T: *"I'm making you angry"*).	CI7
	Resignifying	The speaker's communicative intent is: a) to offer a new perspective on content (e.g., T: *"Maybe, there is also the fear of not being understood"*); b) to connect contents to one another (e.g., P: *"I realize that I tend to get angry at my boyfriend like my father"*); c) to recognize or establish a psychological working model (e.g., T: *"You have a very rigid way of facing things*); d) to question a content (e.g., T: *"Well, but it seems you're afraid to understand you can do it on your own"*).	CI8
Vocal Mode (VoM) It concerns the underlying intentions of the speaker's speech associated with both a peculiar combination of acoustic parameters (tone, intensity, duration, and timbre) and a specific way	Reporting	The listener has the impression of a detached speech emitted by the speaker like he/she is reporting, narrating, or exploring contents without any emotional involvement. The speaker's voice seems to attribute a detached quality to speech, and emotional disconnection (and/or emotional distance) seems to characterize what is being said. A typical vocal parameter of this category is the repetitive prosody (concerning the tone) which, in turn, presents an agogic accent (concerning the tone) and high variation in the dynamic (concerning the intensity). Finally, the speech is usually characterized by fluid pace (concerning the duration).	VM1

such a speech affects the listener of communicative exchange, regardless of the verbal content. The "emotional" categories building follows the principle of universal emotions recognition.

Connected	The listener has the impression of an elaborative speech emitted by the speaker and oriented towards the other. The speaker's voice seems to attribute to speech the quality of being connected and/or attuned to oneself and the other, giving the latter the space to intervene. The distinctive vocal parameters of this category are the anti-cadence, characterizing the end of the sentence expressed, and agogic accent (concerning the tone) with a soft-vocal attack (concerning the duration). Finally, the pace may present pauses and loss of fluidity (e.g., extensions, repetitions and so on), concerning the duration.	VM2
Declarative	The listener has the impression of a secure, instructive, engaged or convinced talk emitted by the speaker. The speaker's voice seems to attribute the quality of certainty and conviction to the speech like he/she is instructing (or explaining to) the other, or like he/she seems very sure of (engaged in) what he/she is saying. The other has a little space for intervening. The peculiar vocal parameters of this category are the suspended or anti-cadence, characterizing the end of the sentence expressed, and agogic and/or dynamic accent (concerning the tone) with a hard-vocal attack (concerning the intensity). The pace is usually fluid (concerning the duration) while the intensity may present an average volume increased (concerning the intensity).	VM3
Introspective	The listener has the impression of an introverted speech emitted by the speaker. The speaker's voice seems to attribute to speech the quality of being directed towards oneself like he/she is connected with one's own internal world or in a dialog with oneself. The distinctive vocal parameters of this category are an average volume decreased and dynamics decrescendo (concerning the intensity). Sometimes, this vocal mode may present a reduced speed and long pauses (concerning the duration).	VM4
Emotional-Positive	The listener has the impression of a positive-emotional speech emitted by the speaker. The speaker's voice seems to attribute positive affection and/or positive emotional strength to speech. This vocal mode expresses the speaker's positive emotion (e.g., cheerfulness, happiness, sweetness, excitement, charm, understanding) modulating the verbal component of the speech (e.g., a laugh, shrill or sweet voice may accompany it) or, on the contrary, the effort to contain the emotion. A typical parameter of this category is the timbre, characterizing speech with variation in color and bright (Clear/Bright and Clear/Opaque),	VM5

		associated with changes in the sounding system (e.g., the shape that mouth assumes when someone smiles) expressing positive affection. Moreover, this category is often associated with a soft-vocal attack.	
	Emotional-Negative	The listener has the impression of a negative-emotional speech. The speaker's voice seems to attribute the quality of negative emotion and/or negative emotional strength to speech. This vocal mode expresses the speaker's negative emotion (e.g., anger, sadness, fear, tension) modulating the verbal aspect of the speech (e.g., sobbing, broken voice, trembling voice, snort may accompany it) or, on the contrary, the effort to contain the emotion. A typical parameter of this category is the timbre, characterizing speech with variation in color and bright (Clear/Bright, Dark/Bright, and Dark/Opaque), associated with changes in the sounding system (e.g., the nasal congestion when someone cries, or the tension of the vocal cord when someone is nervous) expressing negative affection. Finally, an increased volume and/or a non-fluid pace may characterize this vocal mode.	VM6
	Pure Positive Emotion	The speaker's voice quality expresses a positive emotional state (e.g., doing a half-smile, laughing) without uttering any verbal content. The speaking turn is characterized only by vocalizations, due to changes in the sounding system, expressing a positive emotion and no utterance precedes or follows.	VM7
	Pure Negative Emotion	The speaker's voice quality expresses a negative emotional state (e.g., crying, sighing) without uttering any verbal content. The speaking turn is characterized only by vocalizations, due to changes in the sounding system, expressing negative emotion and no utterance precedes or follows.	VM8
Interruption Mode (IM) It concerns the interrupter's behaviors, implemented to take the floor (successfully or not), for supporting or hindering the communicative	Cooperative-Concurrence	This kind of interruption enables the interrupter to show agreement, validation, understanding, compliance, or support to the current speaker. Sometimes, the interruption also aims to extend or elaborate on the idea presented by the speaker.	IM1
	Cooperative-Assistance	This interruption mode enables the interrupter to sustain the current speaker by providing a word, phrase, sentence, or idea when the interrupter perceives the current speaker needs help.	IM2

flow of the current speaker. These modes analyze both the potential violations of the transition relevance place (TRP) by the interrupter, the impact the interruption has on the other participant, and the "reaction" that this last one implements towards the interrupter. Each mode is defined by the time and manner in which the interrupter takes the floor and by the objective of the interruption.

Cooperative-Clarification	The interrupter usually implements this kind of interruption mode to understand the message sent by the current speaker. The ultimate goal of the interruption is to make sure that the current speaker clarifies or explains a previously expressed piece of information the listener is dubious. In other words, when the listener is unclear about a piece of information the current speaker has just expressed, he/she interrupts this last one to request clarifications.	IM3
Cooperative-Exclamation	The interrupter implements this mode to show rapport and coparticipant involvement by expressing surprise to the previous utterance of the speaker.	IM4
Intrusive-Disagreement	The interrupter intervenes to show disagreement about what the speaker is saying and wants to correct or express his/her opinion immediately.	IM5
Intrusive-Floor taking	The interrupter intervenes to develop the topic of the current speaker by taking over the floor from this last one. Generally, the interrupter does not intend to change the topic of the speaker, but only express his/her opinion, idea, thoughts, by taking the floor.	IM6
Intrusive-Competition	This kind of interruption is characterized by a simultaneous speaking in which both participants interrupt each other to complete their speech, generating a real fight for the floor. In such an interruption, the one who first interrupted manages to take the floor and to prevent the other to end his/her speech.	IM7
Intrusive-Topic change	The interrupter intervenes to change the topic by cutting the speech of the current speaker. The interrupter is somewhat more aggressive than in the floor-taking situation because he/she must accomplish the task of changing the topic.	IM8
Intrusive-Tangentialization	In this kind of interruption, the listener interrupts to summarize the information sent by the current speaker, reflecting his/her awareness. In other words, since the interrupter does not want to listen to the same information repeatedly, then he/she intervenes to summarize one or more pieces of the previously expressed information; in this way, he/she minimizes the message sent by the current speaker. Tangentialization prevents the interrupter from listening to an unwanted piece of information because either the information has been presented previously or the listener through other channels already knows the information.	IM9

Neutral interruption	This kind of interruption mode is neither cooperative nor intrusive (it does not violate the principles of turn change). It occurs when the speaker pauses or stops the talk, creating uncertainty about his/her intention to continue the speech, and the interrupter takes the floor and starts to talk. The central aspect of this kind of interruption is that the speaker's speech appears incomplete due to his/her stop.	IM10
Failed Interruption	A simultaneous speech characterizes the present interruption mode, but there is no turn exchange as in the IM Intrusive-Competition. It occurs when the listener tries to intervene interrupting, but he/she stops before finishing the intruding speech since the current speaker continues talking. This last one ignores the interrupter and continues talking until he/she finishes. In other cases, the interrupter stops before completing his/her intruding speech since he/she understands the speaker wants to continue talking.	IM11

1

References

Del Giacco, L., Salcuni, S., and Anguera, M. T. (2019). The Communicative Modes Analysis System in Psychotherapy from mixed methods framework: Introducing a new observation system for classifying verbal and non-verbal communication. *Front. Psychol*. 10:782. doi: 10.3389/fpsyg.2019.00782

Supplementary Material

Supplementary Appendix II. Scales, subscales, and categories of the Collaborative Interactions Scale-Revised (adapted from Colli et al., 2014)

Scale	Description	Code
CIS-Therapist (CIS-T)		
Form of Therapist Interventions (TI)		
Supportive	Interventions aiming to sustain the patient or reinforce his behavior/functioning.	TI1
Explicative	Interventions aiming to explain something to the patient.	TI2
Explorative	Interventions aiming to explore or stimulate the patient's elaboration.	TI3
Expressive	Interventions in which is predominant the interpretative stance by the therapist (e.g. interpretations, confrontations, and observations).	TI4
Direct Collaborative Interventions (DCI)		
Task/Goal	The therapist focuses on tasks/goals of therapy.	DCI1
Affects	The therapist focuses on desires and wishes toward the therapist and/or the therapy and/or focuses on feeling and/or thoughts, help patients in makes clear intensity or quality of his/her feelings or attitude toward the therapist or the therapy.	DCI2
Meaning	The therapist focuses on the meaning of an episode with the patient, connects an event with the patient to other issues or identify a pattern in the relationship with the patient.	DCI3
Meta Communication	The therapist talks about his experience in relationship with the patient in order to overcome an impasse, to repair an alliance rupture, or to improve the collaboration level.	DCI4
Indirect Therapist Interventions (ICI)		
Facts	The therapist focuses on significant facts and/or introduces topics or elements within a topic.	ICI1
Affects	The therapist focuses on feelings and/or thoughts, helps patients to make clear intensity or quality of his/her feelings or attitude.	ICI2

Meaning	The therapist talks about the meaning of events or connects a topic to a topic or to a schema, etc.	ICI3
Rupture Interventions (RI)		
Linguistic Avoidance	The therapist changes the offhand topic.	RI1
Affective Avoidance	Therapist talks in technical jargon or intellectualizes. Therapist interventions are not focused on patient's concrete experience.	RI2
Hostility	The therapist is hostile, sarcastic and/or seems to compete with the patient.	RI3
Perseveration	The therapist perseveres on a topic excessively. He is not tuned with the patient's answers.	RI4
Lack of Clarity	Therapist interventions are confused about the formal or meaning level. Interventions are not easy to understand.	RI5
CIS-Patient (CIS-P)		
Direct Collaborative Processes (DCP)		
Negotiation Tasks/Goals	The patient talks about tasks and/or goals of therapy in order to negotiate it with the therapist.	DCP1
Affects	Patients talk about her/his needs in relation to therapy and/or therapist and/or about his/her feeling, thoughts, makes clear intensity and/or quality of his/her feelings and/or attitude toward the therapist and/or the therapy.	DCP2
Meaning	The patient talks about the meaning of an event of the therapeutic relationship, and/or connects an episode with the therapist or other episodes outside therapy and/or to a schema.	DCP3
Indirect Collaborative Processes (ICP)		
Facts	The patient talks about new significant facts, introduces a topic or elements within a topic.	ICP1
Affects	The patient talks about his/her feeling and/or thoughts, makes clear intensity or quality of his/her feelings or attitude.	ICP2
Meaning	The patient talks about the meaning of events or connects a topic to a topic or to a schema, etc.	ICP3
Direct Rupture Markers (DRM)		
Task/Goal	The patient doesn't agree with the therapist about therapy tasks and/or goals.	DRM1

Relationship	The patient criticizes the therapist as a person and/or for his/her competence, feels uncomfortable with the therapeutic relationship.	DRM2
Discouragement	Patient doubts about feeling better and/or being in therapy. He complains about the lack of progress.	DRM3
Parameters	The patient complains about parameters of therapy (e.g., session time, fee).	DRM4
Indirect Rupture Markers (IRM)		
Linguistic Avoidance	The patient uses linguistic avoidance (talks in a wordy manner and/or spends an inordinate amount of time talking about other people and their doings and/or overly elaborates non-significant stories and so on, changes topic or tangentially answers to therapist intervention, short answers to therapist open question).	IRM1
Affective Avoidance	The patient makes use of emotional withdrawal strategies (denies evident affective state, intellectualizes about his/her inner experience).	IRM2
Self-esteem Regulation Strategies	The patient uses self- esteem regulation strategies (self-enhancing strategies and/or self-justifying statements and/or is self-critical or self-blaming).	IRM3
Indirect Allusions	The patient alludes to negative sentiments and/or concerns about the therapeutic relationship through a thematically linked discussion of out-of-session events or relationships.	IRM4
Acquiescence	Patient interacts in an acquiescent manner.	IRM5

1 *Note.* The authors granted permission to use the CIS-R scheme.

Reference

Colli, A., Gentile, D., Condino, V., and Lingiardi, V. (2014). *Collaborative Interactions Scale Revised (CIS-R). Coding Manual*. Rome, IT: Sapienza University.

Main Results

Below, the main results of the published articles will be presented in line with the objectives of this doctoral thesis. The first phase of this research (**study 1**), which consisted in identifying the communicative behaviors of the therapist and depressed patients according to a single unifying theory, involved a two-way process between the consolidation of the theoretical framework on the therapeutic discourse as a dynamic communicative field and the observation of the therapeutic process reality. By applying the indirect observational methodology through a Nomothetic/Follow-up/Multidimensional design (N/F/M; Blanco-Villaseñor et al., 2003) and the QUAL-QUAN-QUAL process (Anguera, 2020), it was possible to analyze the communicative behaviors emerging in weekly individual psychotherapies with ten depressed patients (five men and five women; age M = 26 years, SD = 3.91, Min = 22 years, Max = 32 years), who self-referred to the Dynamic Psychotherapy Service of the University of Padua (Italy) and were treated by the same therapist with experience in the brief focal approach. Precisely, for each patient, the study considered the audio recordings and verbatim transcripts of the first three sessions of psychotherapy (50 minutes each) for a total of 30 sessions. Depressive symptoms were identified through pre-assessment screening using Beck Depression Inventory-II (BDI-II; Ghisi et al., 2006) and Symptom Checklist-90-Revised (SCL-90-R; Sarno et al., 2011). The initial observation of three randomly selected clinical cases by using the two main tools of the observational methodology –the field format and category systems (Anguera, Portell, et al., 2018)– and adapting previous studies (J. A. Goldberg, 1990; Hill, 1978; Krause et al., 2009; Li, 2001; Murata, 1994; Tomicic, Guzmán, et al., 2015; Stiles, 1992; Valdés et al., 2005, 2010) resulted in the production of the Communicative Modes Analysis System in Psychotherapy (CMASP; Table 2) and the training and coding manual (Del Giacco et al., 2018; see the free English translation of the manual in the Appendix).

Table 2

Structure of the Communicative Modes Analysis System (CMASP)

Verbal Mode Structural Form (VeM-SF)	Verbal Mode Communicative Intent (VeM-CI)	Vocal Mode (VoM)	Interruption Mode (IM)
Courtesies (SF1)	Acknowledging (CI1)	Reporting (VM1)	Cooperative-Concurrence (IM1)
Assertion (SF2)	Informing (CI2)	Connected (VM2)	Cooperative-Assistance (IM2)
Question (SF3)	Exploring (CI3)	Declarative (VM3)	Cooperative-Clarification (IM3)
Agreement (SF4)	Deepening (CI4)	Introspective (VM4)	Cooperative-Exclamation (IM4)
Denial (SF5)	Focusing (CI5)	Emotional-Positive (VM5)	Intrusive-Disagreement (IM5)
Direction (SF6)	Temporizing (CI6)	Emotional-Negative (VM6)	Intrusive-Floor taking (IM6)
	Attuning (CI7)	Pure Positive Emotion (VM7)	Intrusive-Competition (IM7)
	Resignifying (CI8)	Pure Negative Emotion (VM8)	Intrusive-Topic change (IM8)
			Intrusive-Tangentialization (IM9)
			Neutral interruption (IM10)
			Failed Interruption (IM11)

This ad hoc indirect observation instrument identifies and classifies turn by turn the communicative behaviors of the therapist and depressed patients, reformulated according to the performative function of language (Searle, 1969/2017), analyzing the audio recordings and transcripts of psychotherapy sessions. It consists of four non-mutually exclusive dimensions (Verbal Mode-Structural Form, Verbal Mode-Communicative Intent, Vocal Mode, Interruption Mode) applicable together or separately, each characterized by specific axial criteria and a set of exhaustive and mutually exclusive categories (E/ME; Anguera, Portell, et al., 2018) for a total of 33 categories. One and only one category of each dimension is attributed to the therapist's or patient's turns, based on the predominant behavior emerging within it. The instrument has excellent reliability and data quality, as demonstrated by the calculation of intra-observer reliability through Cohen's κ (Cohen, 1960) and inter-observer reliability through Krippendorff's canonical agreement coefficient (*Cc*; Krippendorff, 2018) and Cohen's κ on the codes of 503 speaking turns by four trained independent judges (two sessions randomly selected from the remaining seven clinical cases). Table 3 shows almost perfect intra-observer reliability of CMASP at the global, dimensional, and categorical level for Cohen's $\kappa \geq 0.81$ (Cohen, 1960) through the SDIS-GSEQ program (v. 4.1.3; Bakeman & Quera, 2011). On the other hand, Table 4 shows the inter-observer reliability of CMASP that is almost perfect at the global and dimensional level for $Cc \geq 81\%$ (Krippendorff, 2018) through the HOISAN program (v. 1.6.3.3.4; Hernández-Mendo et al., 2012), while it varies from substantial to almost perfect al categorical level for $61\% \leq \kappa < 81\%$ and $\kappa \geq 81\%$ (Cohen, 1960) through the SDIS-GSEQ program (v. 4.1.3; Bakeman & Quera, 2011). Finally, the CMASP was applied to the sessions of the remaining seven clinical cases for a total of 6,232 speaking turns (3,121 therapist turns + 3,111 patient turns; see the example in Table 5), obtaining a matrix of concurrent and event-based data for each line (Bakeman, 1978) whereby it was possible to determine the trend of the various communicative behaviors within psychotherapies (Table 6).

Table 3

Intra-Observer Reliability of the CMASP

CMASP	Session 1 (n = 220)	Session 2 (n = 283)	*M*	*SD*
Overall	0.97	0.99	0.98	0.01
Verbal Mode-Structural Form (VeM-SF)	0.97	0.99	0.98	0.01
Courtesies (SF1)	1.00	TANC		
Assertion (SF2)	0.93	0.98	0.96	0.04
Question (SF3)	0.94	0.97	0.96	0.02
Agreement (SF4)	0.93	0.99	0.96	0.04
Denial (SF5)	TANC	1.00		
Direction (SF6)	TANC	TANC		
Verbal Mode-Communicative Intent (VeM-CI)	0.93	0.98	0.96	0.04
Acknowledging (CI1)	0.99	0.99	0.99	0.00
Informing (CI2)	0.87	TANC		
Exploring (CI3)	0.88	0.93	0.91	0.04
Deepening (CI4)	0.70	0.95	0.83	0.18
Focusing (CI5)	0.69	0.95	0.82	0.18
Temporizing (CI6)	TANC	TANC		
Attuning (CI7)	1.00	1.00	1.00	0.00
Resignifying (CI8)	1.00	0.92	0.96	0.06
Vocal Mode (VoM)	0.97	0.94	0.96	0.02
Reporting (VM1)	1.00	TANC		
Connected (VM2)	0.91	0.93	0.92	0.01
Declarative (VM3)	0.96	0.91	0.94	0.04
Introspective (VM4)	0.71	1.00	0.86	0.21
Emotional-Positive (VM5)	0.91	0.90	0.91	0.01
Emotional-Negative (VM6)	0.95	0.66	0.81	0.21
Pure Positive Emotion (VM7)	1.00	1.00	1.00	0.00
Pure Negative Emotion (VM8)	TANC	TANC		
Interruption Mode (IM)	0.91	0.96	0.94	0.04
Cooperative-Concurrence (IM1)	0.95	0.97	0.96	0.01
Cooperative-Assistance (IM2)	TANC	1.00		
Cooperative-Clarification (IM3)	0.83	0.95	0.89	0.08
Cooperative-Exclamation (IM4)	TANC	1.00		
Intrusive-Disagreement (IM5)	1.00	1.00	1.00	0.00
Intrusive-Floor taking (IM6)	TANC	.91		
Intrusive-Competition (IM7)	TANC	1.00		
Intrusive-Topic change (IM8)	TANC	TANC		
Intrusive-Tangentialization (IM9)	TANC	TANC		
Neutral interruption (IM10)	0.94	0.80	0.87	0.10
Failed Interruption (IM11)	TANC	0.89		

Note. N = 503 turns. Intra-judge reliability (Cohen's κ); $\kappa < 0.61$ (*insufficient*), $0.61 \leq \kappa < 0.81$ (*substantial*), $\kappa \geq 0.81$ (*satisfactory*); TANC, Total Agreement in the Not Coded Category.

Table 4

Inter-Observer Reliability of the CMASP

CMASP	Session 1 (n = 220)	Session 2 (n = 283)	*M*	*SD*
Overall	93**	94**	93.50**	0.71**
Verbal Mode-Structural Form (VeM-SF)	95**	95**	95.00**	0.00*
Courtesies (SF1)	96*	TANC		
Assertion (SF2)	93*	92*	92.50*	0.01*
Question (SF3)	95*	94*	94.50*	0.01*
Agreement (SF4)	92*	95*	93.50*	0.02*
Denial (SF5)	TANC	79*		
Direction (SF6)	TANC	TANC		
Verbal Mode-Communicative Intent (VeM-CI)	87**	92**	89.50**	3.54**
Acknowledging (CI1)	93*	97*	95.00*	0.03*
Informing (CI2)	65*	TANC		
Exploring (CI3)	86*	86*	86.00*	0.00*
Deepening (CI4)	75*	82*	78.50*	0.05*
Focusing (CI5)	79*	82*	80.50*	0.02*
Temporizing (CI6)	TANC	TANC		
Attuning (CI7)	70*	90*	80.00*	0.14*
Resignifying (CI8)	100*	82*	91.00*	0.13*
Vocal Mode (VoM)	93**	87**	90.00**	4.24**
Reporting (VM1)	100*	TANC		
Connected (VM2)	87*	89*	88.00*	0.01*
Declarative (VM3)	75*	77*	76.00*	0.01*
Introspective (VM4)	80*	100*	90.00*	0.14*
Emotional-Positive (VM5)	83*	85*	84.00*	0.01*
Emotional-Negative (VM6)	88*	61*	74.50*	0.19*
Pure Positive Emotion (VM7)	100*	100*	100.00*	0.00*
Pure Negative Emotion (VM8)	TANC	TANC		
Interruption Mode (IM)	81**	92**	86.50**	7.78**
Cooperative-Concurrence (IM1)	89*	96*	92.50*	0.05*
Cooperative-Assistance (IM2)	TANC	100*		
Cooperative-Clarification (IM3)	100*	85*	92.50*	0.11*
Cooperative-Exclamation (IM4)	TANC	100*		
Intrusive-Disagreement (IM5)	87*	83*	85.00*	0.03*
Intrusive-Floor taking (IM6)	TANC	89*		
Intrusive-Competition (IM7)	TANC	100*		
Intrusive-Topic change (IM8)	TANC	TANC		
Intrusive-Tangentialization (IM9)	TANC	TANC		
Neutral interruption (IM10)	93*	81*	87.00*	0.08*
Failed Interruption (IM11)	TANC	90*		

Note. N = 503 turns. Scores in %; * inter-judge reliability (Cohen's κ); ** inter-judge reliability (Krippendorff's *Cc*); κ and *Cc* < 61% (*insufficient*), 61% ≤ κ and *Cc* < 81% (*substantial*), κ and *Cc* ≥ 81% (*satisfactory*); TANC, Total Agreement in the Not Coded Category.

Table 5

Coding Example Resulting From the CMASP Application

Date: 13/11/2016
Patient: D.
Therapist: L. F.
Session no.: 1

Turn	Role	Transcript	VeM-SF	VeM-CI	VoM	IM
361	T	Yes, yeah. Have you ever worked? some work, or…//	SF3	CI5	VM2	
362	P	//Yes, yes, yes. I worked for the municipality of Milan, where I live, as a census operator	SF2	CI3	VM2	IM10
363	T	Mm-hmm.	SF4	CI1		
364	P	in, in 2014. So, even on that occasion, always questionnaires (laughs), um//	SF2	CI3	VM5	
365	T	//(laughs) So at, at the people's house doin-//	SF2	CI4	VM2	IM3
366	P	//Yes, yes, yes, both there in the municipality and going home, I was helping with the compilation and retrieval for people who could not bring it	SF2	CI4	VM2	IM1
367	T	Yeah	SF4	CI1		
368	P	Um… even that, working with people has its pros and cons	SF2	CI3	VM2	
369	T	Of course	SF4	CI1		
370	P	but it was, it allowed me to save up some money…	SF2	CI3	VM2	

Note. T, Therapist; P, Patient; //, interruption; empty cell, category not present. Verbal Mode-Structural Form (VeM-SF): SF2, Assertion; SF3, Question; SF4, Agreement. Verbal Mode-Communicative Intent (VeM-CI): CI1, Acknowledging; CI3, Exploring; CI4, Deepening; CI5, Focusing. Vocal Mode (VoM): VM2, Connected; VM5, Emotional Positive. Interruption Mode (IM): IM1, Cooperative-Concurrence; IM3, Cooperative-Clarification; IM10, Neutral Interruption. The participants' sensitive data were replaced to guarantee confidentiality, but without altering the intrinsic properties of the speech.

Table 6

Descriptive Statistics of Communicative Behaviors

CMASP	*f*	%
Verbal Mode-Structural Form (VeM-SF)	5,748	92.23
Courtesies (SF1)	52	0.90
Assertion (SF2)	3,299	57.39
Question (SF3)	752	13.08
Agreement (SF4)	1,516	26.37
Denial (SF5)	80	1.39
Direction (SF6)	49	0.85
Not coded	484	7.77
Verbal Mode-Communicative Intent (VeM-CI)	5,171	82.97
Acknowledging (CI1)	1,275	24.66
Informing (CI2)	196	3.79
Exploring (CI3)	2,285	44.19
Deepening (CI4)	568	10.98
Focusing (CI5)	181	3.50
Temporizing (CI6)	26	0.50
Attuning (CI7)	227	4.39
Resignifying (CI8)	413	7.99
Not coded	1,061	17.03
Vocal Mode (VoM)	3,832	61.49
Reporting (VM1)	10	.26
Connected (VM2)	1,521	39.69
Declarative (VM3)	214	5.58
Introspective (VM4)	151	3.94
Emotional-Positive (VM5)	965	25.18
Emotional-Negative (VM6)	588	15.34
Pure Positive Emotion (VM7)	333	8.69
Pure Negative Emotion (VM8)	50	1.30
Not coded	2,400	38.51
Interruption Mode (IM)	1,144	18.36
Cooperative-Concurrence (IM1)	314	27.45
Cooperative-Assistance (IM2)	32	2.80
Cooperative-Clarification (IM3)	83	7.26
Cooperative-Exclamation (IM4)	18	1.57
Intrusive-Disagreement (IM5)	50	4.37
Intrusive-Floor taking (IM6)	185	16.17
Intrusive-Competition (IM7)	94	8.22
Intrusive-Topic change (IM8)	19	1.66
Intrusive-Tangentialization (IM9)	3	0.26
Neutral interruption (IM10)	286	25.00
Failed Interruption (IM11)	60	5.24
Not coded	5,088	81.64

Note. N = 6,232 speaking turns.

The second phase (**study 2**) consisted of investigating those communicative modes used by the therapist and depressed patients that the literature identifies as factors positively influencing the construction of the early therapeutic alliance during the mutual regulation processes. In particular, after an in-depth study of literature (Cafaro et al., 2016; Dagnino et al., 2012; Krause et al., 2016; Li et al., 2005; Oka et al., 2020; Tomicic, Martínez, & Krause, 2015), the following communicative behaviors were detected for each participant:

- Verbal structure: *asking* (therapist) and *asserting* (patient)
- Communicative intent: *exploring* (therapist and patient)
- Vocal quality: *elaborating* (therapist) and *expressing emotions* (patient)
- Interruption: *cooperatively interrupting* (therapist and patient)

The observational methodology was applied to the sessions of the seven clinical cases through the Nomothetic/Follow-up/Multidimensional (N/F/M; Blanco-Villaseñor et al., 2003) and the QUAL-QUAN-QUAL process (Anguera, 2020). The code matrix resulting from the CMASP application has been reused. Moreover, the Collaborative Interactions Scale-Revised (CIS-R; Colli et al., 2014), an observational instrument with theoretical (or deductive) categories (Mörtl & Gelo, 2015), was used for the turn-by-turn evaluation of ruptures and repairs of the therapeutic alliance. It consists of two main scales, the Collaborative Interactions Scale-Therapist (CIS-T), which evaluates the therapist's positive and negative contributions to the therapeutic relationship, and the Collaborative Interactions Scale-Patient (CIS-P), which evaluates the patient's rupture and collaborative processes. Each dimension includes a set of mutually exclusive and deductive categories derived from Safran and Muran's (2003) theory of therapeutic alliance, for a total of 31 categories constituting the CIS-R (Table 7).

Table 7

Structure of the Collaborative Interactions Scale-Revised (CIS-R)

CIS-Therapist	CIS-Patient
Form of Therapist Interventions (TI)	Direct Collaborative Processes (DCP)
Supportive (TI1)	Negotiation Tasks/Goals (DCP1)
Explicative (TI2)	Affects (DCP2)
Explorative (TI3)	Meaning (DCP3)
Expressive (TI4)	Indirect Collaborative Processes (ICP)
Direct Collaborative Interventions (DCI)	Facts (ICP1)
Task/Goal (DCI1)	Affects (ICP2)
Affects (DCI2)	Meaning (ICP3)
Meaning (DCI3)	Direct Rupture Markers (DRM)
Meta Communication (DCI4)	Task/Goal (DRM1)
Indirect Therapist Interventions (ICI)	Relationship (DRM2)
Facts (ICI1)	Discouragement (DRM3)
Affects (ICI2)	Parameters (DRM4)
Meaning (ICI3)	Indirect Rupture Markers (IRM)
Rupture Interventions (RI)	Linguistic Avoidance (IRM1)
Linguistic Avoidance (RI1)	Affective Avoidance (IRM2)
Affective Avoidance (RI2)	Self-esteem Regulation Strategies (IRM3)
Hostility (RI3)	Indirect Allusions (IRM4)
Perseveration (RI4)	Acquiescence (IRM5)
Lack of Clarity (RI5)	

Note. Adapted from Colli et al. (2014).

Before data collection resulting from the CIS-R application, a data quality control was performed through the inter-rater reliability with SPSS v. 23.0 (equivalent to the inter-observer reliability of the observational method), which was calculated on the codes assigned by four trained independent judges to 503 speaking turns (two sessions randomly selected). This control showed good reliability of CIS-R (average $\kappa = 0.79$ for $0.61 \leq \kappa < 0.81$; Cohen, 1960); therefore, the instrument was applied to the sessions of the seven clinical cases (see the example in Table 8), obtaining a catalog of sequential and event-based data for each line (Bakeman, 1978).

Table 8

Coding Example Resulting From the CIS-R Application

Date: 13/11/2016
Patient: D.
Therapist: L. F.
Session no.: 1

Turn	Role	Transcript	CIS-T	CIS-P
361	T	Yes, yeah. Have you ever worked? some work, or…//	RI1	
362	P	//Yes, yes, yes. I worked for the municipality of Milan, where I live, as a census operator		ICP1
363	T	Mm-hmm.		
364	P	in, in 2014. So, even on that occasion, always questionnaires (laughs), um//		ICP1
365	T	//(laughs) So at, at the people's house doin-//	ICI1	
366	P	//Yes, yes, yes, both there in the municipality and going home, I was helping with the compilation and retrieval for people who could not bring it		ICP1
367	T	Yeah		
368	P	Um… even that, working with people has its pros and cons		ICP1
369	T	Of course		
370	P	but it was, it allowed me to save up some money…		ICP1

Note. T, Therapist; P, Patient; //, interruption; empty cell, category not present. CIS-Therapist: RI1, Linguistic Avoidance; ICI1, Indirect Therapist Interventions on Facts. CIS-Patient: ICP1, Indirect Collaborative Processes on Facts. The participants' sensitive data were replaced to guarantee confidentiality, but without altering the intrinsic properties of the speech.

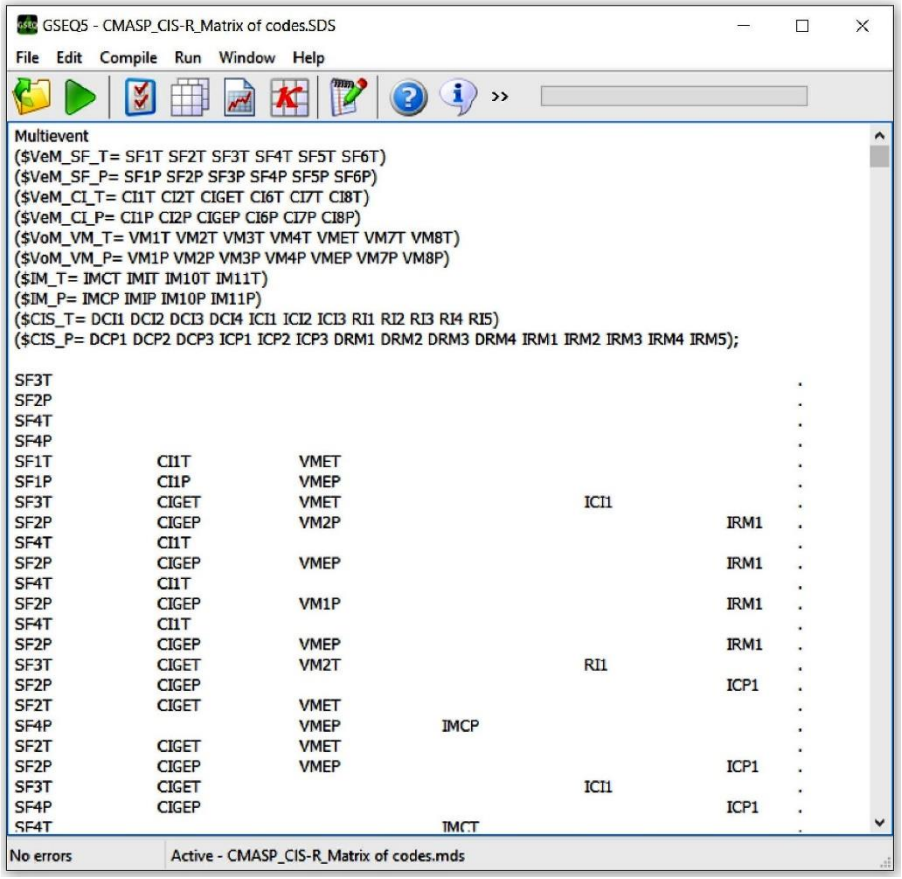
Some categories of the CMASP were re-categorized (Schegloff, 2000) according to the behaviors identified in the literature:

- Global Exploration (CIGE) = Exploring (CI3) + Deepening (CI4) + Focusing (CI5)
- Emotional (VME) = Emotional Positive (VM5) + Emotional Negative (VM6)
- Cooperative (IMC) = All cooperative interruption behaviors

The datasets resulting from the application of the two instruments were integrated into a single matrix of concurrent and event-based codes (Bakeman, 1978; see example in Figure 4) since their coding procedures, unitizing procedures (Krippendorff, 2018), and type of data corresponded. From a first descriptive analysis through SPSS v. 23.0, it was possible to quantitatively determine the behaviors related to the communicative modes (Table 9) and the therapeutic alliance construction (Table 10) implemented by both the therapist and the depressed patients in the first three sessions of the seven clinical cases.

Figure 4

Extract of the Code Matrix From the Merging of CMASP and CIS-R Data



Note. Screenshot extrapolated from GSEQ program (v. 5.1.23; Bakeman & Quera, 2011). Each row corresponds to the concurrent and event-based codes of a speaking turn of the therapist (T) and depressed patient (P).

Table 9

Descriptive Statistics of the Therapist's and Depressed Patients' Communicative Behaviors

CMASP	Therapist		Patient group	
	f	%	*f*	%
Verbal Mode-Structural Form (VeM-SF)	2,750	88.11	2,997	96.34
Courtesies (SF1)	23	0.84	29	0.97
Assertion (SF2)	832	30.25	2,467	82.32
Question (SF3)	687	24.98	65	2.17
Agreement (SF4)	1,149	41.78	366	12.21
Denial (SF5)	11	0.40	69	2.30
Direction (SF6)	48	1.75	1	0.03
Not coded	371	11.89	114	3.66
Verbal Mode-Communicative Intent (VeM-CI)	2,503	80.20	2,668	85.76
Acknowledging (CI1)	1,108	44.27	167	6.26
Informing (CI2)	140	5.59	56	2.10
Global Exploration (CIGE)	832	33.24	2,202	82.53
Temporizing (CI6)	3	0.12	23	0.86
Attuning (CI7)	180	7.19	47	1.76
Resignifying (CI8)	240	9.59	173	6.48
Not coded	618	19.80	443	14.24
Vocal Mode (VoM)	1,419	45.47	2,413	77.56
Reporting (VM1)	2	0.14	8	0.33
Connected (VM2)	670	47.22	851	35.27
Declarative (VM3)	92	6.48	87	3.61
Introspective (VM4)	9	0.63	177	7.34
Emotional (VME)	339	23.89	1,214	50.31
Pure Positive Emotion (VM7)	287	20.23	46	1.91
Pure Negative Emotion (VM8)	20	1.41	30	1.24
Not coded	1,702	54.53	698	22.44
Interruption Mode (IM)	550	17.62	585	19. 09
Cooperative (IMC)	238	43.27	209	35.19
Intrusive (IMI)	171	31.09	180	30.30
Neutral Interruption (IM10)	96	17.45	190	31.99
Failed Interruption (IM11)	45	8.18	15	2.53
Not coded	2,571	82.38	2,526	81.20

Note. N = 6,232 speaking turns (n = 3,121 for the therapist; n = 3,111 for the patient group).

Table 10

Descriptive Statistics of Alliance Ruptures and Repairs by the Therapist and Depressed Patients

CIS-R	*f*	%
CIS-Therapist	1,215	38.93
Direct Therapist Intervention (DCI)	165	13.58
Task/Goal (DCI1)	137	11.28
Affects (DCI2)	19	1.56
Meaning (DCI3)	9	0.74
Meta communication (DCI4)	0	0.00
Indirect Therapist Intervention (ICI)	787	64.77
Facts (ICI1)	455	37.45
Affects (ICI2)	177	14.57
Meaning (ICI3)	155	12.76
Rupture Interventions (RI)	263	21.65
Linguistic Avoidance (RI1)	140	11.52
Affective Avoidance (RI2)	0	0.00
Hostility (RI3)	122	10.04
Perseveration (RI4)	1	0.08
Lack of Clarity (RI5)	0	0.00
Not coded	1,906	61.07
CIS-Patient	2,529	81.29
Direct Collaborative Processes (DCP)	98	3.88
Negotiation Tasks/Goals (DCP1)	48	1.90
Affects (DCP2)	48	1.90
Meaning (DCP3)	2	0.08
Indirect Collaborative Processes (ICP)	1,106	43.73
Facts (ICP1)	786	31.08
Affects (ICP2)	227	8.98
Meaning (ICP3)	93	3.68
Direct Rupture Marker (DRM)	40	1.58
Task/Goal (DRM1)	2	0.08
Relationship (DRM2)	35	1.38
Discouragement (DRM3)	0	0.00
Parameters (DRM4)	3	0.12
Indirect Rupture Marker (IRM)	1,285	50.81
Linguistic Avoidance (IRM1)	798	31.55
Affective Avoidance (IRM2)	337	13.33
Self-esteem Regulation Strategies (IRM3)	43	1.70
Indirect Allusions (IRM4)	26	1.03
Acquiescence (IRM5)	81	3.20
Not coded	582	18.71

Note. N = 6,232 speaking turns (n = 3,121 for the CIS-Therapist; n = 3,111 for the CIS-Patient).

Lag sequential and polar coordinate analyses were used in an integrated way to obtain objective measures of the dynamics between communication and therapeutic alliance (Anguera, Portell, et al., 2018; Bartholomew & Lockard, 2018). In particular, based on different considerations (the type of topic, research aims, and participants' characteristics), ten retrospective lags (from lag-10 to lag-1) and ten prospective lags (from lag+1 to lag+10) were applied –compared to the usual practice of using only five lags (Bakeman, 1978)– to obtain a greater amount of information that adequately caught the complexity of the interactive dynamics between the two constructs.

From lag sequential analysis through the GSEQ program (v. 5.1.23; Bakeman & Quera, 2011), it was possible to identify the behavioral patterns related to the therapeutic alliance construction by each participant according to the specific verbal and non-verbal behaviors implemented by the other. Tables 11–14 shows the statistically significant adjusted residuals ($Z > 1.96$ for $p < 0.05$) related to the excitatory relationships between each selected communicative behavior (*criterion behavior*) and the alliance ruptures and repairs (*conditional behaviors*) in the ten retrospective lags and ten prospective lags.

Finally, the application of polar coordinates analysis (Anguera, 1997; Sackett, 1980) through the HOISAN program (v. 1.6.3.4; Hernández-Mendo et al., 2012) made it possible to identify the statistically significant relationships –in the form of vector maps– between each communication mode (*focal behavior*) of one participant and the behaviors of the other related to the therapeutic alliance construction (*conditional behavior*). Figures 5–8 show the vector maps of statistically significant relationships (vectors with a radius greater than 1.96 for $p < 0.05$) considering ten prospective and retrospective lags. In line with the objective of the investigation, the study considered only the activation relationships between focal behaviors and conditional behaviors (Quadrants I and IV).

Table 11

Depressed Patients' and Therapist's Behavioral Patterns in the Alliance Construction due to the Reciprocal VeM-Structural Forms

Lag-10	Lag-9	Lag-8	Lag-7	Lag-6	Lag-5	Lag-4	Lag-3	Lag-2	Lag-1	CB	Lag+1	Lag+2	Lag+3	Lag+4	Lag+5	Lag+6	Lag+7	Lag+8	Lag+9	Lag+10
ICP1	ICP1	ICP1	ICP1	ICP1	ICP1	ICP1	ICP1	ICP1	ICP1	SF3T	ICP1	ICP1	ICP1	DCP1	ICP1	ICP2	ICP1	ICP2	ICP1	**ICP1**
						ICP2								ICP1		DCP1			ICP2	
IRM1	*IRM1*	*IRM1*	*IRM1*	*IRM1*	*IRM1*	*IRM5*	*IRM1*	*ICP3*	***IRM1***		*IRM1*	*IRM1*	*IRM5*	*IRM1*	***IRM1***	*IRM1*	*IRM1*	*IRM1*	*IRM1*	*DRM2*
	IRM5		*IRM5*	*IRM5*	*DCP2*	*IRM1*	*IRM5*	*DRM2*	***IRM5***		*IRM2*		*IRM1*		***IRM5***	*IRM5*	*IRM5*	*DRM2*	*IRM5*	
						DRM2					*IRM5*								*ICP3*	
																			DRM2	
ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	SF2P	ICI1	ICI1	ICI1	ICI1	ICI1	ICI2	ICI1	ICI1	ICI1	**ICI1**
						ICI2		ICI2	ICI2		ICI2		ICI2		ICI2					
DCI1	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*ICI3*	***DCI1***		*ICI3*	*DCI1*	***DCI1***	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*
ICI3		*ICI3*			*ICI3*		*ICI3*	*DCI3*	***ICI3***		*DCI1*		***ICI3***	*ICI3*	*ICI3*	*ICI3*	*ICI3*		*ICI3*	
													RI3	*DCI2*						
													DCI2							

Note. **CMASP-T–CIS-P**. *Criterion Behavior* (CB): Question (SF3T). *Conditional Behaviors*: Direct Collaborative Processes on Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Affective Avoidance (IRM2), and Acquiescence (IRM5). **CMASP-P–CIS-T**. *Criterion Behavior* (CB): Assertion (SF2P). *Conditional behaviors*: Direct Therapist Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Hostility (RI3). Categories in bold indicate the Max lag and the end of the pattern. Z values > 1.96, excitatory relationships; Z values < -1.96 (in italics), inhibitory relationships; significance level at $p < 0.05$.

Table 12

Depressed Patients' and Therapist's Behavioral Patterns in the Alliance Construction due to the Reciprocal VeM-Communicative Intents

Lag-10	Lag-9	Lag-8	Lag-7	Lag-6	Lag-5	Lag-4	Lag-3	Lag-2	Lag-1	CB	Lag+1	Lag+2	Lag+3	Lag+4	Lag+5	Lag+6	Lag+7	Lag+8	Lag+9	Lag+10
ICP1	ICP1	ICP1	ICP1	IRM3	ICP1	ICP1	ICP1	ICP1	ICP1	CIGET	ICP1	ICP1	ICP1	ICP1	ICP1	ICP1	ICP1	ICP1	ICP1	**ICP1**
				ICP1		ICP2							ICP2			ICP2		ICP2		**ICP2**
IRM1	*DCP2*	*IRM1*	*IRM5*	*IRM1*	*IRM1*	*DCP1*	*IRM1*	*ICP3*	***IRM1***		***IRM1***	*IRM1*	*IRM1*	*IRM1*	*IRM1*	*IRM1*	*DRM2*	*IRM1*	*IRM1*	*IRM1*
DCP2		*IRM5*	*IRM1*	*ICP3*	*IRM5*	*IRM1*	*DCP1*	*DCP1*	***DCP1***		***IRM2***	*DCP1*	*DCP1*	*DCP1*	*DRM2*		*IRM2*	*DRM2*	*DRM2*	*IRM5*
IRM5		*DCP2*				*DCP2*	*IRM5*	*DRM2*	***IRM5***		***ICP3***	*IRM5*	*IRM5*	*IRM5*			*DCP1*	*IRM1*	*DCP1*	*DRM2*
						DRM2	*DCP2*	*IRM1*			***IRM5***								*IRM2*	
											DCP1									
ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	CIGEP	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	ICI1	**ICI1**
		ICI2			ICI2				ICI2		ICI2		ICI2			ICI2				
DCI1	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*	*DCI1*	***DCI1***		***ICI3***	*DCI1*	*ICI3*	*ICI3*	*DCI3*	*ICI3*	*ICI3*	*ICI3*	*ICI3*	*ICI3*
ICI3	*ICI3*	*ICI3*	*DCI3*	*DCI3*	*ICI3*	*DCI3*	*ICI3*	*ICI3*	***ICI3***		***DCI1***	*ICI3*	*DCI1*	*DCI1*	*ICI3*	*DCI2*	*DCI3*	*DCI3*	*DCI3*	*DCI1*
DCI3	*DCI3*	*DCI3*	*ICI3*		*DCI3*	*DCI2*	*RI1*		***RI1***		***DCI3***	*DCI2*	*DCI3*	*DCI3*	*DCI1*	*DCI1*			*DCI2*	
	RI1	*DCI2*	*RI1*		*RI1*		*DCI3*					*DCI3*	*RI3*		*DCI2*	*DCI3*			*DCI1*	
					DCI2		*DCI2*								*RI3*					

Note. **CMASP-T–CIS-P**. *Criterion Behavior* (CB): Global Exploration (CIGET). *Conditional Behaviors*: Direct Collaborative Processes on Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Affective Avoidance (IRM2), Self-Esteem Regulation (IRM3), and Acquiescence (IRM5). **CMASP-P–CIS-T**. *Criterion Behavior* (CB): Global Exploration (CIGEP). *Conditional behaviors*: Direct Therapist Interventions on Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3). Categories in bold indicate the Max lag and the end of the pattern. *Z* values > 1.96, excitatory relationships; *Z* values < -1.96 (in italics), inhibitory relationships; significance level at $p < 0.05$.

Table 13

Depressed Patients' and Therapist's Behavioral Patterns in the Alliance Construction due to the Reciprocal Vocal Modes

Lag-10	Lag-9	Lag-8	Lag-7	Lag-6	Lag-5	Lag-4	Lag-3	Lag-2	Lag-1	CB	Lag+1	Lag+2	Lag+3	Lag+4	Lag+5	Lag+6	Lag+7	Lag+8	Lag+9	Lag+10
ICP3	ICP2					**ICP2**	ICP2	ICP2	ICP2	VM2T	ICP1	ICP1	**DCP2**			IRM3				DRM2
											DCP1									DCP1
DCP1				***IRM5***		*DCP1*	*DRM2*	*DRM2*	*IRM1*		*IRM1*	*IRM1*	***IRM1***							
						IRM5														
		ICI3					**ICI2**	ICI2	DCI2	VMEP	ICI2	ICI2	**DCI2**			ICI3	ICI3	ICI3	ICI3	ICI3
																	DCI2		DCI2	DCI2
	DCI1			*DCI3*			***DCI3***	*ICI1*						*RI1*				*ICI2*	*ICI1*	
				ICI2																

Note. **CMASP-T–CIS-P**. *Criterion Behavior* (CB): Connected (VM2T). *Conditional Behaviors*: Direct Collaborative Processes on Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Self-Esteem Regulation (IRM3), and Acquiescence (IRM5). **CMASP-P–CIS-T**. *Criterion Behavior* (CB): Emotional (VMEP). *Conditional behaviors*: Direct Therapist Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1). Categories in bold indicate the Max lag and the end of the pattern. *Z* values > 1.96, excitatory relationships; *Z* values < -1.96 (in italics), inhibitory relationships; significance level at $p < 0.05$.

Table 14

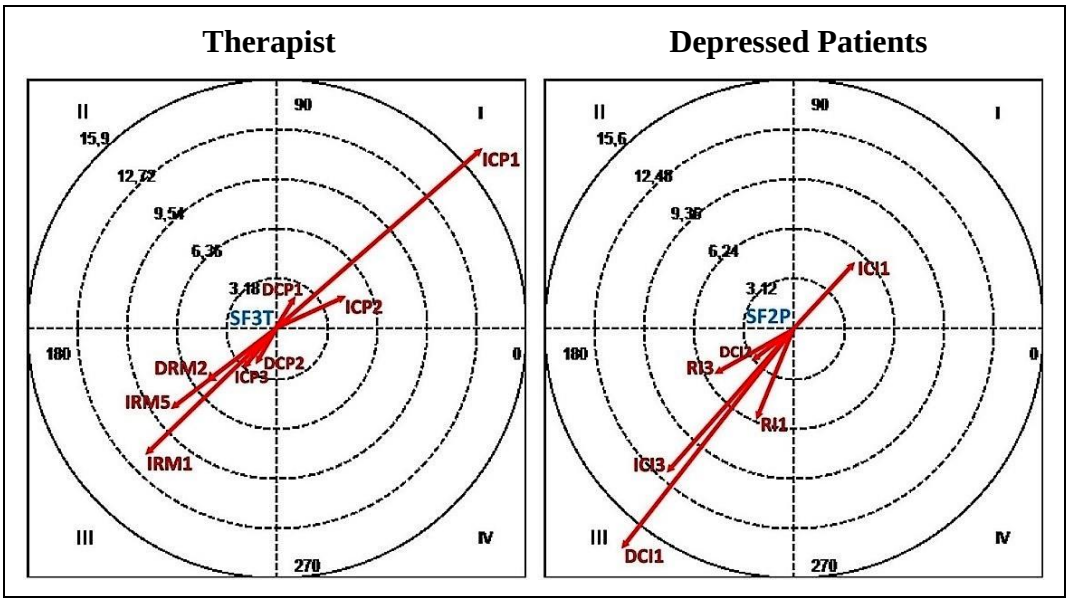
Depressed Patients' and Therapist's Behavioral Patterns in the Alliance Construction due to the Reciprocal Interruption Modes

Lag-10	Lag-9	Lag-8	Lag-7	Lag-6	Lag-5	Lag-4	Lag-3	Lag-2	Lag-1	CB	Lag+1	Lag+2	Lag+3	Lag+4	Lag+5	Lag+6	Lag+7	Lag+8	Lag+9	Lag+10
ICP2		ICP2			**ICP1**	ICP1	ICP1	ICP1	ICP1	IMCT	ICP1	ICP1	ICP1	ICP1	ICP3	**ICP2**				
					IRM5	*IRM2*			***DCP1***		*IRM5*		*DCP1*		*IRM1*	***IRM1***				
			ICI2		DCI1	DCI1	DCI1	DCI1	DCI1	IMCP	DCI1	DCI1	DCI1	DCI1	DCI1		**DCI1**			
			DCI1								ICI3						**DCI2**			
		RI1	*ICI1*						***ICI1***		*RI3*		*ICI1*	***ICI2***						

Note. **CMASP-T–CIS-P**. *Criterion Behavior* (CB): Cooperative (IMCT). *Conditional Behaviors*: Direct Collaborative Processes on Tasks/Goals (DCP1); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Affective Avoidance (IRM2), and Acquiescence (IRM5). **CMASP-P–CIS-T**. *Criterion Behavior* (CB): Cooperative (IMCP). *Conditional behaviors*: Direct Therapist Interventions on Task/Goal (DCI1), Affects (DCI2); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3). Categories in bold indicate the Max lag and the end of the pattern. Z values > 1.96, excitatory relationships; Z values < -1.96 (in italics), inhibitory relationships; significance level at $p < 0.05$.

Figure 5

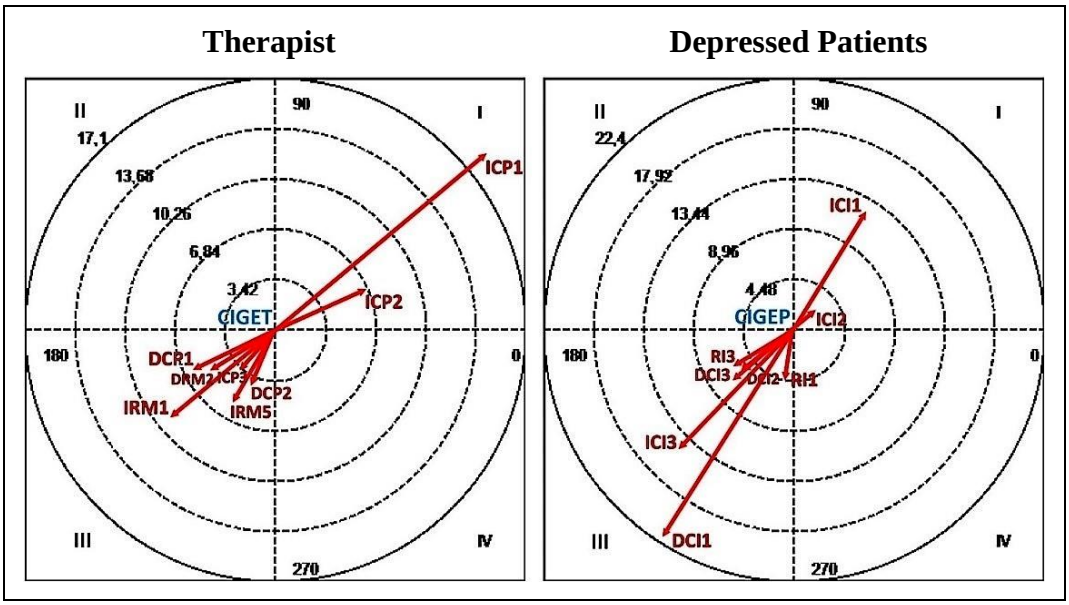
Vector Maps of the Statistically Significant Relationships Between VeM-Structural Forms and the Reciprocal Construction of the Therapeutic Alliance



Note. **CMASP-T–CIS-P**. *Focal Behavior*: Question (SF3T). *Conditional Behaviors*: Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1), and Acquiescence (IRM5). **CMASP-P–CIS-T**. *Focal Behavior*: Assertion (SF2P). *Conditional Behaviors*: Direct Therapist Interventions on Task/Goal (DCI1) and Affects (DCI2); Indirect Therapist Interventions on Facts (ICI1) and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3). The study considered ten retrospective lags and ten prospective lags. The depiction shows only the significant vectors (radius greater than 1.96 for $p < 0.05$).

Figure 6

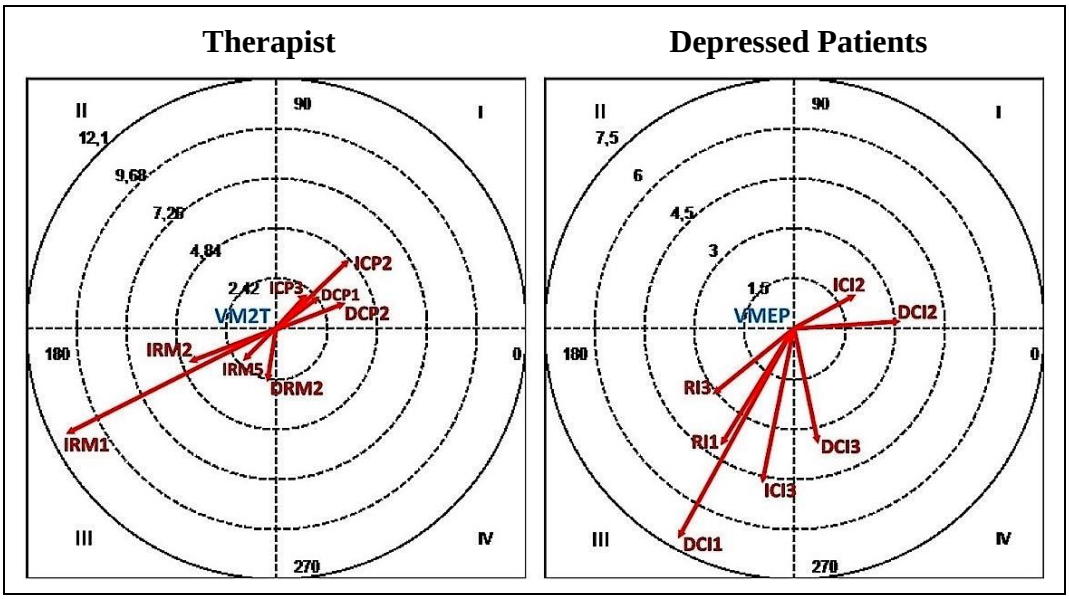
Vector Maps of the Statistically Significant Relationships Between VeM-Communicative Intents and the Reciprocal Construction of the Therapeutic Alliance



Note. **CMASP-T–CIS-P**. *Focal Behavior*: Global Exploration (CIGET). *Conditional Behaviors*: Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1), Affects (ICP2), and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1) and Acquiescence (IRM5). **CMASP-P–CIS-T**. *Focal Behavior*: Global Exploration (CIGEP). *Conditional Behaviors*: Direct Therapist Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Facts (ICI1), Affects (ICI2), and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3). The study considered ten retrospective lags and ten prospective lags. The depiction shows only the significant vectors (radius greater than 1.96 for $p < 0.05$).

Figure 7

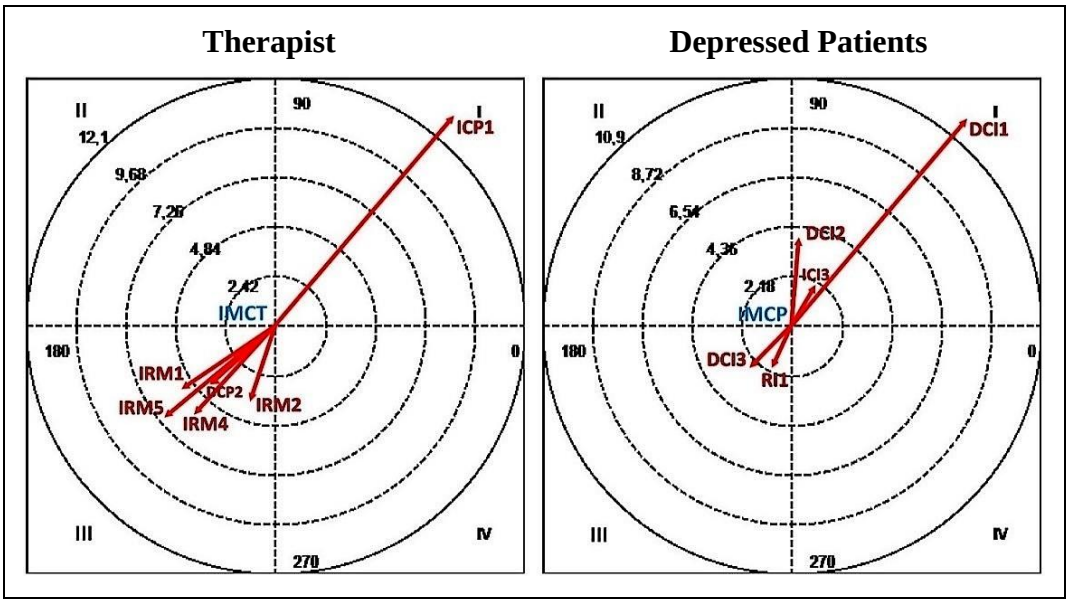
Vector Maps of the Statistically Significant Relationships Between Vocal Modes and the Reciprocal Construction of the Therapeutic Alliance



Note. **CMASP-T–CIS-P**. *Focal Behavior*: Connected (VM2T). *Conditional Behaviors*: Direct Collaborative Processes on Negotiation Tasks/Goals (DCP1) and Affects (DCP2); Indirect Collaborative Processes on Affects (ICP2) and Meaning (ICP3); Direct Rupture Markers on Relationship (DRM2); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Affective Avoidance (IRM2), and Acquiescence (IRM5). **CMASP-P–CIS-T**. *Focal Behavior*: Emotional (VMEP). *Conditional Behaviors*: Direct Therapist Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Affects (ICI2) and Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1) and Hostility (RI3). The study considered ten retrospective lags and ten prospective lags. The depiction shows only the significant vectors (radius greater than 1.96 for $p < 0.05$).

Figure 8

Vector Maps of the Statistically Significant Relationships Between Interruption Modes and the Reciprocal Construction of the Therapeutic Alliance



Note. **CMASP-T–CIS-P**. *Focal Behavior*: Cooperative (IMCT). *Conditional Behaviors*: Direct Collaborative Processes on Affects (DCP2); Indirect Collaborative Processes on Facts (ICP1); Indirect Rupture Markers as Linguistic Avoidance (IRM1), Affective Avoidance (IRM2), Indirect Allusions (IRM4), and Acquiescence (IRM5). **CMASP-P–CIS-T**. *Focal Behavior*: Cooperative (IMCP). *Conditional Behaviors*: Direct Therapist Interventions on Task/Goal (DCI1), Affects (DCI2), and Meaning (DCI3); Indirect Therapist Interventions on Meaning (ICI3); Rupture Interventions as Linguistic Avoidance (RI1). The study considered ten retrospective lags and ten prospective lags. The depiction shows only the significant vectors (radius greater than 1.96 for $p < 0.05$).

General Discussion

The purpose of this doctoral thesis was to provide empirical evidence on the communicative and relational dynamics emerging turn by turn in the therapist-depressed patient interaction within the Italian context. This objective has been defined to determine the micro-processes that develop between communication and therapeutic alliance, as precursors of psychotherapy success and change during the initial phases of psychodynamic psychotherapy with a brief focal approach. Since the results obtained are discussed extensively in each of the two published studies, this chapter summarizes and analyses the main findings according to the proposed objectives and the scientific literature on the subject. These objectives can be summed up in two main pivotal points that guide this doctoral thesis:

1. Identifying the verbal and non-verbal behaviors of the therapist and depressed patient in the Italian context reformulated through a single unifying theory.
2. Investigating the action of specific verbal, vocal, and interruption behaviors of the therapist and depressed patients that the literature identifies as essential elements in the mutual regulation processes and the construction of a good therapeutic alliance during the initial phases of psychotherapy.

First of all, the results of **study 1** deriving from the application of the mixed methods approach (Anguera, 2020) present the Communicative Modes Analysis System (CMASP), which shows its ability to investigate the therapeutic discourse in the Italian context as a single integrated and interacting system. It is able, on the one hand, to identify and classify the verbal, vocal, and interruption behaviors performed turn by turn by the therapist and depressed patient, and on the other hand, to define the communication profiles of both participants that emerge during the therapeutic interaction. Indeed, the performative function of language (Searle, 1969/2017) used as a unifying theory reinterprets such behaviors as elements constituting a

single communicative field (Mörtl & Gelo, 2015), overcoming the limitations of psychotherapy research related to communication theories as verbal and non-verbal aspects in polar opposition (Westland, 2015). Furthermore, the study of voice and interruption behaviors in the therapeutic discourse enters into a research field that has been poorly explored in psychotherapy, especially in the Italian context, enriching knowledge about the complexity of therapist-patient exchanges thanks to their properties widely recognized in the literature (e.g., Li et al., 2004; Mellado et al., 2017; Rocco et al., 2018; Tomicic, Martínez, & Krause, 2015). The possibility to apply the instrument to both the therapist and the patient and to obtain a predominant communicative mode for each dimension at the speaking turn level allows performing statistical analyses (e.g., lag sequential and polar coordinate analyses) able to deepen the process dynamics emerging in the therapy sessions during the exchanges between participants (Anguera, Portell, et al., 2018). All this overcomes the limitations of many tools discussed above, which focus on a single participant, or a specific communication component, or micro-analyze the therapeutic discourse.

Concerning the psychometric properties, the CMASP shows high intra-and inter-observer reliability at a global, dimensional, and categorical level, making it an instrument able to effectively catch the reality of the discourse that emerges between therapist and depressed patient during psychotherapy sessions. Moreover, it shows great flexibility that allows it to be used globally or dimensionally depending on research purposes. It is important to emphasize that the absence of scores for some categories (e.g., Direction [SF6], Temporizing [CI6], Pure Negative Emotion [VM8], Intrusive-Topic change [IM8], Intrusive-Tangentialization [IM9]) does not indicate an aspect of the weakness of the CMASP; on the contrary, it confirms the judges' agreement for these categories, reinforcing the instrument reliability. From the CMASP application, it was possible to outline an early general trend of the communicative behaviors in the first three sessions of the seven clinical cases, demonstrating its ability to catch the reality

of the research phenomenon. The low occurrence rate of some communicative behaviors (e.g., Direction [SF6], Temporizing [CI6], Reporting [VM1], Intrusive-Tangentialization [IM9]) may reflect the specificity of therapy with depressed patients, providing information on the predominant verbal and non-verbal aspects that emerge during the first sessions. From the viewpoint of the Structural Forms of verbalizations, the higher occurrence frequency of Assertion (SF2), Agreement (SF4), and Question (SF3) is in line with the characteristics of psychodynamic psychotherapy (Gabbard, 2018; Rawson, 2018). Indeed, within this type of approach, the therapeutic discourse fosters communicative exchanges aimed at bringing out the inner reality of participants, where the agreement between the therapist and patient supports the proceeding of the conversation by recognizing the truth of the reciprocal statements (Valdés & Krause, 2015). The Communicative Intent of verbalizations is mainly aimed at Exploring (CI3) and Deepening (CI4) the experience and emotions of participants, where Recognizing (CI1) the other's viewpoint supports the elaboration of the therapeutic discourse. Indeed, especially in the early stages of psychodynamic therapy, the co-construction of meanings goes through an initial phase of investigation on the internal reality of participants to create that inter-mental space where to connect meanings (Charman, 2004; C. Martínez et al., 2015). Moreover, the vocal modes Connected (VM2), Emotional-Positive (VM5), Emotional-Negative (VM6), and the interruption modes Concurrence (IM1), Neutral (IM10), and Floor Taking (IM6) are those that emerge most frequently in the early stages of therapy. They enrich the verbalizations in line with the objectives of psychodynamic psychotherapy, that is, consolidating the inter-mental space and fostering collaborative and emotional processes, often difficult to develop in the interaction with depressed patients (Driessen et al., 2015; C. Martínez et al., 2015).

Referring to the last objective realized through **study 2**, the communicative field as an interacting system of verbal, vocal, and interruption behaviors guided by the performative

function of language (Searle, 1969/2017) allows identifying the communicative actions of the therapist and depressed patients that foster the construction of a good therapeutic alliance during the mutual regulation processes. The results obtained confirm the essential role of certain communicative modes in the development of collaborative behaviors connected to the therapeutic alliance and change (Ardito & Rabellino, 2011; Colli & Lingiardi, 2009).

Regarding the Verbal Mode-Structural Forms (VeM-SF), during the mutual regulation processes in the initial phases of psychotherapy, there is greater use of Question (SF3) by the therapist and Assertion (SF2) by depressed patients. Probably, this result is due to the complementarity and asymmetry of the participants' roles, as confirmed by the study of Krause et al. (2016). In line with what was expected, the therapist's use of questions (SF3T) structures stable patterns and statistically significant relationships with the patient's collaborative behaviors, mainly focusing on personal experience (ICP1), affects exploration (ICP2), and definition of therapy goals (DCI1). On the other hand, the assertions of depressed patients (SF2P) generate stable patterns and statistically significant relationships with collaborative interventions of the therapist, primarily focused on exploring the depressed patients' experiences (ICI1). These dynamics between therapist and patient generate two self-sustaining systems that consolidate the therapeutic relationship during the mutual regulation processes (Beebe, 2006). Therefore, in clinical practice, questions and assertions in the early stages of therapy may assume the function of negotiation instruments and self-affirmation instruments, respectively, promoting the building of the collaborative relationship at the basis of the therapeutic alliance and change precursors (Safran & Muran, 2003).

Concerning the Verbal Mode-Communicative Intents (VeM-CI), study 2 shows greater use of Global Exploration (CIGE: Exploring + Deepening + Focusing) by depressed patients, as confirmed by the results of the corresponding category Exploration in the study of Dagnino et al. (2012). The psychotherapeutic process, indeed, requires an initial phase of investigation

focused on the exploration by patients. In line with what was expected, the exploratory intent of therapist verbalizations (CIGET) fosters stable patterns and significant associations with the patient's collaborative behaviors related to his/her experience (ICP1) and affects (ICP2). Symmetrically, the exploratory intent of depressed patients (CIGEP) promotes the activation of stable patterns and significant associations with collaborative interventions of the therapist, aimed at exploring the patient's experiences (ICI1) and affects (ICI2). These dynamics activate circular schemes that promote co-ordination and construction processes of the therapeutic alliance, developing a relational space where the therapist and depressed patient work together on the latter's problems (Beebe, 2006; Dagnino et al., 2012; Heatherington, 1988). In the early stages of therapy, collaborative behaviors that explore experiences and emotions are necessary precursors for the behavioral and cognitive change underlying the subsequent resignification processes and the construction of new meanings (Goldman et al., 2005; Valdés et al., 2005). In clinical practice, all this may provide useful indicators for the therapist to structure interventions that stimulate the reciprocal communicative and emotional adaptation. It allows developing and consolidating an effective collaborative relationship with the depressed patient that promotes the therapeutic alliance construction (Safran & Muran, 2003).

Referring to Vocal Modes (VoM), Connected of the therapist (VM2T) and Emotional of the depressed patient (VMEP) foster coordination processes between participants in line with what was expected and with the results of Tomicic, Martínez, and Krause's (2015) study. Unlike the study of the latter, the results of this doctoral thesis show that both vocal modes present a greater frequency of occurrence in depressed patients, probably due to the type of psychotherapeutic approach that stimulates patients to connect with their inner world to identify unsolved problems and unconscious feelings (Busch et al., 2007; Gabbard, 2018; Rawson, 2018). However, the therapist's use of Connected and the patient's use of the Emotional determine stable patterns and significant associations with the reciprocal

collaborative behaviors underlying the therapeutic alliance construction. Precisely, the vocal mode Connected of the therapist (VM2T) promotes the creation of an inter-mental space where circular processes are activated, encouraging the patient to work on the affective states related to his/her experience (ICP2) and the therapeutic relationship (DCP2), as well as defining the goals of the therapeutic work (DCP1) and reworking the internalized meanings (ICP3) (Beebe, 2006; C. Martínez et al., 2015; Wiseman & Rice, 1989). On the other hand, the vocal mode Emotional of the depressed patient (VMEP) generates circular processes that stimulate the therapist to intervene in order to consolidate the emotional syntony in the therapeutic relationship (DCI2) and to rework the patient's emotional experience (ICI2) (Tomicic & Martínez, 2011; Tomicic, Martínez, et al., 2009). This vocal mode also activates therapist interventions aimed at identifying the dysfunctional patterns of the depressed patient that emerge within the therapeutic relationship (DCI3). In clinical practice, the vocal modes Connected and Emotional may represent communicative indicators that, by integrating with the verbal component (Jones & LeBaron, 2002), support the therapist in performing interventions to consolidate the therapeutic relationship, guiding the self-and mutual regulation processes with depressed patients toward the building of a good early therapeutic alliance (Tomicic & Martínez, 2011; Tomicic, Martínez, et al., 2009).

Finally, concerning the Interruption Modes (IM), the results obtained corroborate those of Oka et al. (2020) and show the greater use of cooperative interruptions by the therapist, probably because the patient recognizes the latter as an expert who guides the conversation and interrupts to investigate his/her problems (Fisher, 1984; Stratford, 1998). In line with what was expected and the results of Li et al. (2005), it emerges that cooperative interruptions stimulate coordination processes between participants through circular schemes involving reciprocal collaborative behaviors (Beebe, 2006). Precisely, the therapist's cooperative interruptions (IMCT) determine stable patterns and significant associations with the depressed patient's

collaborative behaviors related to his/her experience (ICP1). These dynamics are probably due because the early stage of psychodynamic psychotherapy represents a moment of defining the patient's problems (Busch et al., 2007; Gabbard, 2018; Rawson, 2018); therefore, the therapist interrupts to lead the assessment and encourage the depressed patient to explore, creating an inter-mental space where the relationship is consolidated (C. Martínez et al., 2015; Ng et al., 1995; Stratford, 1998). On the other hand, cooperative interruptions of depressed patients (IMCP) determine stable patterns and significant associations with collaborative interventions of the therapist, mainly focused on the therapy goals (DCI1), the feelings of the patient toward the therapeutic relationship (DCI2), and the meanings attributed to his/her experience (ICI3). These interruptions express the depressed patient involvement and activate intersubjective processes that increase the inter-mental space with the therapist (Cafaro et al., 2016; Tannen, 1994), fostering the interventions of the latter to consolidate the therapeutic relationship and work and to redefine the internal representations of the depressed patient him/herself (J. A. Goldberg, 1990). Therefore, in clinical practice, cooperative interruptions may represent both facilitators and indicators of the involvement level that the therapist can use to encourage the exploration and to guide the mutual coordination underlying the therapeutic alliance and change (Safran & Muran, 2003).

Final Conclusions

To conclude, this doctoral thesis presents what emerged from the description of the results according to the objectives achieved through the two studies, paying particular attention to the contribution made by this investigation to the psychotherapy research area. Finally, the chapter shows the limitations and recommendations for future research.

Objective 1: **Identifying the communicative behaviors of the therapist and the depressed patient reformulated through a single unifying theory**.

In particular, the following specific objectives were defined:

a) Building an ad hoc indirect observation tool, as a single and interacting system able to classify the verbal, vocal, and interruption behaviors implemented turn by turn by the therapist and depressed patient in the Italian context.
b) Checking the psychometric reliability of the instrument.
c) Describing the trend of the instrument's sub-scales.

The results described in this doctoral thesis show that:

- The Communicative Modes Analysis System in Psychotherapy (CMASP), an ad hoc indirect observation tool derived from the application of the mixed-methods approach, is able to identify and classify turn by turn verbal, vocal, and interruption behaviors of the therapist and depressed patient within the Italian context, satisfying the need for a single integrated and interacting system.
- The CMASP has high intra-and inter-observer reliability, which makes it effective in catching the reality of the therapeutic discourse and flexible in being used at a global or dimensional level.

- Structural forms Assertion, Question, and Agreement, communicative intents Exploring, Acknowledging, and Deepening, vocal modes Connected, Emotional Positive, and Emotional Negative, interruption modes Cooperative-Concurrence, Intrusive-Floor Taking, and Neutral represent the most commonly used verbal and non-verbal behaviors during the early stages of psychodynamic psychotherapy with the depressed patient.
- The structural form Direction, the communicative intent Temporizing, the vocal mode Reporting, and the interruption mode Intrusive-Tangentialization emerge less frequently during the therapeutic discourse with the depressed patient, probably due to the specificity of the sample considered.

Objective 2: Investigating the action of specific verbal, vocal, and interruption behaviors of the therapist and depressed patients, identified by the literature as essential elements in the mutual regulation processes and the construction of a good therapeutic alliance during the initial phases of psychotherapy.

In particular, the following specific objective was defined:

d) Detecting sequential patterns and statistically significant relationships between the communicative modes of one participant and the therapeutic alliance construction by the other during the mutual regulation processes. Based on previous studies (Cafaro et al., 2016; Dagnino et al., 2012; Krause et al., 2016; Li et al., 2005; Tomicic, Martínez, & Krause, 2015), it is expected that the therapist's verbal (asking and exploring) and non-verbal (elaborating and cooperatively interrupting) modes and the depressed patient's verbal (asserting and exploring) and non-verbal (expressing emotions and cooperatively interrupting) modes positively affect the

mutual construction of the early therapeutic alliance, determining stable patterns and significant associations with collaborative behaviors by the other participant.

Based on the results presented in this doctoral thesis, it should be noted that:

- The therapist makes greater use of questions that stimulate behavioral patterns and circular processes of mutual activation with collaborative behaviors of depressed patients related to their experiences, affects, and the definition of therapy goals.
- Depressed patients tend to make greater use of assertions that determine behavioral patterns and reciprocal activations with collaborative interventions of the therapist aimed at exploring the experiences of patients themselves.
- The exploratory intent of the therapist's verbal content determines behavioral patterns and reciprocal activation processes with collaborative behaviors of the depressed patient related to personal experience and affects connected to it.
- The exploratory intent of the depressed patient's verbal content determines behavioral patterns and circular processes of reciprocal activation with collaborative interventions of the therapist aimed at investigating the patient's experiences and affects.
- The vocal mode of elaborative type enriches the therapist's speech by stimulating behavioral patterns and reciprocal activations with the collaborative behaviors of the depressed patient, focusing on the emotional aspects of his/her experience and the therapeutic relationship, as well as on the goals of the therapeutic work and the resignification of personal experience.
- The patient's emotional vocal mode fosters behavioral patterns and circular processes of mutual activation with collaborative interventions of the therapist, focusing on the emotions about the therapeutic relationship and the patient's

experience. Moreover, it activates therapist interventions aimed at identifying dysfunctional patterns of the depressed patient that emerge within the therapeutic relationship.

- The therapist's collaborative interruptions generate behavioral patterns and circular processes of mutual activation with collaborative behaviors of the patient aimed at exploring his/her own experience.
- The patient's collaborative interruptions foster behavioral patterns and circular processes of reciprocal activation with collaborative interventions of the therapist, focusing on therapy goals, the affects related to the experience, and the meanings attributed to the latter.

The results obtained advance in the understanding of the communicative modes that emerge during therapist-depressed patient interactions in the early stages of psychodynamic psychotherapy. Moreover, they provide empirical evidence on the action of those elements of verbal and non-verbal communication that support depressed patients during the psychotherapy process. On the one hand, they allow patients to overcome difficulties in accessing their inner world and affections because of their personality profile. On the other hand, they facilitate the regulation of relational distance by depressed patients during interactions with the therapist. Therefore, these results extend the knowledge about verbal and non-verbal dynamics in psychodynamic psychotherapy with this kind of patient during the early stages of the encounter. Finally, they reveal aspects unexplored in the Italian context about the interaction of complementary elements of the therapeutic discourse (verbal, vocal, and interruption behaviors) that can guide the therapist in structuring interventions to increase the therapeutic efficacy and stimulate the precursors underlying the change.

From what emerged in this thesis, it is evident the need for a new magnifying glass through which to observe the therapeutic discourse to not lose parts of its complexity. Psychotherapy professionals should take a broader view of the field of communication as an integrated system of interacting elements whereby relational dynamics are built. In this way, they can advance in the knowledge of the therapeutic process and act successfully in the treatment of depressed patients. The findings of this thesis are the first effective resources and tools obtained according to this new view; however, they represent only the "tip of the iceberg" of a field still unexplored and full of potential that professionals are urged to deepen for increasing knowledge about psychotherapy research and the effectiveness of interventions for patient change.

Contributions of the Study

The conception of verbal and non-verbal dimensions as interrelated phenomena developed in this doctoral thesis opens up to a new perspective according to which what is said and how it is said are indivisible aspects that together generate the healing potential of therapeutic discourse. In particular, the joint action of verbal, vocal, and interruption behaviors as a single interacting system structures the therapeutic process in the form of a non-linear and dynamic communication field. Within it, the factors of the therapist, the patient, and their interaction are stimulated and regulated; moreover, the processes of mutual communicative coordination between participants foster the construction of the relational synchrony characterizing the therapeutic alliance. The verbal, vocal, and interruption modes proved to be a resource to support clinical practice with depressed patients and to psychotherapy research in the Italian context, promoting the positive outcome of psychotherapy and increasing knowledge about the therapeutic process, respectively. Although the results achieved should be considered with caution as they refer only to the participants in this research, they may

represent the starting point for developing the potential of communication modes as means that guide the therapeutic process. Indeed, the therapist's and depressed patient's use of specific communicative modes generates reciprocal behavioral strategies of collaborative nature, consolidating the agent role that communication assumes in the development of the relational precursors at the basis of change. Taking into account the obstacles that the personality profile of depressed patients put to the development and maintenance of the therapeutic alliance, the identification of certain communicative behaviors makes it possible to monitor and guide the therapy course through interventions aimed at a positive outcome. All this highlights the need to structure training processes through seminars and classes or to include such topics among the training subjects of psychologists' careers. Providing empirical evidence and training clinicians on communicative modes can be a way to promote effective interventions. To this end, the Communicative Modes Analysis System in Psychotherapy developed in this research may be useful to achieve these goals. Indeed, on the one hand, it can help researchers to increase their knowledge about what happens during therapy, for example, by analyzing the interaction of communicative behaviors with other constructs/disorders or by deepening the changes in patients' symptoms before and after treatment. On the other hand, it can support clinicians in understanding the patient's functioning and in structuring tailored interventions for each therapeutic interaction. The ultimate goal is that professionals get to internalize the CMASP and use it without the need for audio recording and verbatim transcript but, on the contrary, as part of their skills that support the therapeutic process and interaction with the patient.

Another aspect not to be underestimated is the multidisciplinary nature whereby this research was performed, which is in line with the current convergence process of natural and human sciences. Indeed, drawing from different research fields (e.g., linguistics and pragmatics), it was possible to structure an integrated theoretical approach that was able to overcome the prior conception of communicative components as in polar opposition

characterizing psychotherapy research. Although scholars developed various tools that analyze different aspects of communication and its protagonists consistently with this concept, we can affirm that the research of this doctoral thesis took a further step forward by using the performative function of language (Searle, 1969/2017) as a unifying theory, as it allowed reinterpreting the elements of the communicative field in psychotherapy through common roots. All this gives rise to a hitherto unexplored view of communicative behaviors as a single and interacting system that enhances the role not only of verbal communication but also of those elements that complete the therapeutic discourse, i.e., vocal and interruption behaviors. In this sense, the application of the mixed-methods approach and the structuring of an integrative procedure between an ad hoc indirect observation tool and an observational tool with theoretical (or deductive) categories contributed to advance knowledge on the complexity of the therapeutic process, proving to be effective in catching the communicative and relational dynamics that occur between the therapist and patient. Indeed, the complementary use of lag sequential analysis and polar coordinate analysis provided a rigorous, objective, and exhaustive evaluation of the reality of therapeutic exchange. Furthermore, this study makes progress in the application of observational methodology within psychotherapy research because, by extending the number of lags to ten compared to the usual practice of including only five lags, it catches a greater wealth of information on the emerging interactive dynamics in psychodynamic psychotherapy.

Limitations and Recommendations for Future Research

Despite the promising results, the research of this doctoral thesis is not exempt from limitations that require recommendations for future research:

- This research considered only psychodynamic psychotherapy, but it would be interesting to extend the study of the dynamics between communication and therapeutic alliance also to other approaches (e.g., CBT, systemic therapy).
- Both studies focused on the systematic observation of psychotherapy conducted by a single therapist to reduce variability, but it would be useful to include more therapists to deepen communication modes and their interaction with relational indicators.
- Only therapies conducted by a female therapist were considered, but it would be useful to include therapies with male therapists to assess the effect of gender in the communication modes used (e.g., male therapists could use more declarative modes than female therapists).
- The research focused only on patients with depressive symptoms, but it would be significant to extend the CMASP application to other types of disorders (e.g., anxiety, emotional dysregulation, eating disorders); all this to create a diagnostic tool with established norms and evaluate the communication-alliance dynamics in other types of interactions.
- The CMASP includes only the extra-linguistic components of speech, but it would also be useful to incorporate the paralinguistic components (e.g., facial expressions, body movements) to catch an even broader spectrum of the therapeutic interaction complexity.
- Although this investigation included an adequate number of psychotherapy sessions (20 sessions) to collect a large amount of data on the interactions between communication and therapeutic alliance, it represents the material produced by only seven clinical cases. Therefore, it would be useful to increase the number of

participants to perform further research, such as the multiple case study that detects regularity among cases.

- The research considered only the communicative modes that have a positive impact on the development of collaborative behaviors, but it would be useful to analyze also those indicators that hinder the therapeutic alliance and change.
- Finally, the study only considered the mutual regulations between participants, but it would be interesting to extend the investigation to self-regulation processes to analyze their impact on the internal organization during the change co-construction.

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Appendix

Communicative Modes Analysis in Psychotherapy (CMASP)

Coding and Training Manual

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Introduction

During the therapist-patient encounter, the participants implement a specific type of communication, the *therapeutic conversation* (Molina et al., 2013), as mutual research and exploration through dialogue where co-constructed meanings continually evolve (Soares et al., 2010). Indeed, the language and verbalizations of the actors involved convey meanings, determining the change within the therapeutic context (Dagnino et al., 2012). In this sense, communication represents the core of psychotherapy and consists of an interactive process (Ephratt, 2011) characterized by a verbal component (the words people use) and a non-verbal component (the different channels whereby the content is conveyed) (Weick, 1968).

The Communicative Modes Analysis System in Psychotherapy (CMASP) derives from the need to overcome the concept of communicative dimensions as in polar opposition characterizing research in psychotherapy (Westland, 2015): it structures the field of communication as a single and interacting system of verbal and non-verbal dimensions (Jones & LeBaron, 2002; Salvatore & Gennaro, 2015). Precisely, the CMASP aims to describe and study verbal (structure and content) and extralinguistic (vocal and interruption) processes emerging turn by turn during the patient-therapist interaction to understand how the construction of the therapeutic discourse and its evolution in the therapeutic setting occurs. The instrument represents a reliable and flexible classification system, which is developed in the field of qualitative research (Anguera et al., 2018). It provides multiple and concurrent information on communicative processes and classifies, together or separately, the communicative components in therapeutic discourse. Being a single system for the analysis and coding of the communicative interaction between the therapist and patient, the CMASP allows performing comparative and sequential studies, providing information about the evolution of the therapeutic discourse during each session. This system can be applied to

audio/video recordings and/or transcripts of psychotherapy sessions, stimulating the subjectivity of the evaluator. At the basis of the CMASP, there is the performative function of language that derives from the Speech Act Theory (Searle, 1969/2017). According to this theory, language is a part of reality and can be assimilated to an action through which, *by saying something, we do something* (Reyes et al., 2008; Searle, 1969/2017). Therefore, the speech expression by a speaker corresponds to realize an action (the *speech act*; Searle, 1969/2017). Indeed, within a two-way interpretative process (Salvatore, 2011), the speaker's speech determines an impact on the listener who decodes it and, in turn, realizes a communicative act that influences the former. These actions are founded on the communicative intents of speakers who structure, on the one hand, communication as a single and interacting system of verbal and non-verbal dimensions (Jones & LeBaron, 2002), and on the other hand, the therapeutic discourse as the process resulting from the interconnected action of participants (*interactive communication*; Sbisà, 2009). All this generates a mutual regulation process between the therapist and patient (Martínez et al., 2015) that transforms the internal organizations of participants into more complex structures, fostering psychotherapy change (Cavelzani & Tronick, 2016). Within this context, verbal, vocal, and interruption behaviors, as pivotal and complementary elements of the therapeutic discourse (Jones & LeBaron, 2002), play an essential role in the co-construction of meanings between the therapist and patient (Reyes et al., 2008). For this reason, within the CMASP, these behaviors assume the form of Verbal Modes (VeMs), Vocal Modes (VoMs), and Interruption Modes (IMs) that act to structure a new reality internalized by the therapist and patient according to their intents.

The Structure of the CMASP

The CMASP derives from the application of the observational methodology that, as a mixed-methods in itself, combines qualitative and quantitative methods, providing a broader

and more complete set of complementary information on the phenomenon under study through the support of objective measures (Anguera et al., 2018; Creswell & Plano Clark, 2018). In particular, the instrument results from the combination of two tools of the observation methodology: category systems, a rigid and theory-based tool, and field formats, a flexible tool in highly complex situations (Anguera et al., 2018). As an ad hoc tool for the indirect observation of audio recordings and transcripts of psychotherapy sessions, the CMASP consists of four dimensions that are not mutually exclusive: two components of verbal modes (the structural form and communicative intent); vocal modes; interruption modes. Each dimension consists of a set of exhaustive and mutually exclusive categories[2] (E/ME; Anguera et al., 2018), deriving both from previous studies readapted for CMASP purposes (Goldberg, 1990; Hill, 1978; Krause et al., 2009; Li, 2001; Murata, 1994; Tomicic, Guzmán, et al., 2015; Stiles, 1992; Valdés et al., 2005, 2010) and from the observational methodology application (Anguera et al., 2018), for a total of 33 categories (Table A1; for an in-depth description, see the Category Systems of the CMASP). The instrument includes:

- Verbal Mode-Structural Form (VeM-SF; six categories), identifying the formal structure whereby the speaker expresses his/her verbalization.
- Verbal Mode-Communicative Intent (VeM-CI; eight categories), which analyzes the communicative intent of the speaker's verbalization.
- Vocal Mode (VoM; eight categories), detecting the communicative intent of the speaker's voice regardless of the speech content.
- Interruption Mode (IM; eleven categories), which analyzes the communicative intent of the interrupter when invading the speaking turn of the current speaker.

[2] Within a speaking turn, the coder may assign categories belonging to different dimensions of the CMASP. However, he/she may attribute one and only one category for each dimension (E/ME condition).

Table A1

Structure of the Communicative Modes Analysis System (CMASP)

Verbal Mode-Structural Form (VeM-SF)	Verbal Mode-Communicative Intent (VeM-CI)	Vocal Mode (VoM)	Interruption Mode (IM)
Courtesies (SF1)	Acknowledging (CI1)	Reporting (VM1)	Cooperative-Concurrence (IM1)
Assertion (SF2)	Informing (CI2)	Connected (VM2)	Cooperative-Assistance (IM2)
Question (SF3)	Exploring (CI3)	Declarative (VM3)	Cooperative-Clarification (IM3)
Agreement (SF4)	Deepening (CI4)	Introspective (VM4)	Cooperative-Exclamation (IM4)
Denial (SF5)	Focusing (CI5)	Emotional-Positive (VM5)	Intrusive-Disagreement (IM5)
Direction (SF6)	Temporizing (CI6)	Emotional-Negative (VM6)	Intrusive-Floor taking (IM6)
	Attuning (CI7)	Pure Positive Emotion (VM7)	Intrusive-Competition (IM7)
	Resignifying (CI8)	Pure Negative Emotion (VM8)	Intrusive-Topic change (IM8)
			Intrusive-Tangentialization (IM9)
			Neutral interruption (IM10)
			Failed Interruption (IM11)

The Structure of the Manual

The manual is divided into two parts. Part 1 describes the coding procedures for each dimension of the CMASP, defining the general steps, paying attention to particular cases, and giving illustrative examples. Part 2 describes the categories that constitute each of the four dimensions of the CMASP. Each category is characterized by an explanatory description and illustrative examples and counter-examples. In particular, the dimensions Vocal Mode and Interruption Mode comprise audio recordings in MP3 format and their transcripts[3]. The manual is completed by three appendices that support the coder in the analysis and coding process. Appendix A.1 consists of the summary scheme of the instrument. Appendix A.2 includes the transcription standards of audio recordings for the CMASP application, supplemented by annotations. Appendix A.3 contains the preliminary steps for coding through the CMASP, including indications about how to prepare the material and to code by using the transcript and the Audacity® recording and editing software (v. 2.3.0; Audacity Team, 2018).

[3] Since the examples and counter-examples in the original version of the manual consist of extracts from psychotherapy sessions with Italian patients, the authors opted to include only the free English translation of the transcripts within the text. As these examples and counter-examples contain sensitive data, they have been adapted to ensure the confidentiality of participants, but without altering the intrinsic properties that are necessary for the understanding of the instrument. Those who are interested in accessing MP3 audio recordings and their respective transcripts in the original Italian version can contact the first author at the following e-mail address: lucadelgiacco@gmail.com.

Part 1

Coding Procedures of CMASP Dimensions

Verbal Communication: Verbal Modes (VeMs)

According to the performative language (Searle, 1969/2017), the therapist and patient realize verbal actions characterized by specific structural forms and communicative intents within the therapeutic conversation (Reyes et al., 2008). They take the form of verbal modes, whereby the participants in the communicative exchange influence each other co-constructing meanings and psychological change (Dagnino et al., 2012; Soares et al., 2010).

Following the observational methodology (Anguera et al., 2018), the CMASP includes two main dimensions for verbal modes, structured on axial criteria that revolve around the performative function of language (Searle, 1969/2017) and derive from the analysis of the literature related to this construct. By applying the observational methodology and adapting previous works on the subject to the purposes of the instrument (Hill, 1978; Krause et al., 2009; Stiles, 1992; Valdés et al., 2005, 2010), a set of E/ME categories has been constructed for each of dimension, allowing the analysis of verbal behaviors between the therapist and patient in their constituent components. These dimensions can be resumed as follows:

- Verbal Mode-Structural Form (VeM-SF) analyzes the formal structure of verbalization according to six categories: Courtesies, Assertion, Question, Agreement, Denial, and Direction.
- Verbal Mode-Communicative Intent (VeM-CI) analyzes the communicative intent of the speaker's verbalization according to eight categories: Acknowledging, Informing, Exploring, Deepening, Focusing, Temporizing, Attuning, and Resignifying.

General Steps for Coding VeMs

1. For VeM-SFs and VeM-CIs coding, the coder must prepare the material following the procedures indicated in Appendices A.2 and A.3.
2. The coder realizes the coding of structural forms and communicative intents by analyzing the verbalizations within the transcript with the support of the Category Systems of Verbal Modes.
3. The coding is context-dependent; in other words, the entire conversation between the therapist and patient must be considered as the context for coding each turn or segment of it. Therefore, the coder must read the entire transcript before coding.
4. If the speech of the speaker is divided into different turns due to the other's interjections (e.g., Ah! Well! Eh? Um), backchannels (e.g., yes, of course, mm-hmm, right, uh-hu, hmm), interruptions with no structural form/communicative intent, or non-verbal expressions of emotions (e.g., laughing, crying), then the coder must consider the set of speaking turns as the context for coding each one.
5. The same speaking turn can be segmented into sub-units to code different VeM-SF and/or VeM-CI (see Table A2). In this case, it is advisable to underline the parts of verbalization with different colors based on each category identified and belonging to the two dimensions under examination. All this will help the coder to detect the weight of each category for the attribution of the final code (see Table A3).

Coding of Verbal Mode-Structural Forms (VeM-SFs)

As mentioned above, the VeM-SF dimension includes the following six E/ME categories: Courtesies, Assertion, Question, Agreement, Denial, and Direction (for an in-depth description, see the Category Systems of Verbal Modes).

Following the works of Krause et al. (2009), Valdés et al. (2005, 2010), and Stiles (1992) readapted and extended for CMASP purposes:

1. The analysis unit is the speaking turn of the transcript.
2. The minimum observation unit for coding is any verbalization in the speaking turn that has a structural form (including backchannels).
3. Generally, all verbal turns[4] are coded, except those consisting of (a) interjections (e.g., Ah! Well! Eh? Um) since they do not represent structural forms; (b) words truncated due to the interruptions of the other participant that do not allow the coder to determine the structural form; (c) non-verbal expressions of emotions (e.g., laughing, crying); d) unintelligible communications due to noises or distortions resulting from the audio recording transcription.
4. One VeM-SF is coded per verbal turn. However, the coder must segment the speaking turn if it presents two or more consecutive and different VeM-SFs (Table A2). The turn must also be segmented if two or more consecutive and different VeM-CIs are detected. In these cases, the coder will have to consider one VeM-SF per segment.
5. When two or more VeM-SFs are present in the speaking turn, the coder will have to assign a final code according to the rules described below.

[4] The verbal turn consists of any verbalization that the speaker expresses until the other participant does not take the floor.

Table A2

Coding Example of Verbal Mode-Structural Form (VeM-SF)

Turn	Role	Transcript	VeM-SF
13	T	And now, how do you feel to be, um, the only woman in the house?	Question
14	P	Well! Um, none in particular (laughs) because I do not, not, not give it much thought. Um, everyone has their roles and…//	Assertion
15	T	//No, *(Segment 1)* I think on the level of responsibility since you have felt responsible over the years for, for keeping, keeping *(Segment 2)*	Denial/Assertion
16	P	Mm-hmm	Agreement
17	T	the family together	Assertion

Coding explanation (Table A2):

Turn 13 is coded with Question as the therapist's verbalization is expressed in the form of a request for specific information (see the Category Systems of Verbal Modes).

Turn 14 is coded with Assertion since the patient refers to a certain state of things.

Turns 15 and **17** represent a single verbalization, which is divided into two speaking turns due to the backchannel of the patient (turn 16). The coder must consider all the turns constituting the verbalization as the context for coding each of them (see point 4 of the section General Steps for Coding VeMs). Therefore:

a) Turn 15 shows two different and consecutive structural forms, which divide the turn into segments 1 and 2 (see point 4 of this section). Segment 1 is coded as Denial because the structure of the therapist's verbalization refuses the truth of what the patient said. In the same turn, segment 2 is coded as Assertion because the structure of the therapist's verbalization refers to a specific state of things.

b) Turn 17 is coded with Assertion as turn 15.

Turn 16 is coded with Agreement because the structure of the patient's verbalization recognizes the truth of the therapist's statement (see the Category Systems of Verbal Modes).

VeM-SFs Coding in Segmented Speaking Turns

If a speaking turn is segmented due to two or more different and consecutive structural forms (or due to the presence of different communicative intents), the coder must attribute the VeM-SF that is clearly predominant as the final code of the turn (Table A3).

Table A3

Final Code of VeM-SF in a Segmented Speaking Turn

Turn	Role	Transcript	VeM-SF
23	T	Last week, you were telling me about your relationship with your boyfriend, how it affected your mood and did not make you live well. . . would you like to tell me more about it? Segment 1: Assertion Segment 2: Question	Assertion

Coding explanation (Table A3):

Turn 23 is segmented due to the presence of two different and consecutive structural forms (Assertion and Question). The final code of the speaking turn is Assertion, as the latter represents the predominant structural form.

If two or more VeM-SFs attributed to the segments have equal weight within the verbal turn, then the coder will assign as the final code (Hill, 1978):

a) The VeM-SF coded last if the speaking turn is that of the therapist (Table A4).

Table A4

Final Code of the Therapist's Turn With two VeM-SFs of Equal Weight

Turn	Role	Transcript	VeM-SF
23	T	Then, we take up your relationship again. What is your situation with the exams? Segment 1: Assertion Segment 2: Question	Question

b) The VeM-SF coded first if the speaking turn is that of the patient (Table A5).

Table A5

Final Code of the Patient's Turn With two VeM-SFs of Equal Weight

Turn	Role	Transcript	VeM-SF
48	P	Thanks. May I come in? Segment 1: Courtesies Segment 2: Question	Courtesies

This differentiation is defined only if two or more VeM-SFs are predominant. It recalls the asymmetry principle characterizing the therapist-patient relationship (Soares et al., 2010), and the agent role having the verbal modes in influencing the verbal behaviors of the other participant (Searle, 1969/2017).

Coding of Verbal Mode-Communicative Intents (VeM-CIs)

As mentioned previously, the VeM-CI dimension consists of the following eight E/ME categories: Acknowledging, Informing, Exploring, Deepening, Focusing, Temporizing, Attuning, and Resignifying (for an in-depth description, see the Category Systems of Verbal Modes). Following the works of Krause et al. (2009), Stiles (1992), and Valdés et al. (2005, 2010) readapted and extended for CMASP purposes:

1. The analysis unit is the speaking turn of the transcript.
2. The minimum observation unit for coding is a clause with a subject and simple predicate, where one of the two may also be implicit but inferable through the context of verbalizations (e.g., T: "and can meet next week" [implicit subject: we, you, they]; T: "Aren't you Argentinian?" P: "No" [implicit verb: "No, I am not"]). Generally, the minimum analysis unit corresponds to the principal (or independent) clause, which can be stand alone as a sentence or be accompanied by subordinate (or dependent) clauses[5] (Hill, 1978).
3. VeM-CIs cannot be coded when the subject and the predicate are both implicit (e.g., T: "After") or when only one of the two is implicit and makes the clause incomplete and unintelligible (e.g., P: "he is supposed to… nothing").
4. In general, all verbal turns are coded, except those consisting of interjections, truncated words, non-verbal expressions of emotions, or unintelligible communications since they do not allow determining the communicative intent of the speaker.
5. One VeM-CI is coded per verbal turn. However, the coder must segment the turn if it presents two or more consecutive and different VeM-CIs. The turn must also be segmented if two or more consecutive and different VeM-SFs are detected. In these cases, the coder will have to consider one VeM-CI per segment (Tables A6 and A7).
6. When two or more consecutive and different VeM-CIs are detected, the coder can perform the turn segmentation only if there are two or more independent clauses (in correspondence to the conjunction preceding the second independent clause[6]). On

[5] Subordinate clauses are those which alone are meaningless. Generally, the subordinate clause is preceded by subordinating conjunctions (e.g., because, since, so that, when, while, after, if, how, which, when), correlative conjunctions (e.g., neither…nor, but…also, whether…or), or pronouns (e.g., that).

[6] The second clause is also independent only if preceded by coordinating conjunctions (e.g., or, otherwise, but, on the contrary, rather, therefore, moreover, in short, indeed, that is, effectively).

the contrary, if the clause consists of a dependent plus subordinate sentence, the segmentation cannot be performed.

7. In all cases where two or more VeM-CIs are present in the speaking turn, the coder will have to assign a final code according to the rules described below.

Table A6

Coding Example of Verbal Mode-Communicative Intent (VeM-CI)

Turn	Role	Transcript	VeM-CI
13	T	And now, how do you feel to be, um, the only woman in the house?	Exploring
14	P	Well! Um, none in particular (laughs) because I do not, not, not give it much thought. Um, everyone has their roles and…//	Exploring
15	T	//No, *(Segment 1)* I think on the level of responsibility since you have felt responsible over the years for, for keeping, keeping *(Segment 2)*	– / Deepening
16	P	Mm-hmm	Acknowledging
17	T	the family together	Deepening

Coding explanation (Table A6):

Turn 13 is coded with Exploring because the therapist's purpose is to solicit information about the patient's emotional states (see the Category Systems of Verbal Modes).

Turn 14 is coded with Exploring because the patient's communicative intent is to provide the information required by the therapist (see the Category Systems of Verbal Modes).

Turns 15 and **17** represent a single verbalization, which is divided into two speaking turns due to the patient's backchannel (turn 16). The coder must consider all the turns constituting the verbalization as the context for coding each of them (see point 4 of the section General Steps for Coding VeMs). Therefore:

a) Turn 15 is segmented due to the presence of two different and consecutive VeM-SFs (see point 5 of this section). Segment 1 does not satisfy the minimum

requirements for coding a VeM-CI (neither a subject nor a predicate is present). Segment 2 is coded with Deepening because the therapist's intent is to correct the patient's understanding (see the Category Systems of Verbal Modes).

b) The coding for turn 17 is Deepening, ad in turn 15.

Turn 16 is coded with Acknowledging because the patient's communicative intent is to assume the therapist's view about his experience by receiving communication (see the Category Systems of Verbal Modes).

Table A7

Turn Segmentation With two Different and Consecutive VeM-CIs

Turn	Role	Transcript	VeM-CI
26	P	On the one hand, I was not fully aware of the situation, so it took me a while to get a reaction inside me… there would be a lot to tell Segment 1: Resignifying Segment 2: Exploring	Resignifying / Exploring

Coding explanation (Table A7):

Turn 26 only shows one VeM-Structural Form (Assertion; see the Category Systems of Verbal Modes). However, the speaking turn is segmented due to the presence of two different and consecutive VeM-CIs. Segment 1 is coded with Resignifying because the patient recognizes his pattern of psychological functioning. Segment 2 is coded with Exploring because the patient's communicative intent is to provide information.

VeM-CIs Coding in Segmented Speaking Turns

If a speaking turn is segmented due to two or more different and consecutive VeM-CIs (or due to the presence of different VeM-SFs), the coder will have to attribute the VeM-CI that is clearly predominant as the final code of the turn (Tables A8 and A9).

Table A8

Final Code of VeM-CI in a Segmented Speaking Turn

Turn	Role	Transcript	VeM-CI
26	P	On the one hand, I was not fully aware of the situation, so it took me a while to get a reaction inside me… there would be a lot to tell Segment 1: Resignifying Segment 2: Exploring	Resignifying

Coding explanation (Table A8):

Although **Turn 26** only presents one VeM-SF (Assertion), it is segmented due to two different VeM-CIs. The final code is Resignifying, as the latter is the predominant VeM-CI.

Table A9

Final Code of VeM-CI in a Turn Segmented due to Different VeM-SFs

Turn	Role	Transcript	VeM-CI
15	T	//No, I think on the level of responsibility since you have felt responsible over the years for, for keeping, keeping Segment 1: – Segment 2: Deepening	Deepening

Coding explanation (Table A9):

Turn 15 is segmented due to the presence of two different structural forms. The final code of the speaking turn is Deepening, as the latter represents the predominant VeM-CI.

If two or more VeM-CIs attributed to the segments have equal weight within the verbal turn, then the coder will assign as the final code (Hill, 1978):

a) The VeM-CI coded last if the speaking turn is that of the therapist (Table A10).

Table A10

Final Code of the Therapist's Turn With two VeM-CIs of Equal Weight

Turn	Role	Transcript	VeM-CI
35	T	I guess you are having a really hard time, but it is like you cannot help but take risks. Segment 1: Attuning Segment 2: Resignifying	Resignifying

b) The VeM-CI coded first if the speaking turn is that of the patient (Table A11).

Table A11

Final Code of the Patient's Turn With two VeM-CIs of Equal Weight

Turn	Role	Transcript	VeM-CI
104	P	There was a moment when I could not even communicate with my sisters, and I think it was the culmination of this black period I told you about. I have two older sisters who I am extremely fond of, with whom I have a wonderful relationship, but they have moved in with their boyfriends for work. Segment 1: Resignifying Segment 2: Focusing	Resignifying

This differentiation is defined only if two or more VeM-CIs are predominant. It recalls the asymmetry principle characterizing the therapist-patient relationship (Soares et al., 2010), and the agent role having the verbal modes of the CMASP in influencing the verbal behaviors of the other participant (Searle, 1969/2017).

Coding of Multiple Segments due to Various VeM-SFs and VeM-CIs

During the coding process, a single verbal turn may present multiple segmentations due to various VeM-SFs and VeM-CIs at the same time (Table A12).

Table A12

Speaking Turn Segmentation due to Different VeM-SFs and VeM-CIs

		VeM-SF		
Turn	**Role**	**Transcript**	**VeM-SF**	**VeM-CI**
35	T	I guess it is not an easy relationship with your family, but it seems like the relationship with your parents is important to you anyway... what do you think about it? Segment 1: Assertion Segment 2: Question		
		VeM-CI		
Turn	**Role**	**Transcript**	**VeM-SF**	**VeM-CI**
35	T	I guess it is not an easy relationship with your family, but it seems like the relationship with your parents is important to you anyway... what do you think about it? Segment 1: (A) Attuning; (B) Resignifying Segment 2: (C) Exploring		

Turn 35 shows two different VeM-SFs (Assertion and Question). Moreover, it presents two different VeM-CIs in segment 1 (Attuning and Resignifying) and one VeM-CI in segment 2 (Exploring).

Ones the coder has defined the segments for each dimension, the coding of the speaking turn will be performed based on the following three steps (Table A13):

- Step 1: the coder always assigns predominant VeM-SF first, following the coding procedures described above.

- Step 2: he/she codes the VeM-CI dimension, attributing the predominant communicative intention in segment 1.
- Step 3: he/she identifies the predominant VeM-CI by comparing segments 1 and 2.

Table A13

Steps for Coding Multiple and Simultaneous VeM-SFs and VeM-CIs

VeM-SF (step 1)				
Turn	**Role**	**Transcript**	**VeM-SF**	**VeM-CI**
35	T	I guess it is not an easy relationship with your family, but it seems like the relationship with your parents is important to you anyway... what do you think about it? Segment 1: Assertion Segment 2: Question	Assertion	
VeM-CI (step 2)				
Turn	**Role**	**Transcript**	**VeM-SF**	**VeM-CI**
35	T	I guess it is not an easy relationship with your family, but it seems like the relationship with your parents is important to you anyway... what do you think about it? Segment 1: (A) Attuning; (B) Resignifying Segment 2: (C) Exploring		Resignifying / Exploring
VeM-CI (step 3)				
Turn	**Role**	**Transcript**	**VeM-SF**	**VeM-CI**
35	T	I guess it is not an easy relationship with your family, but it seems like the relationship with your parents is important to you anyway... what do you think about it? Segment 1: (B) Resignifying Segment 2: (C) Exploring		Resignifying

Extra-Linguistic Communication: Vocal Modes (VoMs)

According to the performative function of language (Searle, 1969/2017) and the intersubjective approach of Campbell (2007), the voice plays an active role in the co-construction of meanings and therapeutic change (Tomicic et al., 2009). Indeed, within communication exchanges, the therapist and patient implement vocal modes, which act by conveying the psychological and emotional processes underlying verbalizations (Campanelli et al., 2007; Knoblauch, 2000). They intertwine with the verbal content by enhancing the effectiveness of the speech produced, increasing the mutual regulation processes that emerge between participants during coding and decoding dynamics of therapeutic discourse (Beebe et al., 2000; Tomicic, Martínez, & Krause, 2015; Jones & LeBaron, 2002).

Following the observational methodology (Anguera et al., 2018), the CMASP includes one dimension for vocal modes, structured on axial criteria that revolve around the performative language (Searle, 1969/2017) and derive from the analysis of the literature related to this construct. By applying this methodology and adapting the previous work of Tomicic, Guzmán, et al. (2015) to the purposes of the CMASP, a set of E/ME categories has been constructed for the VoM dimension, allowing the analysis of vocal behaviors between the therapist and patient in their constituent components. These categories are identified based on the impact that the speaker's speech has on the listener of the therapeutic discourse regardless of the verbalization content (Tomicic et al., 2011). Moreover, each one is characterized by specific combinations of acoustic parameters (tone, intensity, duration, and timbre) that prove to enrich the meaning of the verbal content itself (Andersen, 2008). The VoM dimension consists of the following eight E/ME categories: Reporting, Connected, Declarative, Introspective, Emotional-Positive, Emotional-Negative, Pure Positive Emotion, and Pure Negative Emotion (for an in-depth description, see the Category System of Vocal Modes).

General Steps for Coding VoMs

1. For VoMs coding, the coder must prepare the material following the procedures indicated in Appendices A.2 and A.3. The transcript supports the listening and coding of the audio recording, which is performed through the Audacity® program (v. 2.3.0; Audacity Team, 2018). The audio recording is divided into speaking turns corresponding to those of the transcript itself (for the analysis, segmentation, and coding procedures through the Audacity® program, see Appendix A.3).
2. The coder must use the Category System of Vocal Modes as support for coding.
3. The coding is context-dependent; in other words, the entire therapeutic conversation must be considered as the context for coding each turn or segment of it. The coder will have to listen to the entire audio recording before coding to familiarize him/herself with the voice timbre of participants and the session climate.
4. The coder will have to listen and analyze one speaking turn at a time. He/she will have to code based on the overall impression resulting from listening, using the acoustic parameters to confirm or disconfirm the VoM identified (this is useful in case of doubt between two or more VoMs).
5. When the speaker's speech is divided into different turns due to vocal emissions of the other such as interjections (e.g., Ah! Huh? Um) or backchannels (e.g., yes, of course, mm-hmm, right, uh-hu, hmm), the coder must consider the set of speaking turns as the context for coding each of them.
6. By listening to the audio track, the same speaking turn can be segmented through the Audacity® program (v. 2.3.0; Audacity Team, 2018) due to the presence of different VoMs. It is advisable to use the transcript and underlining with different colors the parts of speaking turn that correspond to the different VoMs identified.

However, the coder must perform the coding procedure considering the duration of each segment in the audio track.

Coding of Vocal Modes (VoMs)

As mentioned above, VoMs refer to specific combinations of acoustic parameters that convey participants' speech during the therapeutic process. This dimension analyzes how the speaker expresses speech regardless of the content. For this reason, this dimension considers the impact that these vocal modes have on the listener of the therapeutic session. Eight categories constitute the VoM dimension: Reporting, Connected, Declarative, Introspective, Emotional-Positive, Emotional-Negative, Pure Positive Emotion, and Pure Negative Emotion (for an in-depth description, see the Category System of Vocal Modes). Following the work of Tomicic, Guzmán, et al. (2015) readapted and extended for the CMASP and the Italian context:

1. The analysis unit is the speaking turn in the audio recording, corresponding to that of the transcript (the latter is used as support for coding the different VoMs).
2. The minimum observation unit for coding is a speech longer than two seconds.
3. The coder must only focus on the vocal emission regardless of the verbal content.
4. Generally, all speaking turns are coded, except (a) speech shorter than 2 seconds (<2"); (b) overlaps (i.e., simultaneous speaking) since they do not allow distinguishing the vocal characteristics of each speaker within the turn; (c) backchannels (e.g., yes, of course, mm-hmm, right, uh-hu, hmm) because their meaning depends on the context and their shortness prevents the identification of the vocal characteristics; (d) noises/distortions in the audio recording that not allow the coder to recognize VoMs.
5. One VoM is coded per speaking turn. However, the coder must segment the turn when it presents two or more consecutive and different VoMs, corresponding to

changes in the parameters making it up. In this case, he/she will have to consider a Vocal Mode per segment (Table A14). The presence of two consecutive and different vocal modes does not necessarily coincide with changes in the verbal content. In other words, the coder could detect a change in voice modes at any point in the turn (e.g., in a word, in the middle of a sentence).

6. In all cases where two or more VoMs are present in a turn of the audio recording, the coder will have to assign a final code according to the rules described below.

Table A14

Coding Example of Vocal Mode (VoM)

Turn	Role	Transcript	VoM
13	T	And now, how do you feel to be, um, the only woman in the house?	Connected
14	P	Well! Um, none in particular (laughs) *(Segment 1)* because I do not, not, not give it much thought. Um, everyone has their roles and… *(segment 2)*//	Emotional-Positive / Connected
15	T	//No, I think on the level of responsibility since you have felt responsible over the years for, for keeping, keeping	Connected
16	P	Mm-hmm	
17	T	the family together	Connected

Note. The coding was performed by analyzing vocal emissions and considering the duration of each segment in the audio recording regardless of the speech content. The transcript has been used as support for indicating the different VoMs detected in the audio recording.

Coding explanation (Table A14):

Turn 13 is coded with Connected, as the listener has the impression of an elaborative speech emitted by the therapist, who results in connections with herself and the patient (see the Category System of Vocal Modes).

Turn 14 shows two different and consecutive vocal modes, which are divided into segments 1 and 2. Segment 1 is coded as Emotional-Positive because the listener has the impression of a speech emitted by the patient that is charged by positive emotional strength. In the same turn, segment 2 is coded as Connected because the patient expresses an elaborative speech in connection with himself and the therapist (see the Category System of Vocal Modes).

Turns 15 and **17** represent a single verbalization, which is divided into two speaking turns due to the patient's backchannel (turn 16). The coder must consider all the turns constituting the speech as the context for coding each of them (see point 5 of the section General Steps for Coding VoMs). Therefore:

a) Turn 15 is coded with Connected because the therapist continues her speech in connection with herself and the other (see the Category System of Vocal Modes).

b) Turn 17 is coded with Connected as turn 15.

Turn 16 represents a backchannel emitted by the patient; therefore, it cannot be coded because of its shortness as well as being context-dependent (see point 4 of this section).

Minimum Conditions for Coding VoMs in a Speaking Turn

- Vocal modes Connected, Declarative, and Introspective can only be coded if the speech has a duration of two seconds or more. This condition is necessary for discriminating these VoMs and recognizing their respective constituent parameters.
- Vocal mode Reporting can only be coded if the speech longer than 4 seconds or more because some constituent parameters (change in dynamics and rhythm) require more time to be identified and to allow the coder to discriminate this VoM.
- Vocal modes Emotional-Positive and Emotional-Negative can be coded even in the case of a speech that lasts for less than 2 seconds.

- Vocal modes Pure Positive Emotion and Pure Negative Emotion are coded in the absence of verbalization and with speaking turns shorter than two seconds.

VoMs Coding in a Segmented Speaking Turn

If a turn is segmented due to two or more different and consecutive VoMs, the coder must assign the VoM that is clearly predominant as the final code (Table A15).

Table A15

Final Code of VoM in a Segmented Turn

Turn	Role	Transcript	VoM
14	P	Well! Um, none in particular (laughs) because I do not, not, not give it much thought. Um, everyone has their roles and… // Segment 1: Emotional-Positive Segment 2: Connected	Connected

Note. The coding was performed by analyzing vocal emissions and considering the duration of each segment in the audio recording regardless of the speech content. The transcript has been used as support for indicating the different VoMs detected in the audio recording.

Coding explanation (Table A15):

Turn 14 is segmented due to the presence of two different and consecutive vocal modes (Emotional-Positive and Connected). The final code of the speaking turn is Connected, as the latter represents the predominant vocal mode.

If two or more VoMs attributed to the segments have equal weight within the speaking turn, then the coder will assign as the final code (Hill, 1978; Tomicic, Guzmán, et al., 2015):

a) The VoM coded last if the speaking turn is that of the therapist (Table A16).

Table A16

Final Code of the Therapist's Turn with two VoMs of Equal Weight

Turn	Role	Transcript	VoM
23	T	Last week you were telling me about your relationship with your boyfriend, how it affected your mood and did not make you live well. . . would you like to tell me more about it? Segment 1: Introspective Segment 2: Connected	Connected

b) The VoM coded first if the speaking turn is that of the patient (Table A17).

Table A17

Final Code of the Patient's Turn with two VoMs of Equal Weight

Turn	Role	Transcript	VoM
26	P	On the one hand, I was not fully aware of the situation, so it took me a while to get a reaction inside me… there would be a lot to tell Segment 1: Emotional-Negative Segment 2: Introspective	Emotional-Negative

c) The vocal mode Emotional-Positive if it is one of the coded VoMs, as it has priority over all the others, even the vocal mode Emotional-Negative (Tables A18 and A19).

Table A18

Final Code in Case of Emotional-Positive and Another VoM With Equal Weight

Turn	Role	Transcript	VoM
104	P	There was a moment when I could not even communicate with my brothers, and I think it was the culmination of this black period I told you about. I have two older brothers who I am extremely fond of, with whom I have a wonderful relationship, but they have moved in with their girlfriends for work. Segment 1: Declarative Segment 2: Emotional-Positive	Emotional-Positive

Table A19

Final Code in Case of Emotional-Positive and Emotional-Negative With Equal Weight

Turn	Role	Transcript	VoM
35	T	Who would have thought it! It cannot get worse than this. Segment 1: Emotional-Negative Segment 2: Emotional-Positive	Emotional-Positive

d) The vocal mode Pure Positive Emotion if it is coded together with the VoM Pure Negative Emotion, as the former has priority over the latter.

This differentiation is defined only if two or more VoMs are predominant. It recalls the asymmetry principle characterizing the therapist-patient relationship (Soares et al., 2010), and the agent role having the vocal modes in influencing the emotional and psychological processes of the other participant by enriching the speech emitted (Searle, 1969/2017). Moreover, it recalls the principle by which the positive emotional processes assume a primary role in psychotherapeutic change (Burum, & Goldfried, 2007; Greenberg & Pavio, 2003).

If a speaking turn (or parts of it) has sound characteristics related to any VoM (e.g., Connected) and at the same time is charged with emotions (Emotional-Positive or Emotional-Negative), then the emotional mode is considered the code of that speaking turn (or part of it). All that is due to the principle of priority of emotional aspects in the process of therapeutic change (Burum, & Goldfried, 2007; Greenberg & Pavio, 2003; see Table A20).

Table A20

Resolution of the Double Coding of a Turn (Only When a VoM is Emotional)

Turn	Role	Transcript	VoM
108	P	No, when, when I think about what happened. . . Well…um… let's say I try to understand what happened, and…um...I try to establish a dialogue with that person (all emotionally charged).	Emotional-Positive

Coding explanation (Table A20):

In the audio recording, **turn 44** shows sound characteristics that are related to the vocal mode Connected, but the patient charges all speech with positive emotions. Therefore, Emotional-Positive is the final code since the priority of emotions in therapeutic change.

Coding of Multiple Segments due to Various VoMs

During the coding process, a single speaking turn may present multiple segmentations due to various VoMs at the same time. The coder may be faced with the following options.

If the turn includes more segments with the same vocal mode, then the coder must consider them together during the process of assigning the predominant code (Table A21).

Table A21

Final Code in Case of Multiple VoMs

Turn	Role	Transcript	VoM
44	P	Yeah, they work both. My mother is the one with the highest salary; she is the one who has to pay us a monthly maintenance check. Then, in my small way… my brother and I… we feel like, like we are constantly on the edge of a, a broken bank. Maybe, even when we could ask, we do not ask, just to avoid putting even more burdens on our parents. Segment 1: Declarative Segment 2: Emotional-Negative Segment 3: Connected Segment 4: Declarative	Declarative

Note. The coding was performed by analyzing vocal emissions and considering the duration of each segment in the audio recording regardless of the speech content. The transcript has been used as support for indicating the different VoMs detected in the audio recording.

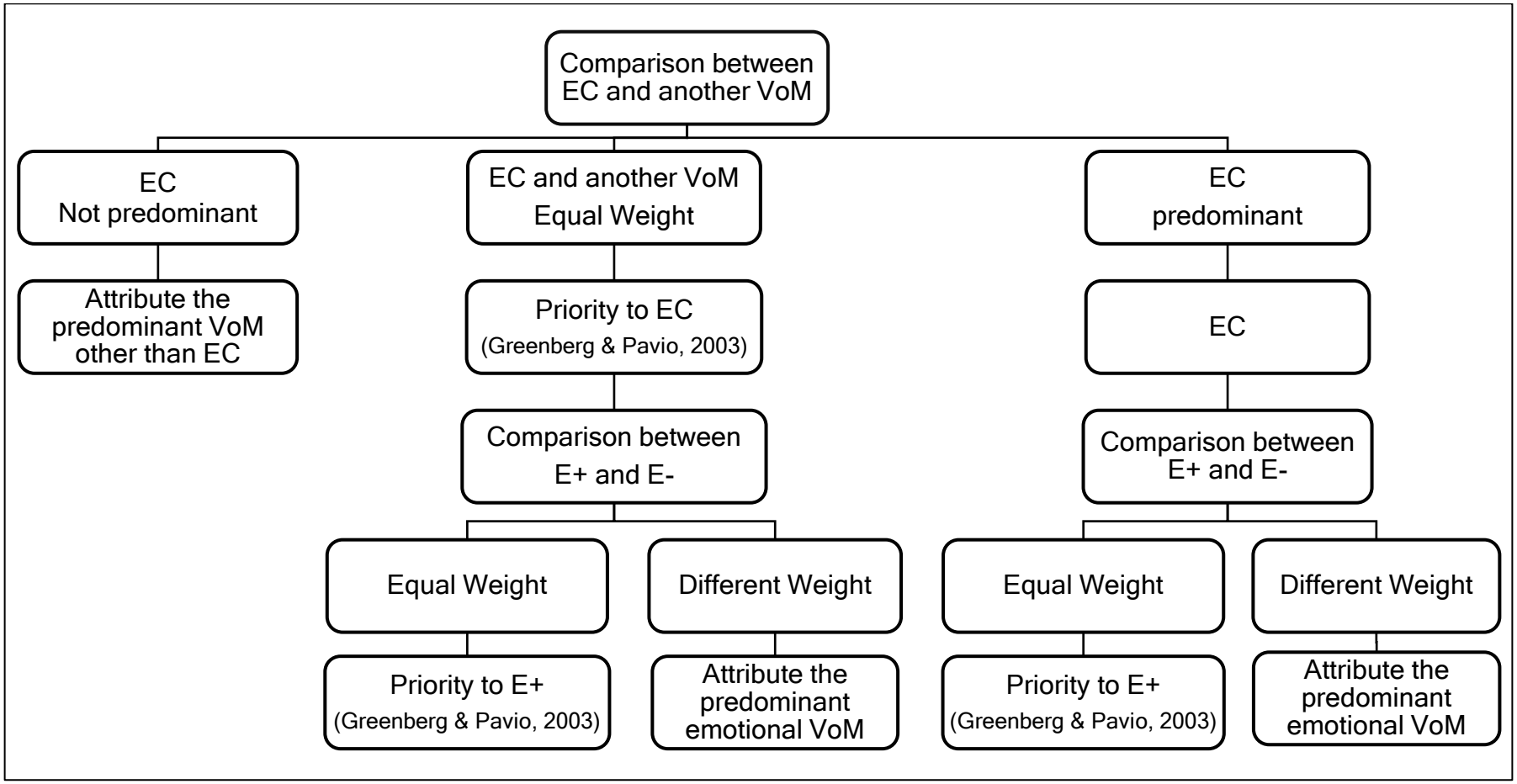
Coding explanation (Table A21):

Turn 44 shows multiple segments due to the presence of various vocal modes. Segments 1 and 4 have the same code (Declarative); therefore, they have to be considered together. By analyzing the audio track, the vocal mode Declarative is predominant over the others; therefore, it has been assigned as the final code of the entire speaking turn.

If the speaking turn includes Emotional-Positive and Emotional-Negative along with other vocal modes, then they must be considered as part of a single emotional category (EC). The coder will have to rely on the following decision tree to assign the final code (Figure A1):

Figure A1

Decision Tree in Case of Multiple VoMs Including the Emotional Category



Note. EC, emotional category; E+, Emotional-Positive; E-, Emotional-Negative.

Below some illustrative examples (Table A22):

Table A22

Illustrative Examples of the Decision Tree.

Case 1		
Role	**Transcript**	**Explanation**
P	I have never really asked myself that. Um, I think it is a legacy from the old days when I was very insecure, because, um, even when I was younger, I always tended to talk a little about myself, um, and be more interested in other people's stories.. Segment 1: Emotional-Positive Segment 2: Connected Segment 3: Emotional-Negative	The emotional category is not predominant compared to the VoM Connected. Therefore, the latter is the final code of the turn.
Case 2		
Role	**Transcript**	**Explanation**
P	It always takes me a little while to open up to people. Even when I meet a new person, I usually tell superficial things; that is, before I open up, it always takes me a little bit, so this unexpected question has me a little bit (laughs)… Segment 1: Introspective Segment 2: Emotional-Negative Segment 3: Emotional-Positive	The emotional category and the VoM Introspective have equal weight. Therefore, the former has priority over the latter (Greenberg & Pavio, 2003). Moreover, Emotional-Positive and Emotional-Negative have equal weight. The former is the final code of the turn.
Case 3		
Role	**Transcript**	**Explanation**
P	She has always had a passion for drawing, even though she attended a different school under pressure from my parents… um… but she has continued to cultivate this passion and … um…she improved it over the years, so much so that, so much so that she does some work on commission and she has some money. Segment 1: Emotional-Positive Segment 2: Declarative Segment 3: Connected Segment 4: Emotional-Negative	The emotional category is predominant. Moreover, the vocal mode Emotional-Negative is predominant over the Emotional-Positive one. Therefore, the former is the final code of the turn.

Extra-Linguistic Communication: Interruption Modes (IMs)

Several authors (e.g., Murata, 1994; Sacks et al., 2015) define interruptions as conversational phenomena that violate the turn-taking principles within communication exchanges. They occur when a participant (successfully or not) takes the floor to support or hinder the communicative exchange and co-construction of meanings (Li, 2001; Murata, 1994; Sacks et al., 2015; Van Eecke & Fernández, 2016). Reformulated according to the performative function of language (Searle, 1969/2017), interruptions can be assimilated to any intentional linguistic act (Kyrychenko, 2017; Wallis & Edmonds, 2017) performed in the form of interruption modes during communicative exchanges between the therapist and patient. These interruption modes, therefore, assume the role of active agents in developing the therapeutic discourse since they intertwine with the other communicative components during the two-way processes of co-construction of meanings, increasing the potential healer of communication between participants (Jones & LeBaron, 2002; Li, 2001; Li et al., 2005).

Following the observational methodology (Anguera et al., 2018), the CMASP includes one dimension for interruption modes, structured on axial criteria that revolve around the performative function of language (Searle, 1969/2017) and derive from the analysis of the literature related to this construct. By applying the observational methodology and adapting previous works (Goldberg, 1990; Li, 2001; Murata, 1994) to the purposes of the instrument, a set of E/ME categories has been constructed for the IM dimension, allowing the analysis of the constituent components of interruptions behaviors implemented by the therapist and patient. The IM dimension consists of the following eleven E/ME categories: Cooperative-Concurrence, Cooperative-Assistance, Cooperative-Clarification, Cooperative-Exclamation, Intrusive-Disagreement, Intrusive-Floor taking, Intrusive-Competition, Intrusive-Topic

change, Intrusive-Tangentialization, Neutral Interruption, Failed Interruption (for an in-depth description, see the Category System of Interruption Modes).

General Steps for Coding IMs

1. For IMs coding, the coder must prepare the material following the procedures indicated in Appendices A.2 and A.3. The transcript supports the listening and coding of the audio recording, which is performed through the Audacity® program (v. 2.3.0; Audacity Team, 2018). The audio recording is divided into speaking turns corresponding to those of the transcript itself (for the analysis, segmentation, and coding procedures through the Audacity® program, see Appendix A.3).
2. The Category System of Interruption Modes must be used as support for coding.
3. The coding is context-dependent; in other words, the entire conversation between the therapist and patient must be considered as the context for coding each speaking turn. Therefore, the coder will have to listen to the entire audio recording before coding to familiarize him/herself with the session climate.
4. The coder will have to listen to each speaking turn to identify the communicative exchanges where interruption behaviors by one participant occur.
5. By analyzing the audio recording, only the speaking turns of the interrupter will be coded according to the overall impression that results from listening to the interruption phenomenon and the fulfillment of the coding criteria of the Category System of Interruption Modes. In other words, the coder will identify the interruption mode based on the communicative intention expressed by the speech interrupting the current speaker.
6. When the interrupter's speech is divided into different turns due to the other's interjection, backchannels, non-verbal expressions [e.g., crying], or unintelligible

sentences, the coder must consider the set of speaking turns as the context for coding each one.

Coding of Interruption Modes (IMs)

As mentioned, IMs identify the participants' behaviors to take the floor (successfully or not), which foster or hinder the course of the therapeutic discourse and the co-construction of meanings. Specifically, they consider the impact that the interruption has on the listener of the therapeutic discourse. Eleven categories constitute the IM dimension: Cooperative-Concurrence, Cooperative-Assistance, Cooperative-Clarification, Cooperative-Exclamation, Intrusive-Disagreement, Intrusive-Floor taking, Intrusive-Competition, Intrusive-Topic change, Intrusive-Tangentialization, Neutral Interruption, Failed Interruption (for an in-depth description, see the Category System of Interruption Modes). Following the works of Goldberg (1990), Li (2001), and Murata (1994) readapted and extended for CMASP purposes:

1. The analysis unit is the speaking turn in the audio recording, which corresponds to the transcript one (the transcript is used as support for coding the different IMs).
2. The minimum unit of observation for coding is any meaningful speech, which (successfully or not) interrupts the current speaker and, in case, divides his/her speech into different turns.
3. The coder will assign an interruption mode per turn according to the communicative intent of the interrupting sentence, identified through the Category System of Interruption Modes (it is important to listen carefully to the audio recording).
4. Generally, all speaking turns are coded, except (a) turns that do not interrupt; (b) interjections (e.g., Ah! Well! Huh? Um) since they are not interruptions; (c) backchannels (e.g., yes, of course, mm-hmm, right, uh-hu, hmm) because they do not violate the turn-taking principles (Stenström, 1994); (d) non-verbal expressions

of emotions (e.g., laughing, crying); (e) unintelligible communications due to noises or distortions of the audio recording; (f) the part of the current speaker's speech that falls into a subsequent turn due to the interruption (unless that part itself is the continuation of an interrupting speech).

5. In the case of an interrupting speech divided into different turns due to interjections, backchannels, non-verbal expressions, or unintelligible sentences, the coder must assign the identified IM as many times as the turns constituting the interrupting speech (Table A23).

Table A23

Coding Example of Interruption Mode (IM)

Turn	Role	Transcript	IM
9	T	Are you pretending to be quiet or-//	
10	P	//no, no, no, no	Intrusive-Disagreement
11	T	-are you?//	
12	P	//some important news, but you accept them	Intrusive-Topic change
13	T	mm-hmm	
14	P	on the other hand, instead… um… (unintelligible) … the hothead reached out agai-	Intrusive-Topic change
15	T	(laughs)	

Note. The coding process was performed by analyzing the interruptions implemented by both participants. The transcript has been used as support for indicating the different IMs detected in the audio recording.

Coding explanation (Table A23):

Turn 10 is coded as Intrusive-Disagreement because the patient interrupts the therapist's speech to reject what she says (turns 9 and 11).

Turn 11 is the continuation of the sentence that has been interrupted and is not considered an interruption itself.

Turns 12 and **14** represent a new interruption, which is divided into two turns for the therapist's backchannel (turn 13). The coder must consider these turns as a single interrupting speech and assign the IM identified in turn 12 also to turn 14 (see point 5 of this section). Therefore, both turns are coded as Intrusive-Topic change since the patient interrupts by changing the topic in response to the therapist's question.

Turn 13 represents a backchannel emitted by the therapist that cannot be coded because it is not an interruption (see point 4 of this section).

Turn 15 is not coded because it does not represent an interruption (seen point 4 of this section).

Special Norms for Coding IMs

If a meaningful sentence immediately follows a backchannel, interjection, non-verbal expression of emotions (e.g., laughing), or unintelligible emission, then the speaking turn is considered as an interruption. In this case, the coder must assign the communicative intent of the meaningful sentence itself (Table A24).

Table A24

Coding Example in Case of Interjection Followed by Speech

Turn	Role	Transcript	IM
35	T	Do you want to let me know a little bit about your… difficulties about your...//	
36	P	//Um, Let's say it is not so much for the study; let's say it is for life itself.	Neutral Interruption

Coding explanation (Table A24):

In **Turn 36**, the patient takes the floor after a pause of the therapist, which creates uncertainty about the intention of the latter to continue (Neutral Interruption). This turn represents an interruption since the interjection is followed by a sentence immediately.

If a meaningful sentence follows a backchannel, interjection, non-verbal expression of emotions (e.g., crying), or unintelligible emission and the speech is divided into different turns, then the latter represents an interruption. In this case, the coder will have to consider all the turns as the context for coding each one (Table A25).

Table A25

Coding Example in Case of Emotional Expression Followed by Speech Divided in Turns

Turn	Role	Transcript	IM
21	T	Did you sing in front of a lot of people?//	
22	P	//Yes (laughs). Let's say the hall was full, and there was a famous actor	Cooperative-Concurrence
23	T	Ah!	
24	P	in the front row	Cooperative-Concurrence

Coding explanation (Table A25):

Turn 22 represents a single interruption since the patient takes the floor emitting a non-verbal emotion, suddenly followed by a speech. Moreover, this interruption continues in **turn 24** due to the interjection of the therapist that divides the interrupting speech (turn 23). Therefore, turns 22 and 24 are coded with Cooperative-Concurrence since the patient shows agreement and develops the question of the therapist.

Turn 23 is not coded as an interruption since it is an interjection (see point 4 of the section Coding of Interruption Modes).

Speech is also interrupting if the participant takes the floor when the current speaker's turn ends with a backchannel, interjection, non-verbal expression, or unintelligible emission (Table A26).

Table A26

Coding Example of Interruption in the Case of Speech with Unintelligible Ending

Turn	Role	Transcript	IM
86	P	I told my parents about my experience	
87	T	hmm	
88	P	in America in this (unintelligible)//	
89	T	//And how did they react?	Cooperative-Concurrence
90	P	Um	

Coding explanation (Table A26):

Turn 87 is not coded as an interruption since it is a backchannel.

In **turn 89**, the therapist takes the floor in the presence of an unintelligible ending of the patient's speech. It is coded with the IM Cooperative-Concurrence since the therapist interrupts to deepen the idea presented by the patient.

Turn 90 is not coded as an interruption since it is an interjection.

IM Intrusive-Competition is always produced by a series of mutual and continuous interruptions by both participants. This IM is the only one that results from the joint action of the therapist and patient, who create a context of competitive interruptions. In this case, the coder must assign Intrusive-Competition to all the therapist's and the patient's turns involved in the "struggle" to take the floor (Table A27).

Table A27

Coding Example of Multiple and Concurrent Interruptions Between Participants

Turn	Role	Transcript	IM
166	P	I don't know, I just see these steps, I mean, I saw my mom who… finally took a stand, in quotes, concerning what she was experiencing … and I sank into a deep depression, I mean, I just remember this, um-//	
167	T	//Did mom–//	Intrusive-Competition
168	P	//-I couldn't-//	Intrusive-Competition
169	T	//–take a stand–//	Intrusive-Competition
170	P	//-wake up in the-//	Intrusive-Competition
171	T	//–on what she was living	Intrusive-Competition

Note. The coding process was performed by analyzing the interruptions implemented by both participants. The transcript has been used as support for indicating the different IMs detected in the audio recording.

Coding explanation (Table A27):

Turn 167 starts a struggle for taking the floor where participants compete through a series of co-occurring and continuous interruptions. For this reason, the coder must assign the IM Intrusive-Competition as many times as there are the therapist's and the patient's turns involved (from turn 167 to 171).

Part 2

Category Systems of the CMASP

Category Systems of Verbal Modes

This chapter presents the categories of the dimensions Verbal Mode-Structural Form (VeM-SF) and Verbal Mode-Communicative Intent (VeM-CI), derived from previous works (Hill, 1978; Krause et al., 2009; Stiles, 1992; Valdés et al., 2005, 2010) and the observational methodology application (Anguera et al., 2018). According to the CMASP structure, the two category systems, identifying the structural form and communicative intent of each verbalization, respectively, can be applied to the therapist and patient. The coding is nominal, and the set of categories of each dimension is exhaustive and mutually exclusive (E/ME condition[7]; Anguera et al., 2018). At the end of the coding process, if the turn is segmented due to multiple verbal modes, the coder will have to assign the predominant VeM-SF and/or VeM-CI. The chapter provides for each category of the two dimensions the description, inclusion criteria, as well as examples and counter-examples.

Categories of the Dimension Verbal Mode-Structural Form (VeM-SF)

Six E/ME categories characterize the VeM-SF dimension: Courtesies, Assertion, Question, Agreement, Denial, and Direction.

Courtesies (SF1)

The structure of the speaker's verbalization expresses a receptive language according to social conventions.

Examples:

"Hello." "Good morning." "Good afternoon." "Goodbye." "Happy holidays." "Thank you." "You are welcome." "Sorry." "Excuse me." "I wish you Merry Christmas."

[7] E/ME condition: the coder assigns one and only one VeM-SF and/or VeM-CI to a turn or its segment.

Counter-Examples:

P: May I come in?

The speech is coded with the VeM-SF Question (SF3) since it expresses a request for information.

T: Go ahead.

The verbalization expresses the VeM-SF Direction (SF6), as it encourages the other toward behavioral actions.

Assertion (SF2)

The structure of verbalization expresses something that is considered true by the speaker or refers to a certain state of things.

Examples:

"I feel empty." "I am having trouble concentrating." "I generally feel better." "The moment I asked you what you were expecting, you stayed a while...you said, 'I got to the end. Maybe, I will have a chance to begin it up later'."

Counter-Examples:

T: Why do you think it happened?

The speech is coded with VeM-Question (SF3), as it is structured in the form of a request for information.

P: No, it is not like that.

The verbalization is coded with VeM-SF Denial (SF5), as its structure rejects what the other said.

Question (SF3)[8]

The structure of verbalization is in the form of a request for specific information.

Example:

"Do you want to tell me why?" "And this laziness, for example, in what…"

Counter-Example:

T: Tell me a little.

The speech is coded with VeM-SF Direction (SF6) since it encourages the other toward cognitive actions.

Agreement (SF4)

The structure of verbalization recognizes as certain or true what the other has said.

Examples:

"Mm-hmm." "Right." "Ok." "Mh." "Yes." "Sure." "Maybe." "All right." "It could be."

Counter-Examples:

"All right?" "Ok?" "Yes?" "Sure?"

These verbalizations are coded with VeM-SF Question (SF3) as they require information from the other.

P: It's all right now.

The speech has a structure that refers to a specific state of things; therefore, it is coded with VeM-SF Assertion (SF2).

[8] VeM Question represents a complex category that results from the combination of different aspects (e.g., social actions, the characteristics of turn; Stivers & Rossano, 2013). The CMASP considers various forms of questions, indicating different degrees of disparity in the mutual knowledge of participants (Park, 2012).

Denial (SF5)

The structure of the speaker's verbalization rejects the truth of what the other said.

Examples:

"No." "No way." "Absolutely not." "Not at all."

Counter-Example:

T: It is not wrong.

The speech is coded as VeM-SF Assertion (SF2) since its structure expresses a certain state of things.

Direction (SF6)

The verbalization has a structure that guides the behaviors of the other by fostering his/her cognitive, emotional, or behavioral actions.

Examples:

"Tell me what's wrong." "Go ahead." "Try to imagine what it would be like."

Counter-Example:

T: Would you like to tell me what's wrong?

The verbalization is coded with VeM-SF Question (SF3) since it has the structure of the request of information.

Categories of the Dimension Verbal Mode-Communicative Intent (VeM-CI)

Eight E/ME categories characterize the VeM-CI dimension: Acknowledging, Informing, Exploring, Deepening, Focusing, Temporizing, Attuning, and Resignifying.

Acknowledging (CI1)

The communicative intent of the speaker is to take the standpoint of the other participant about his/her experience, without making no presumption of it. It does not imply that the speaker has actual or specific knowledge of the other's experience. All this translates into a communicative intent that expresses receipt of or receptiveness to communication from the other. VeM-CI Acknowledging is characterized by:

a) Receipt of communication (backchannels): "Mm-hmm." "Yes." "Sure." "Ok."

   Example:

   P: Yeah, I have been struggling for a while.

   T: Mm-hmm

   P: At first, I thought it was harder to get

   T: Yes

   P: psychological advice.

b) Receptiveness to communication (courtesies): "Hello." "Good morning." "Good afternoon." "Goodbye." "Happy holidays." "Thank you." "You are welcome." "Sorry." "Excuse me." "I wish you Merry Christmas."

   Example:

   T: Have a nice day.

   P: Bye.

Counter-Examples:

T: Do you have an idea yet?

P: Yes.

The patient's verbalization is not a backchannel; on the contrary, it represents a sentence where subject and predicate are implicit but inferable (it is equivalent to "Yes, I already have an idea"). Therefore, the speech is coded with VeM-CI Exploring (CI3), as its communicative intent is to provide information.

P: It wasn't easy to deal with all this.

T: I see.

The therapist's speech is coded with VeM-CI Attuning (CI7) since she shows understanding for the patient.

T: But then, did you get to sleep that night or not?

P: Um…um.

The patient's communication is an interjection and cannot be coded.

P: No, I couldn't calm myself that night, but yesterday I could.

T: Yes, and...

P: Um...

The therapist's verbalization "Yes, and.." does not meet the criteria for Acknowledging or another VeM-CI. Therefore, it cannot be coded.

Informing (CI2)

The communicative intent of the speaker is to provide or request information about the *hic et nunc* of the therapy in the form of data, facts, resources, and theory or assessment parameters. The information may be specifically related to the consultation process, the therapist's behaviors, or arrangements (e.g., time, fee, location).

Examples:

"What the service can offer right now are twelve interviews." "Are you okay next Thursday?" "For today, we must stop here." "I'm always free on Wednesday afternoons." "See you next week." "Do I have to fill out the questionnaires?"

Counter-Examples:

P: I also remember the, the Rorschach tests.

T: Mh

P: I could not bear to be told the result…all these things.

The patient's verbalizations are coded with VeM-CI Exploring (CI3), as he refers to events not related to the here and now of the therapeutic relationship.

T: Would you like to tell me a little bit about your life? What is it, what do you do…?

P: May I also refer to the past or…?

The patient's verbalization is coded with VeM-CI Deepening (CI4), as he asks for clarification regarding the therapist's question.

P: I'd rather… yeah, bang my head but… yeah, go ahead and not, not stall.

T: How long have you been in care by Dr. D.?

The therapist's verbalization is coded with VeM-CI Focusing (CI5) since she introduces a new theme in front of the patient's communication.

T: (laughs) Looks to me like you came back right now

P: Yes

T: to finish what you started with Dr. F.

The therapist's verbalizations are coded with VeM-CI Resignifying (CI8), as she provides new meanings by connecting different aspects of the patient's experience.

T: Is that okay with you?

P: All right.

Both communications do not meet the minimum criteria for VeM-CI coding.

"We will be closing the window soon." "Do you mind if I turn the air conditioner on? "I'm turning the audio recorder off." "It's hot."

These verbalizations do not concern the therapeutic interaction and what brings the patient into the session. Therefore, VeM-CIs cannot be assigned.

Exploring (CI3)

The communicative intent of the speaker is to research or provide unknown content.

a) We look for content when we ask for information about facts, knowledge, events, or feelings, or when we ask for the causes/reasons for content or behavior.

   Examples:

   "Would you like to tell me why you're here?" "How was it for you to move to Genoa?" "How does your aunt's presence affect you when you come home?" "Is it scary to admit?" "I gave too much importance to others." "Every time I called my father, he would talk to me about his illnesses." "I've always been a happy child."

b) The speaker provides content when he/she gives information focused on facts, knowledge, events, or feelings, when he/she provides new content in the form of stories or descriptions of past, present, or future experience, or when he/she describes a feeling (or mood).

Examples:

"I talked to the judge." "I'm feeling pretty overwhelmed…Um, I finnd, I have very little energy to dooo any kind offf activity, especially academics" "Before the divorce, we got along so well; we were like the perfect family." "The pain in my arm is especially bad when I'm under stress."

Counter-Examples:

T: The consulting service closes soon.

The therapist's verbalization is coded with VeM-CI Informing (CI2), as she provides information about the therapy parameters.

P: It was about 60 people.

T: Are there any important people?

The therapist's verbalization is coded with VeM-CI Deepening (CI4), as she asks for an explanation of what the patient has said.

P: It happened towards the end of the first year of university.

T: Therefore, you are very angry…

The therapist's verbalization is coded with VeM-CI Focusing (CI5), as she introduces a new topic in front of the patient's speech.

T: I realize it is a difficult question this way (laughs).

The therapist's verbalization is coded with VeM-CI Attuning (CI7), as she participates emotionally in the patient's reality.

P: I think the right thing is to put it off until the time when I actually need it.

T: But it seems to me that this thought is costing you a lot of energy.

The therapist's verbalization is coded with VeM-CI Resignifying (CI8), as she questions what the patient says and gives a new meaning.

Deepening (CI4)

The communicative intent of the speaker is to develop the description, presentation, or discovery of certain content.

a) The speaker deepens when investigating the truthfulness of a statement made by the other that is questioned.

   Example:

   P: I couldn't live without my friends but, in the end, I'm fine on my own.

   T: So, can you do without them?

   (In the same speech, the patient questions what she says; therefore, the therapist goes deeper. It is not a VeM-CI Resignifying because the intent is focused on the given information and not on the attribution of new meanings).

b) The speaker deepens when he/she corrects the other's understanding.

   Examples:

   P: Honestly, this criticism of yours, uh… maybe, I tend to exaggerate in some situations.

   T: No, that was not a criticism.

   or

   T: Don't worry, you can say what…

   P: No, on the contrary, I'm thinking if… I am thinking again if these things sound right to me.

c) The speaker deepens when he/she substantiates/corroborates/confirms something stated by the other (an opinion, facts, or new content provided or requested).

Examples:

T: What do you study?

P: Music.

T: Indeed, I see you have an instrument there with you.

or

T: You are one of the oldest.

P: Yes, I'm there for seniority. I've been in the same residence for six years.

or

T: (laughs) well, even five years maybe. . . there are also different needs.

P: Yes, I actually wanted things that she didn't like.

d) The speaker deepens when he/she requests an explanation concerning the content of the other's verbalization.

Examples:

T: Would you tell me a little bit about your life? What is it, what do you do…

P: "May I also refer to the past or…?

or

P: When I was younger, I had always had trouble communicating, but it helped me find a girl.

T: But she's a girlfriend you've had for many years?

or

P: I lived in Perugia for three years, commuting to study in Rome.

T: So, do you still live here in Perugia?

Counter-Examples:

T: (laughs) how's this girl?

P: Well, she's, um, she's a little anxious…

The therapist's and patient's verbalizations are coded with VeM-CI Exploring (CI3), as they request and provide information about the experience, respectively.

P: Coming here was something I wanted; so, I was calm about the choice I made.

T: Today, I would like to ask you if you want to tell me a little more about your family, how your life was, how you grew up.

The therapist's verbalization is coded with VeM-CI Focusing (CI5), as she introduces a new topic after the patient's communication.

P: What do you mean?

T: In the sense that it's clear that you have analyzed yourself a lot, that you've been thinking about.

The therapist's verbalization is coded with VeM-CI Attuning (CI7), as she provides feedback by supporting the capabilities of the other.

T: Mh, yes…maybe the effort is to put together the pieces

P: Mh

T: of what you learned about yourself while you were in Spain and Italy.

The therapist's speech is coded with VeM-CI Resignifying (CI8), as she relates different aspects of the patient's experience.

Focusing (CI5)

The speaker's communicative intent is to direct attention and effort toward a specific topic of conversation. All this occurs when:

a) The speaker introduces a new topic.

Examples:

P: Let's see…Well, let's start with the motivation.

or

P: It's not the same as having friends in their 30s with whom, surely, you can share other things, other thoughts

T: So, you got married young

or

P: It was my first congress. . . it was a turbulent experience.

T: (laughs) What effect did it have on you thinking about last week's session?

b) The speaker goes back to a topic that was discussed earlier in the session.

Example:

T: Back to you for a moment, how did you feel the next few days?

c) The speaker summarizes a discussed topic.

Example:

P: We wanted to have lunch in the restaurant of our first date, but it was closed; so, we took some street food and took a walk through the streets of the city. In the end, we stopped in a square and took lots of pictures.

T: It was an exciting day where you did a lot of things together.

d) The speaker defines the limits of a speech.

Examples:

"Instead, back to us and today." "Leaving this difficult situation out a little bit, then we'll go back to it." "Let's step back then. Let's pretend you never came here and start from scratch. I mean, let's pretend (laughs) that I've never seen anything."

Counter-Examples:

P: Usually, I'm not used to talking about my things; also, talking to someone you don't know is not easy. . . Yes, it was very difficult.

The patient's communication is coded with VeM-CI Exploring (CI3), as it provides information about her emotional state in front of the therapist's requests.

P: For the Professors, we are simply a number; instead, to the master's degree, being classes of fifteen, maximum of twenty…

T: Ah, you are few!

P: Yes, because they are the last exams to choose from.

The verbalizations of the therapist and patient are coded with VeM-CI Deepening (CI4), as they both corroborate each other's communications.

P: It's something I've always done, even when I was a kid. Maybe, I know there's a problem, but I'll deal with it when there's a reason to do so.

T: This is fine. It's not wrong.

The therapist's verbalization is coded with VeM-CI Attuning (CI7), as it supports the patient's resources and behaviors.

P: If I had to identify a cause of my discomfort, I would definitely say they are my parents because they, um, are going through a period of divorce.

The patient's communication is coded with VeM-CI Resignifying (CI8) as he connects different aspects of his experience.

Temporizing (CI6)

The communicative intent of the speaker is to take a suspended position in front of the other participant's speech. It allows the speaker to get in touch with his/ her thoughts and/or feelings or to avoid momentarily facing the demands of the previous communication.

Examples:

T: How did you feel? … how?

P: How I felt…

or

T: But going home… what's it like to go back to Tuscany?

P: How to go back to Tuscany…

or

P: Can we move the appointment to Friday?

T: Then. . . let's see… … …

or

T: Tell me about it.

P: Okay, let's see… … … I'm in my second year of college.

Counter-Examples:

T: Is this something that didn't happen before?

P: It's something that didn't happen before because I always had a bit of tension.

The patient's speech is coded with VeM-CI Exploring (CI3) since he does not remain suspended but begins to give information immediately.

Attuning (CI7)

The communicative intent of the speaker is to understand or be understood by the other, harmonize with the other, provide feedback in the *hic et nunc* of the therapeutic interaction.

a) The speaker can verify his/her understanding by examining what he/she has understood about the other's speech, or the speaker can express that he/she has understood the other's actions or thoughts. Moreover, the speaker can tell the other how his/her actions or thoughts have been understood.

Examples:

T: Maybe, there can be other ways to achieve the goal you set yourself.

P: Let me see if I understand this; you're trying to tell me that there's no need to persevere with this situation.

or

P: And so he has awakened this aspect of mine that I had silenced.

T: Yes, he has awakened the idea of family, of building something together.

or

T: Having a dialogue with your parents would allow you to express your needs.

P: In other words, I should avoid being silent when they try to talk to me."

b) The speaker harmonizes with the other by communicating that he/she participates emotionally in the reality of the latter.

Examples:

"I imagine this is a difficult situation for you." "It doesn't have to be easy for you." "Your parents' divorce must have been a painful moment for you and your sister."

c) The speaker gives feedback by approving/disapproving the other's behaviors, meanings, or emotions (e.g., he/she highlights the other's potential or the changes the other has had compared to a previous situation). Moreover, he/she can provide feedback by showing the other's emotions or expressing the emotional impact the other has had on the speaker (e.g., he/she can examine the emotional and/or cognitive effect his/her verbalization has had on the other and vice versa).

Examples:

"You didn't talk too much." "Go ahead, don't worry." "You have a lot of resources." "You look calmer than you did last time we met." "Don't worry… you can say it." "You seem very angry with your boyfriend." "You always describe your parents as absent." "I'm making you angry too… (laughs)." "You didn't like my question, did you?"

Counter-Examples:

P: Luckily, I had so much to do, so I thought about my things.

T: Well, that question really upset you.

The therapist's verbalization is coded with VeM-CI Exploring (CI3), as it refers to facts that emerged in the previous session and not in the *hic et nunc* of the interaction.

P: I was thinking about entrusting… but maybe… I think I usually made the decisions myself, maybe, maybe (sighs).

T: Well, then explain it to me.

The therapist's communication is coded with VeM-CI Deepening (CI4), as she requires an explanation of the patient's communication.

T: Let's leave this difficult situation aside for a moment. Would you tell me what you like to do?

P: I like to write… Even this story of my parents, when I think about it now, I should have realized that it was my father to pour salt into a wound.

The therapist's and the patient's verbalizations are coded with VeM-CI Focusing (CI5), as the former defines the boundaries of the speech, while the latter goes back to talk about the topic discussed previously after answering.

P: My dad and I always fight as soon as we try to communicate.

T: Maybe you tend to get defensive when you feel judged.

The therapist's speech is coded with Resignifying (CI8) as it challenges what the patient reports by assigning a new meaning.

Resignifying (CI8)

The communicative intent of the speaker is:

a) To offer a new perspective on reality.

   Examples:

   "Sounds to me like you're talking about the fear of not being understood." "What I think is that you came back here with a whole bunch of things to fix but without an actual request." "Sounds to me like your problem is a place for you and your things."

b) To connect content to others that characterize the speaker's experience or that of the other participant.

Examples:

"You were talking about wanting to get away from your family, from your city, and building something for yourself. However, it seems to me that, at the same time, this thing scares you a lot because it confirms like it establishes the difference between you and your family…" "Since we broke up, I've noticed that I have no interest in approaching someone else, and my studies are suffering." "The moment I asked you what you were expecting, you stayed a little… 'Oh, God! Should I expect anything?' (laughs) and then you said, 'fix what's wrong'."

c) To recognize or establish a pattern of psychological functioning.

Examples:

"As in other situations, it is as if this aspect of anger came out a little veiled." "You have a very reasoned mode of approaching things." "It goes against your usual way where you have to be sure of everything." "I realized that anxiety begins the moment I'm alone."

d) To question content.

Examples:

"The first time, you said, "no." Then, when you came back the second time, you said you'd thought about it." "Well, it's one thing to know it's normal, but it's another to accept it."

Counter-Examples:

T: Do you want to tell me about this difficult time?

P: I had a hard time, so I was stuck with my career... um… I pulled myself together. I wanted to be independent… so…um… I had the opportunity to start teaching.

The patient's speech is coded with VeM-CI Exploring (CI3) since he provides information required, but he does not connect and recognize a deeper meaning.

P: Yeah, it's…in September, it'll be seven years, um…

T: So you were very young when…

P: Yeah, I was a junior in high school.

The therapist's and patient's verbalizations are coded with VeM-CI Deepening (CI4), as they corroborate each other's discourses.

P: Yes, because everything in my family is hidden, so…

T: (smiles slightly).

P: that's how it works.

T: (smiles slightly) … Instead, back to your graduation, how do you imagine your mom and dad that day?

The therapist's verbalization is coded with VeM-CI Focusing (CI5), as she goes back to an already discussed topic.

P: We got married. . . we both had some peculiar families, so we just wanted to leave... we were a nice couple… for me, it was hard to understand that (she's about to cry).

T: It still hurts you…

The therapist's turn is coded with Attuning (CI7) since she recognizes the other's emotions and provides feedback.

Category System of Vocal Modes

This chapter presents the categories of the dimension Vocal Mode (VoM), derived from the previous work of Tomicic, Guzmán, et al. (2015) and the observational methodology application (Anguera et al., 2018). According to the CMASP structure, this dimension identifies the vocal modes through a single category system that can be applied to the therapist and patient within the context of the Italian language. Each category is defined based on the impact that the vocal mode has on the listener of the therapeutic discourse regardless of the verbal content (i.e., the vocal emission may not be consistent with the verbalization). Moreover, each vocal mode is characterized by a specific combination of acoustic parameters (tone, intensity, duration, and timbre) that enriches the meaning of the verbal content (Andersen, 2008) and supports the coder in discriminating one VoM from the other. The coding is nominal, and the set of categories is exhaustive and mutually exclusive (E/ME condition[9]; Anguera et al., 2018). At the end of the coding process, if the turn is segmented due to multiple VoMs, the coder will have to assign the predominant one. The chapter presents a summary scheme of the acoustic parameters characterizing the vocal modes. Moreover, for each VoM, it provides the description, inclusion criteria, and examples and counter-examples[10].

Acoustic Parameters of VoMs

Based on the work of Tomicic, Guzmán, et al. (2015), this chapter provides an overview of the acoustic parameters (tone, intensity, duration, and timbre) that characterize the different

[9] E/ME condition: the coder assigns one and only one VoM to each speaking turn or its segment.

[10] To access the audio recordings in MP3 format and their transcripts in Italian of the examples and counter-examples related to the original version of the manual, please contact the first author.

vocal modes through their specific combinations and that support the coder in discriminating one VoM from the other during the coding process (Table A28)[11].

Table A28

Components of Acoustic Parameters (part 1)

Tone *(corresponding to high-or low-pitched sound and the melodic character of the speech)*			
Prosody *(or melody of speech)*	**Medium tone of speech** *(the most used tone)*	**Accent** *(way of emphasizing sound)*	**End of sentence** *(melodic inflection in closing the sentence; the complete sentence should be considered)*
Exaggerated Medium Monotonous Repetitive	High-Pitched Medium Low-Pitched	Dynamic *(increased intensity)* Agogic *(increased duration)* Tonic *(increased tone)*	Anti-Cadence *(high-pitched end)* Half-Anti-Cadence *(half-high-pitched end)* Suspended Half-Cadence *(half-low-pitched end)* Cadence *(low-pitched end)*

Intensity *(corresponding to the volume of voice)*	
Medium volume of speech *(the most used volume during speech)*	**Variations and Dynamic[12]** *(volume variations during speech)*
High	High
Medium	Medium
Low	Low

(continued)

[11] The acoustic parameters are provided with audio examples in MP3 format. To access them, please contact the first author.

[12] Each parameter of variation and dynamic may assume the following trend: Crescendo, Sustained, or Decrescendo

Table A28 (continued)

Duration *(corresponding to the length [longer or shorter] of the sound emitted)*			
Vocal attack *(way to start the sound)*	**Speed** *(rapidity o slowness of speech)*	**Pace** *(fluidity of speech)*	**Pause** *(silence duration)*
Hard or glottal *(plosion at the beginning of the sound emitted)* Breathy or aspirate *(puff of air at the beginning of the sound emitted)* Soft or simultaneous *(without initial plosions or puffs)*	Fast Medium Slow	Fluid Not fluid *(with prolongations, repetitions, o stops)*	Long Medium Short

Timbre *(specific quality of voice)*	
Flexibility *(variation of the other voice parameters [tone, intensity, and duration])*	**Color e brightness** *(the color of voice can be clear or dark; the brightness can be bright or opaque; they vary according to the emotional state)*
High	Clear-Bright
Medium	Clear-Opaque
Low	Dark-Bright
	Dark-Opaque

Categories of the Dimension Vocal Mode (VoM)

Eight E/ME categories characterize the VoM dimension: Reporting, Connected, Declarative, Introspective, Emotional-Positive, Emotional-Negative, Pure Positive Emotion, and Pure Negative Emotion.

Reporting (VM1)

According to this vocal mode, speech is characterized by a lack of affection and emotional distance. The listener has the perception that the speaker is reporting or telling something without emotional involvement. In terms of acoustic parameters, VoM Reporting (VM1) is characterized by repetitive prosody (Tone), dynamic variation (Intensity), agogic accent (Tone). Finally, it usually presents fluid pace (Duration) (see audio folder VoM Reporting [VM1]).

Examples:

T: what to advise you, how to deal with your difficulties, and… (audio track 1)

or

P: I was very well, I could sleep, I could do everything I had to d- (audio track 2)

or

P: You need, need to stop thinking only of yourself. You need to start thinking for two (audio track 3)

Counter-Examples:

T: even though things have changed, even though things have changed around you (audio track 1)

The speech is coded with VoM Declarative (VM3), as the therapist is convincingly explaining to the patient (see characteristic acoustic parameters).

P: Yeaah… yeah, yeah… it must be... don't know, I don't know why; it just came out like that (audio track 2)

The speech is coded with VoM Introspective (VM4), as the patient is engaged in a dialogue with himself (see characteristic acoustic parameters).

P: but, yes, there weeere…but there was also this this fear, a-, always this fear of being judged, of being-, I couldn't go to class because I felt older than the others, becaause, well, don't know, I lost two years since I couldn't do anything (audio track 3)

The speech is coded with VoM Connected (VM2), as the patient elaborates it while speaking, in connection with herself and the therapist (see characteristic acoustic parameters).

Connected (VM2)

According to this vocal mode, speech is characterized by an elaborative process, oriented towards the other when it is emitted. The listener has the perception that the speaker is connected or attuned to him/herself and the other, giving the latter the space to intervene. In terms of acoustic parameters, VoM Connected (VM2) is characterized by a sentence ending with anti-cadence (Tone), agogic accent (Tone), soft vocal attack (Duration). Finally, it can sometimes present pauses and not-fluid pace with prolongations and repetitions (Duration) (see audio folder VoM Connected [VM2]).

Examples:

T: that sounds to me like youuur problem… a place for you and.... (audio track 1)

or

P: Um, basicallyyy…um, I'm feeling pretty overwhelmed…Um, I finnd, I have very little energy to dooo any kind offf activity, especially academics; indeeed, um… my studies are suffering a lot from it, and eveeen those activities thaaat… um, I used to be interested in, now they are beginning to interest me less and less (audio track 2)

or

P: She is a teacher, so she haaad, well…she won the c-, the competition, so made this choice. Um… my sister Cristinaaa did it because of Enrico's work needs because…

with the crisis, well, his company in Sicily was not going well; hence, he had this opportunity with my father, well, why not take advantage of it… (audio track 3)

Counter-Examples:

T: Yeah… yeah, yeah… … ok (audio track 1)

The speech is coded with VoM Introspective (VM4), as the therapist is engaged in a dialogue with herself (see characteristic acoustic parameters).

P: Weeell. I was… Last night when I couldn't sleep, I was a littleee, a little worried again, but then… in the morning, I asked… myself, "why?" (smiles slightly), in the sense that I said, "it's always the same thing," and sooo. . . let's just say yesterday was better (audio track 2)

The patient's speech is coded with VoM Emotional-Positive (VM5), as it is charged with positive emotion (see characteristic acoustic parameters).

P: that all th-, the-, the loss of attention, the fact that I felt less and less worried about what… th-, the otheeer person might think about me, the heaviness that I could cause to the other person (audio track 3)

The speech is coded with VoM Reporting (VM1), as the patient is reporting in the form of a list of facts with emotional detachment (see characteristic acoustic parameters).

Declarative (VM3)

According to this vocal mode, speech is characterized by security, certainty, and conviction. The listener has the perception that the speaker is teaching, instructing, explaining to the other, or that the speaker is convinced of what he/she is saying. The other has a little space for intervening. In terms of acoustic parameters, the VoM Declarative (VM3) is

characterized by a sentence ending with cadence or suspension (Tone). Moreover, it presents a dynamic or tonic accent (Tone), hard vocal attack (Duration), fluid pace (Duration), and often increased medium volume (Intensity) (see audio folder VoM Declarative [VM3]).

Examples:

T: it confirms like it establishes the difference between you and your family (audio track 1)

or

P: my sister and I are no longer willing to… continue our relationship with people who are… deliberately hurting us (audio track 2)

or

P: If I made that decision, it's because I was starting to feel good (audio track 3)

Counter-Examples:

T: How were these weeks? (smiles slightly)

The speech is coded with VoM Emotional-Positive (VM5), as the therapist speaks with a voice that expresses positive emotions (see characteristic acoustic parameters).

P: It just happened thaaat… when I was talking to my mother about… the ISEE document that I applied for the scholarship, it turned out that maybeee… for my financial situation, I will not, not be eligible and sooo… don't know

The speech is coded with VoM Connected (VM2), as the patient elaborates it while speaking, in connection with himself and the other (see characteristic acoustic parameters).

P: for work because they were still married, then…well, everything happeeened after that, um…yeah, I was living this, this heavy life, and I had to escape

The turn of speech is coded with VoM Introspective (VM4), as the patient is engaged in a dialogue with herself (see characteristic acoustic parameters).

Introspective (VM4)

According to this vocal mode, the speaker's speech is self-directed and introverted. The listener has the perception that the speaker is in connection with his/her inner world or engaged in a dialogue with him/herself. In terms of acoustic parameters, VoM Introspective (VM4) is characterized by decreased medium volume and decreasing dynamics (Intensity). Moreover, on many occasions, it has a slow speed and long pauses (Duration) (see audio folder VoM Introspective [VM4]).

Examples:

T: I think about when you were little... when you were a younger girl… (audio track 1)

or

P: No, I don't know; I mean, in the seeense… yeah, as we said last time, I usually say what I think withooout… feeaaar… … yeah, I'm a little, a little conditioned by the fact... … (audio track 2)

or

P: I don't think it's a bad thing or… I don't think it's… … something… so… … … (audio track 3)

Counter-Examples:

T: According to you, befooore… this guy came into your life…um…youu… howww… how did you experience this sense, this feeling, this idea of being lonely? (audio track 1)

The speech is coded with VoM Connected (VM2), as a therapist elaborates while speaking, leaving the patient space to intervene (see characteristic acoustic parameters).

P: and this also affects my interpersonal relationships (audio track 2)

The patient's speech is coded with VoM Declarative (VM3), as he explains with conviction (see characteristic acoustic parameters).

P: it scares me… I do not haaave the economic… stability that, that I would like… … though, yes… I would like that… I think.

The speech is coded with VoM Emotional-Negative (VM6), as the patient's voice is charged with negative emotions (see characteristic acoustic parameters).

Emotional-Positive (VM5)

According to this vocal mode, the speaker's speech expresses positive affection and/or positive emotional strength. The listener has the perception that the speaker expresses positive emotion (e.g., joy, happiness, sweetness, excitement, fun, sympathy, curiosity, understanding) by modulating the verbal content (e.g., when speech overlaps with laughter) or highlights an effort to contain this emotion. In terms of acoustic parameters, VoM Emotional-Positive (VM5) is characterized by voice variations that tend to clear-bright and clear-opaque (Timbre), as well as a soft vocal attack (Duration), and voice box changes that express a positive emotion (e.g., the shape of the mouth when a person communicates sweetness) (see audio folder VoM Emotional-Positive [VM5]).

Examples:

T: total…(laughs)…that's a question, and you didn't know what to sa- (audio track 1)

or

T: Does it still hurt a lot… (audio track 2)

or

P: probably, that's also why (laughs while talking) thiiiis, um, situation has hit me so hard (audio track 3)

or

P: the things… that happen, or they tell you are uglier than beautiful (laughs while talking) and then, maybe… The other day, I phoned my mother, and she said, "Then, say a prayer" because she is very religious… and many tim-… or better, I accept it because she is not like me, but, um… there is always this, "Let's entrust ourselves to God" (intelligible)… (audio track 4)

Counter-Examples:

T: And you never told it? (audio track 1)

The therapist's speech is coded with VoM Emotional-Negative (VM6) because it is charged with negative emotions (see characteristic acoustic parameters).

P: I begged him to stop… and he kept… running… he stared at me…he keeept running the audio recordings (trembling voice) (audio track 2)

The speech is coded with VoM Emotional-Negative (VM6), as the patient's voice is charged with negative emotions (see characteristic acoustic parameters).

P: I know exactly what I somehow envy… and what I would like… too… and, and, um, and… and, especially, the choice of, of who, the, the person she chose to, to li… (audio track 3)

The speech is coded with VoM Connected (VM2), as the patient elaborates while speaking, in connection with herself and the therapist (see characteristic acoustic parameters).

P: Um… … … but, really… I can't think of… any… example but, actually, yes… … yes (audio track 4)

The speech is coded with VoM Introspective (VM4) because the patient is withdrawn, intent on a dialogue with himself (see characteristic acoustic parameters).

Emotional-Negative (VM6)

According to this vocal mode, the speaker's speech expresses negative affection and/or negative emotional strength. The listener has the perception that the speaker expresses negative emotion (e.g., anger, sadness, fear, suffering, tension, discomfort) by modulating the verbal content (e.g., when the speech overlaps with a sob, a trembling voice, a cry, a sigh) or emphasizing an effort to contain this emotion. In terms of acoustic parameters, VoM Emotional-Negative (VM6) is characterized by voice variations that tend to clear-bright, clear-opaque, or dark-opaque (Timbre). Moreover, this mode has increased volume (Intensity) and/or not-fluid pace (Duration), as well as voice box changes that express negative emotion (e.g., nasal congestion when a person cries, voice vibration when he/she suffers, the tension of the vocal cords when he/she is nervous) (see audio folder VoM Emotional-Negative [VM6]).

Examples:

T: Were you very scared? (audio track 1)

or

P: that I couldn't stop crying (cries) (audio track 2)

or

P: I re-…I realize that many things didn't work, and we were right to decide not to break up, but it hurts me because we grew up together, and I think we were a pretty special couple. After all, we were 10 years together, almost 10 years of which were just the two of us, well, because we started traveling, we were young, we had the

same goal…Uhm, it is difficult! Then, at a certain point, the, the decisions… We were close in so many things, and I miss that, sometimes… (trembling voice) (audio track 3)

Counter-Examples:

T: What effect did it make you? (audio track 1)

The speech is coded with VoM Emotional-Positive (VM5), as the therapist's voice is charged with positive emotions (see characteristic acoustic parameters).

P: but it is not liiike the muuusic allows me to isolate myself, it is not like the muuusic, it's not like I don't calm down if I don't listen to music, I mean (audio track 2)

The speech is coded with VoM Reporting (VM1) because the patient tells with emotional detachment (see characteristic acoustic parameters).

P: I talked to my mom, and she was laughing. She told me, "tell the psychologist you're everywhere" (audio track 3)

The speech is coded with VoM Emotional-Positive (VM5), as the patient speaks in a voice charged with positive emotions (see characteristic acoustic parameters).

P: normal, well, neither very high nor very low, but just enough to have the bare essentials, and even satisfy a few whims every so often, in short (audio track 4)

The speech is coded with VoM Declarative (VM3), as the patient explains with conviction (see characteristic acoustic parameters).

Pure Positive Emotion (VM7)

According to this vocal mode, the speaker's speech expresses a positive emotional state (e.g., cheerfulness, fun) without emitting any verbalization. In terms of acoustic parameters,

VoM Pure Positive Emotion (VM7) is characterized only by vocalizations due to voice box changes (e.g., the muscle contraction of the mouth when a person laughs) that express positive emotion (see audio folder VoM Pure Positive Emotion [VM7]).

Examples:

P: I did it!

T: (laughs) (audio track 1)

or

P: but the important thing is that it comes.

T: (smiles slightly)

P: Yeah, Indeed, I ha- (audio track 2)

or

T: in the memoriiies…

P: (smiles slightly)

T: in the head (audio track 3)

or

T: Before you meeeet…

P: (smiles slightly)

T: before you were eighteen (audio track 4)

Counter-Examples:

P: but it went bad

T: (sighs) (audio track 1)

The speaking turn is coded with VoM Pure Negative Emotion (VM8), as the therapist manifests a vocal behavior without verbalization that expresses a negative emotion (see characteristic acoustic parameters).

T: And whaaat happeeens when you lose control, even when you get angry?

P: (snorts) (audio track 2)

The speaking turn is coded with VoM Pure Negative Emotion (VM8), as the patient manifests a vocal behavior without verbalization that expresses a negative emotion (see characteristic acoustic parameters).

P: Well, when we're all together, we're fine (audio track 3)

The speaking turn is coded with VoM Emotional-Positive (VM5), as the patient's vocal behavior charges the verbalization with positive emotions (see characteristic acoustic parameters).

P: Um (snorts)… I don't know (audio track 4)

The patient's turn is coded with VoM Emotional-Negative (VM6) because the verbalization is conveyed by a vocal behavior that expresses negative emotions (see characteristic acoustic parameters).

Pure Negative Emotion (VM8)

According to this vocal mode, the speaker's speech expresses a negative emotional state (e.g., sadness, anger) without emitting any verbalization. In terms of acoustic parameters, VoM Pure Negative Emotion (VM8) is characterized only by vocalizations due to voice box changes (e.g., the expansion of the chest cage for sighing) that express negative emotion (see audio folder VoM Pure Negative Emotion [VM8]).

Examples:

P: on and off… like, there are times whennnn…

T: (sighs)

P: I reallyyy feel like approaching and do- (audio track 1)

or

P: I meaaan,

T: (sighs) (audio track 2)

or

T: Yeah, maybe some memories of when you were younger, a kid

P: (snorts) (audio track 3)

or

T: Did you ever… feeeel… guilty… about anything

P: (snorts)

T: when you were a kid? (audio track 4)

Counter-Examples:

P: Yeah, I, I think so, ah, there you are! there you are! Now, it occurred to me

T: (laughs) (audio track 1)

The speaking turn is coded with VoM Pure Positive Emotion (VM7) because the therapist manifests a vocal behavior without verbalization that expresses a positive emotion (see characteristic acoustic parameters).

T: A very difficult question

P: (laughs) (audio track 2)

The speaking turn is coded with VoM Pure Positive Emotion (VM7) because the patient manifests a vocal behavior without verbalization that expresses a positive emotion (see characteristic acoustic parameters).

P: but she is a, is a person who doesn't give herself a chance, and I, well, also concluded thaaat: yes, okay, I'm sorry… but there's nothing I can do about it

The patient's turn is VoM Emotional-Negative (VM6) because the verbalization is conveyed by a vocal behavior that expresses negative emotions (see characteristic acoustic parameters).

P: (laughs)… Yeah

The turn is coded with VoM Emotional-Positive (VM5), as the patient's vocal behavior charges the verbalization of positive emotions (see characteristic acoustic parameters).

Category System of Interruptions Modes

This chapter presents the categories of the dimension Interruption Mode (IM), derived from previous works (Goldberg, 1990; Li, 2001; Murata, 1994) and the observational methodology application (Anguera et al., 2018). According to the CMASP structure, this dimension identifies the interruption modes through a single category system that can be applied to the therapist and patient. Each category is defined based on the intent of the interruption to foster or hinder the therapeutic discourse and the co-construction of meanings, considering the impact that it has on the listener of communicative exchange. The coding is nominal, and the set of categories is exhaustive and mutually exclusive (E/ME condition[13]; Anguera et al., 2018). At the end of the coding process, if the speaking turn is segmented due to multiple IMs, the coder will have to assign the predominant IM one. For each IM, the chapter provides the description, inclusion criteria, and examples and counter-examples[14].

Categories of the Dimension Interruption Mode (IM)

The IM dimension is characterized by eleven E/ME categories divided into (a) Cooperative interruptions (Concurrence, Assistance, Clarification, Exclamation), which sustain the speaker by coordinating the process and/or content of the conversation; (b) Intrusive interruptions (Disagreement, Floor taking, Competition, Topic change, Tangentialization), which show power or dominance by disrupting the process and/or content of the conversation; (c) Neutral Interruption; and (d) Failed Interruption.

[13] E/ME condition: the coder assigns one and only one IM to each speaking turn.

[14] To access the audio recordings in MP3 format and their transcripts in Italian of the examples and counter-examples related to the original version of the manual, please contact the first author.

Cooperative-Concurrence (IM1)

According to this interruption mode, the interrupter agrees, corroborates, comprehends, understands, or supports the current speaker in what he/she says. Sometimes, the interruption aims at extending or elaborating the idea of the current speaker (see audio folder IM Cooperative-Concurrence [IM1]).

Examples:

P: I feel like I'm coming back to the same topics over and over again (talks while smiling), I//

T: //Well, don't worry (laughs) (audio track 1)

or

T: But, um… was mom different when this person was aroun-//

P: //Yeah, totally different; she was vital (audio track 2)

or

P: the department chief told him that he has to, has to have surgery as soon as there's a vacancy, so let's say that//

T: //there's no urgency//

P: //there's no urgency either. Indeed, now, I mean, it's for… (audio track 3)

In the last example, the therapist and the patient interrupt each other to express understanding and validation, respectively.

Counter-Examples:

P: and so…last July, we decideeed…//

T: //to end (audio track 1)

The therapist's turn is coded with IM Cooperative-Assistance (IM2), as she interrupts to help the patient overcome her difficulty in continuing the speech.

T: How much?

P: Seven years//

T: //Ah, so, she's much younger! (audio track 2)

The therapist's underlined turn is coded with IM Cooperative-Exclamation (IM4), as she interrupts to express involvement concerning what the patient has said.

T: But was that something you weeere asked by them?//

P: //No, no, no, not at all. No, that's not, um, not in their defense (audio track 3)

The patient's turn is coded with IM Intrusive-Disagreement (IM5), as he interrupts to express immediately his rejection of what the therapist is saying.

P: maybe, I wouldn't have done it because; maybe, it was always tied to an expectation that the other person has-//

T: // No, exactly–

P: //-toward-//

T: //–that's–//

P: //-me//

T: //–what I wanted to point out (audio track 4)

The underlined turns of the therapist and patient are coded with IM Intrusive-Competition (IM7), as participants engage in a battle to complete their respective discourses.

T: Will you have eeexams now, anything…?//

P: // Yeah, yeah, I'll start the exams too (audio track 5)

The patient's turn is coded with Neutral Interruption (IM10), as she takes the floor without cooperating or intruding when the therapist shows uncertainty in continuing her speech.

Cooperative-Assistance (IM2)

According to this interrupt mode, the interrupter supports the current speaker through a word, phrase, or idea when he/she perceives that the other needs help in the elaborative processes and in finishing the speech. It differs from neutral interruption because, in this case, the interlocutor takes the floor when the current speaker suspends his/her speech, without any intention of helping him/her to overcome the difficulties in continuing (see Audio folder IM Cooperative-Assistance [IM2]).

Examples:

P: but I d-, don't, don't know whether to do it becaaause that would add another commitment, anotheeer (snorts)//

T: //Another thought (audio track 1)

or

P: Right in the beginning… I was a liiittle wheeen… I was a little miffed because I saiiid, since there are other brothers too, that maybe they couuuld try toooo…//

T: //Help each other (audio track 2)

or

T: Ah, so you're fo-, foo-//

P: //five years (audio track 3)

Counter-Examples:

P: Oh, God, now I don't know what accusations she made because I tried to stay as far away as-//

T: //as far away as

P: -I could, exactly (audio track 1)

The therapist's turn is coded with IM Cooperative-Concurrence (IM1), as she interrupts to express understanding of the patient's speech.

T: if you decide to fill it out, I'll go out; now let's find a//

P: // But what's it about? (audio track 2)

The patient's turn is coded with IM Cooperative-Clarification (IM3), as he interrupts to ask for clarification concerning what the therapist has said.

T: Sure… um… but I also think on the level of, of your fears wheeen… youuu… relaaaate… to a boy and the future… becaaause in your, in your words, the ideeea… "I… found myself like mom" was very present

P: Yeah… yeah

T: as desire and fear at the same time//

P: //Basically, I liv-… actually, I found myself th-, I mean, oh yeah, I don't know if that's an (laughs), an, an accident, as you said, "the conclusion of my course" (audio track 3)

The patient's underlined turn is coded with Intrusive-Floor Taking (IM6), as she interrupts to take the floor and express her opinion.

T: Um, is it okay if I see you one more time sooo-//

P: //Yeah

T: we can fiiinish t-, tal-, I'll finish asking you a few things; after that, let's have the last session where we take stock of the situation//

P: //Do I have to fill in–//

T: //Oh, yes

P: –the questionnaire this time too? (audio track 4)

The patient's underlined turns are coded with IM Intrusive-Topic change (IM8) since he interrupts to move the speech to another topic. The interrupting speech is divided into two separate turs due to the therapist's interruption, "Oh, yes." However, the sentence "–the questionnaire this time too?" represents the final part of a speech that interrupts the patient and, therefore, it assumes the same code (see point 4 of the section Coding of Interruption Modes).

Cooperative-Clarification (IM3)

According to this IM, the interrupter interrupts to understand the speech expressed by the current speaker. The intent is for the current speaker to clarify or explain part of the previous speech that is obscure to the interrupter (see audio folder IM Cooperative-Clarification [IM3]).

Examples:

P: This cost me… an enormous amount of energy, and I had no more, um… strength to do anything else//

T: //<u>But was that something you were asked?</u> (audio track 1)

or

P: Well, we have a different way of working, but it's-//

T: //<u>So</u>–

P: -fine

T: –<u>are you doing extra work?</u> (audio track 2)

In this example, the word "-fine" is the final part of the interrupted speech; therefore, it does not represent an interruption (see point 4 of the section Coding of Interruption Modes).

or

T: I'm a professional//

P: //<u>Hooow, how does it work with the university</u>? (audio track 3)

Counter-Examples:

T: but when you left, did your parents… sepa-//

P: //they got divorced (audio track 1)

The patient's turn is coded with IM Cooperative-Assistance (IM2), as she interrupts to support the therapist in the face of her difficulty in continuing.

P: Um, yeah, um, probably//

T: //I mean, like, "If we were so close in the past, if you understood me so much, how can you not understand me now?" (audio track 2)

The therapist's turn is coded with IM Intrusive-Floor Taking (IM6), as she interrupts to take the floor and express her thoughts.

P: I meeean, um, she's gonna make, um, all thooose… Oh, God, um, those, those computer-animated movies-//

T: //I mean, like–//

P: //-those of Pixar-//

T: //–a 3–//

P: //-for examp-//

T: //–3D–//

P: //-ri-//

T: //–graphic designer–//

P: //-right//

T: //–you say (audio track 3)

The underlined turns of the therapist and patient are coded with IM Intrusive-Competition (IM7), as participants engage in a battle to complete their respective discourses.

P: I don't think the, the effort I'm making is justified by a simple, um, quantum leap in the, in the difficulty of the subjects//

T: //But this thought of mom, Dad, this whole difficult situation, is that something you think about often? (audio track 4)

The therapist's turn is coded with IM Intrusive-Topic change (IM8), as she interrupts to move the speech to another topic.

P: Well, let's just say they're used to my way too…//

T: //I mean, had you lived… outside Italy before? (audio track 5)

The therapist's turn is coded with Neutral Interruption (IM10), as she takes the floor without cooperating or intruding when the patient shows uncertainty in continuing her speech.

Cooperative-Exclamation (IM4)

According to this interruption mode, the interrupter shows co-participant involvement, sharing, and relationality by expressing surprise about the speech of the current speaker (see audio folder IM Cooperative-Exclamation [IM4]).

Examples:

P: Um, in September, it will be seven years//

T: //You were very young! (audio track 1)

or

P: I feel relieved; I mean that this thing about living anyyyway… about not having my autonomy weighed on me a little bit//

T: //Well, you weren't very happy! (audio track 2)

or

T: and how did it go with your thoughts these past weeks?//

P: //Fine! (she talks while smiling) (audio track 3)

Counter-Examples:

T: Well, fine! (she talks while smiling)//

P: //Yeah, yeah, quite (he talks while smiling) (audio track 1)

The patient's turn is coded with IM Cooperative-Concurrence (IM1), as he interrupts to show agreement with the therapist's statement.

T: so, your sister is ei..ghte//

P: //Nineteen (audio track 2)

The patient's turn is coded with IM Cooperative-Assistance (IM2), as he interrupts to support the therapist in the face of her difficulty in continuing.

T: because your parents took you there or because you chose?

P: //No, no, it was my choice-

T: Mh-hmm

P: -it was my choice (audio track 3)

The patient's turns are coded with IM Intrusive-Disagreement (IM5), as she interrupts to reject what the therapist says and to express her opinion. The therapist's backchannel does not interrupt but divides the patient's speech into different turns, which assume the same code.

P: Since the courses are attended by fifteen students, up to a maximum of twenty, at the master's degree…//

T: //Ah, there are few of you! (audio track 4)

The therapist's turn is coded with Neutral Interruption (IM10), as she takes the floor without cooperating or intruding when the patient shows uncertainty in continuing his speech.

Intrusive-Disagreement (IM5)

According to this interruption mode, the interrupter violates the current speaker's turn to show disagreement and to correct or voice his/her opinion immediately (see audio folder IM Intrusive-Disagreement [IM5]).

Examples:

P: I'm lonely, but it's not like I'm-//

T: //No, no, that's–

P: -alone

T: –clear (audio track 1)

or

P: I try to establish a dialogue with that person (all emotionally charged)//

T: //No, no, I was aaalso thinking about… how you feel about yourself (audio track 2)

or

T: But is she an older sister or-//

P: //No, no, she is younger (audio track 3)

Counter-Examples:

T: But, so, are you doing extra work? Are you saying//

P: //Yeah-

T: //Yeah

P: //-basically, yes (audio track 1)

The underlined turns of the therapist and patient are coded with IM Cooperative-Concurrence (IM1), as participants interrupt each other to validate their respective communications. In this case, "yeah" of the therapist does not represent a backchannel.

T: Uh, tell me, for exaaample… uh, the day before the school-leaving examination, the oral examination… what happened…not to, I don't care about-//

P: //No–//

T: //-the oral of-//

P: //–I'm–//

T: //-your school-leaving examination//

P: //–no, no, I'm thinking about it

T: (laughs) (audio track 2)

The underlined turns of the therapist and patient are coded with IM Intrusive-Competition (IM7), as participants interrupt each other to complete their respective communications.

T: So, there is alsooo…um… aaa difficult choice, namely, to leave home…//

P: //Ah, no, no (audio track 3)

The patient's turn is coded with Neutral Interruption (IM10), as he takes the floor without cooperating or intruding when the therapist shows uncertainty in continuing her speech.

Intrusive-Floor taking (IM6)

According to this interruption mode, the interrupter violates the current speaker's turn to develop the topic of the latter. In general, the interrupter does not want to change the subject but only express his/her opinion, idea, or thought by taking the floor (see audio folder IM Intrusive-Floor taking [IM6]).

Examples:

P: Yeah, yeah, I realize that. Indeed//

T: //and things can also be absolutely small and hurt a lot (audio track 1)

or

P: Well, compared to him, well, I can't see him in suuuch a bad way//

T: //No, also because you have, have said it clearly, I mean, you're very afraid of other people, I mean, you have so much desire to be with others, to have a partner, but you are very afraid (audio track 2)

or

T: But what happened to this aun-//

P: //She was born that way (audio track 3)

Counter-Examples:

T: Is that something that didn't happen before?//

P: // That's something that didn't happen before (audio track 1)

The patient's turn is coded with IM Cooperative-Concurrence (IM1), as he interrupts to corroborate what the therapist says.

P: I remember I could not, not sleep so well at night//

T: //Is it this September or last September? (audio track 2)

The therapist's turn is coded with IM Cooperative-Clarification (IM3), as she interrupts to ask for clarifications concerning what the patient is saying.

T: Would you… explain to me a little why you//

P: // Can we be on first-name terms? (audio track 3)

The patient's turn is coded with IM Intrusive-Topic change (IM8), as he interrupts to move the discussion to another topic.

P: Yes, yes, I, I know that very well, but...//

T: //Well, I think it's your fear of beeeing…um… weak, in quotes (audio track 4)

The therapist's turn is coded with Neutral Interruption (IM10), as she takes the floor without cooperating or intruding when the patient shows uncertainty in continuing his speech.

Intrusive-Competition (IM7)

A simultaneous speech by both participants characterizes this type of intrusive interruption. The interrupter and the current speaker interrupt each other in an attempt to finish their respective speech, generating a real battle for the turn (see audio folder IM Intrusive-Competition [IM7]).

Examples:

P: I don't know, I just see these steps, I mean, I saw my mom who… finally took a stand, in quotes, concerning what she was experiencing… and I sank into a deep depression, I mean, I just remember this, um-//

T: //Did mom–//

P: //-I couldn't-//

T: //–take a stand–//

P: //-wake up in the//

T: //–on what she was living (audio track 1)

or

P: I mean-//

T: //when this feeling–//

P: //-I-//

T: //–comes up//

P: //-well, I've been thinking about it (audio track 2)

or

T: so, did mom and dad still live together-//

P: //Um, they lived–//

T://-I mean, how//

P://– together until… last September (audio track 3)

Counter-Examples:

P: Now, I don't think I could even fight and upset my parents because, besides being sorry, t-//.

T: //there's no reason (audio track 1)

The therapist's turn is coded with IM Cooperative-Concurrence (IM1), as she interrupts to show understanding about what the patient is saying.

T: so we'll see how it weeent…//

P: //the summer (audio track 2)

The patient's turn is coded with IM Cooperative-Assistance (IM2), as he interrupts to support the therapist in continuing the speech.

T: and did you come together?//

P: //No, she came last week (audio track 3)

The patient's turn is coded with IM Intrusive-Disagreement (IM5) since he interrupts to reject what the therapist says and to express his thought immediately.

Intrusive-Topic change (IM8)

According to this IM, the interrupter violates the current speaker's turn to change the subject, cutting the speech of the latter more aggressively than taking the floor. All this allows him/her to succeed in this change (see audio folder IM Intrusive-Topic change [IM8]).

Examples:

P: It's not the same as having friends in their 30s with whom, surely, you can share other things, other thoughts//

T: //So you got married young (audio track 1)

or

P: I used to read manga or watch Japanese anime

T: mm-hmm

P: that are… let's say, things that interest me, but beyooond that, I mean… I've never gooone beyooond, I mean, these things a bit mooore trivial.

T: Yes

P: Um… … yes, because the rest… then, many, I mean, many times, I haven't had much… time to be alone, I mean//

T: //I was thinking, it occurs to me… nature and your relationship with the countryside (audio track 2)

or

T: For example? C-, I underst-//

P: //I have to be honest; the situation has actually changed a bit–

T: Mh

P: since I applied

T: Yes

P: um, so, let's say the real problem is my father (audio track 3)

In this last example, the patient's turns represent a single interruption because the therapist's backchannels do not interrupt (see point 4 of the section Coding of Interruption Modes).

Counter-Examples:

P: And so she is at home wi-, she is at home with us; it's my mother who has to take care of her (he talks while smiling)//

T: //But is she an older sister or (audio track 1)

The therapist's turn is coded with IM Cooperative-Clarification (IM3), as she interrupts to ask for clarification about what the patient has said.

T: Is it a Thursday? I'm not free//

P: //No, I guess it's Monday (audio track 2)

The patient's turn is coded with IM Intrusive-Disagreement (IM5), as she interrupts to reject what the therapist says and express her opinion.

T: the opportunity to choose is given

P: Eh!

T: but//

P: //Maybe, I wouldn't have done it because, maybe, it was always tied to an expectation that the other person has (audio track 3)

The patient's underlined turn is coded with IM Intrusive-Floor Taking (IM6), as she interrupts to take the floor and express her opinion by extending what the therapist says.

P: The thing that bothers me a little is that this delay has also affeeected...//

T: //and what about this… weight loss… for this other guy? (audio track 4)

The therapist's turn is coded with Neutral Interruption (IM10), as she takes the floor without cooperating or intruding when the patient shows uncertainty in continuing her speech.

Intrusive-Tangentialization (IM9)

According to this interruption mode, the interrupter violates the current speaker's turn not to listen to the current speaker's speech since it was already expressed before o already known through other sources. The interrupter avoids what the other wants to say; therefore, he/she synthesize one or more parts of the speech before it is completed to minimize or not give importance to it. This interruption mode differs from Cooperative-Concurrence because there is no intention to show understanding but to close an already known and repeated speech (see audio folder IM Intrusive-Tangentialization [IM9]).

Examples:

T: so… I take it you'd rather not, right?

P: I didn't, I didn't think so.

T: Ok

P: I mean, I thought not, but don't know, I don't know, I got to think about it, I don't know//

T: //<u>that you thought not, I get it</u> (audio track 1)

or

P: For example, another… this thing is a bit stupid but always related to it, it is the fact that I was playin-, I play a… a, a, a, a farm simulator

T: Mh

P: whiiich… where practically there are… faaarms, you have the real farm equipment, everything, a simulator of the real ones, in the sense thaaat… all the tools present aaare reallyyy and commercially available; um, I'm not saying, saying like Farmville, which is muuuch… simpler, um. Indeed, a couple of years ago, I found myself…when… I mean, I really felt the need to play this game to… to g-, to relax

and escape. I'd even wake up half an hour early in the morning to play, so I was a little//

T: //but what neeeeds, what does it involve?//

P: //It is about growing and–//

T: //grow- (interrupted)

P: –breeding, I mean, a real… (laughs) it's a real simulatooor//

T: //You're in there (audio track 2)

Counter-Examples:

P: but it is not liiike the muuusic allows me to isolate myself, it is not like the muuusic, it's not like I don't calm down if I don't listen to music, I mean…I aaam not…//

T: // It's not essential (audio track 1)

The therapist's turn is coded with IM Cooperative-Concurrence (IM1), as she interrupts to corroborate what the patient says.

P: aaan I forg-, I mean, I didn't say one important fact, thaaat my siiister, the older one, suffered from anorexia.

T: Mh

P: um, and she iiis still suffeeering frooom… I mean, she has manias…//

T: //Conneeected… to food (audio track 2)

The underlined turn of the therapist is coded with IM Cooperative-Assistance (IM2), as she interrupts supporting the patient in his moment of difficulty to continue his speech.

T: But then, how was the exam?

P: Well, I mean, I got 26 but//

T: //Ah, so it went very well in the end (she smiles slightly)! (audio track 3)

The therapist's underlined turn is coded with IM Cooperative-Exclamation (IM4), as she interrupts to show co-participant involvement in the patient's speech.

P: It can be either Friday morning or Tuesday afterno-//

T: //I'm either here on Tuesday morning or Thursday afternoon (audio track 4)

The therapist's turn is coded with IM Intrusive-Floor Taking (IM6), as she interrupts to take the floor and express her point of view.

T: Aaand…hooow about you…//

P: //Thursday at 3:00 pm (audio track 5)

The patient's turn is coded with Neutral Interruption (IM10), as she takes the floor without cooperating or intruding when the therapist shows uncertainty in continuing her speech.

Neutral Interruption (IM10)

This interruption mode is characterized by being neither cooperative nor intrusive. It occurs when the current speaker suspends the communication before completing it, creating uncertainty as to whether or not his/her speech will continue (the central aspect is that the current speaker's speech appears incomplete as a result of the suspension). Therefore, the interrupter intervenes by taking the floor and starting to speak. It differs from cooperation or intrusive interruptions, as the interrupter takes advantage of the moment of uncertainty to take the floor and express his/her speech (see audio folder Neutral Interruption [IM10]).

Examples:

P: I spent so many years there, and I feel like...//

T: //And what's over? … Whaaat…? (audio track 1)

or

P: not because I ate a lot, anyway, yes, I ate like a kid… buuut also because… they filled me up with some drugs, sooo…//

T: //and at what age did you… becooome aware of this… (audio track 2)

or

T: And wha-, what was this questionnaire about…//

P: //It's about Internet and Facebook addiction (audio track 3)

Counter-Examples:

P: What she ha-, had in miiind, she managed to-//

T: //she did

P: -do (audio track 1)

The therapist's turn is coded with IM Cooperative-Concurrence (IM1), as she interrupts to express understanding of what the patient has said.

P: because he said, "you don't have to know the formulas by heart, you have to know how…"//

T: //to use them (audio track 2)

The therapist's turn is coded with IM Cooperative-Assistance (IM2), as she interrupts to support the patient in his moment of difficulty in continuing his speech.

T: No, no, no, when did you start//

P: //Ah, the illness? (audio track 3)

The patient's turn is coded with IM Cooperative-Clarification (IM3), as he interrupts to ask for clarifications about what the therapist has said.

P: I stop listeeening, I answer baaadly//

T: //No, I'm thinking about the future (audio track 4)

The therapist's turn is coded with IM Intrusive-Disagreement (IM5), as she interrupts to reject what the patient has said and to express her thoughts immediately.

T: Yes, maybe, next tiiime…we go on….um//

P: //Meanwhile, do you want to ask me a few questions? (audio track 5)

The patient's turn is coded with IM Intrusive-Topic change (IM8), as he interrupts to move the therapeutic discourse to another topic.

Failed Interruption (IM11)

This interruption mode is characterized by simultaneous speech and, unlike the Intrusive-Competition, occurs when the interrupter tries to take the floor but has to stop since the other participant ignores him/her and continues to speak until the end. In this way, he/she fails the interruption. In other cases, the interrupter stops before finishing his/her speech because he/she perceives that the other has not finished speaking yet (see audio folder Failed Interruption [IM11]).

Examples:

P: and the job opportunities, as far as I know (laughs), um, in England are greater than here; so, I see it as a thing that is very-//

T: //And what

P: -positive (audio track 1)

or

P: I don't remember being given a choice like, "you want, or you don't want," but… maybe, yes, the doctor told me, and now, I don't really-

T: //I don't

P: -remember (audio track 2)

or

T: and so, again, the threat here is change

P: yeah

T: and so, going to live somewhere else, um, and–//

P: //aband-

T: –so (audio track 3)

Counter-Examples:

P: and, instead, my mother, my sister, and I are still in… our-//

T: //your house

P: -house, exactly (audio track 1)

The therapist's turn is coded with IM Cooperative-Concurrence (IM1), as she interrupts to express understanding of what the patient has said.

P: sometimes they agree with me, other times they say they want the same, "okay, go," and so, I back out because I don't, doon't (he talks while smiling)//

T: //you don't care//

P: //I don't care (audio track 2)

The therapist's turn is coded with IM Cooperative-Assistance (IM2), as she interrupts to support the patient in his moment of difficulty in continuing his speech.

T: Is that enough? (ride)//

P: //No, no, no (he talks while smiling) (audio track 3)

The patient's turn is coded with IM Intrusive-Disagreement (IM5), as he interrupts to reject what the therapist says.

P: two thousand-//

T: //that is, two thousand–//

P: //-and thirteen-//

T: //–and thirteen//

P: //-yes (audio track 4)

The underlined turns of the therapist and patient are coded with IM Intrusive-Competition (IM7), as participants interrupt each other to complete their respective communications.

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Appendix A.1

Summary Scheme of the CMASP

Dimension	Categories	Description	Code
Verbal Mode-Structural Form (VeM-SF) *It concerns the formal structure of the speech by which the speaker expresses the verbal mode.*	Courtesies	The structure of the speaker's verbalization expresses a receptive language according to social conventions.	SF1
	Assertion	The structure of verbalization expresses something that is considered true by the speaker or refers to a certain state of things.	SF2
	Question	The structure of the speaker's verbalization is in the form of a request for specific information.	SF3
	Agreement	The structure of the speaker's verbalization recognizes as certain or true what the other has said.	SF4
	Denial	The verbalization rejects the truth of what the other said.	SF5
	Direction	The verbalization has a structure that guides the behaviors of the other by fostering his/her cognitive, emotional, or behavioral actions.	SF6
Verbal Mode-Communicative Intent (VeM-CI) *It concerns the underlying intention of the speaker's speech.*	Acknowledging	The communicative intent of the speaker is to take the standpoint of the other participant about his/her experience, without making no presumption of it (presuming knowledge of the speaker's experience only).	CI1
	Informing	The communicative intent of the speaker is to provide or request information about the *hic et nunc* of the therapy (consultation process, the therapist's behaviors, or arrangements).	CI2

(continued)

(continued)

Dimension	Categories	Description	Code
	Exploring	The speaker's communicative intent is to ask for information (facts, knowledge, events, feelings, causes, or reasons). Moreover, the speaker may provide the requested information or new content.	CI3
	Deepening	The communicative intent of the speaker is to develop the description, presentation, or discovery of certain content. The speaker may realize it by verifying the truthfulness of an assertion made by the other that is questioned, by correcting the comprehension of the other, by corroborating something stated (an opinion, facts, or new content provided or requested) by the other, or by requesting for information about the content of the other's speech.	CI4
	Focusing	The speaker's communicative intent is to direct attention and effort toward a specific topic of conversation. The speaker may realize it by introducing a new topic, by going back to a topic, by summarizing a topic, or by defining the limits of a speech.	CI5
	Temporizing	The speaker's communicative intent is to take a suspended position in front of the other's speech. It allows the speaker to get in touch with his/her thoughts and/or feelings or to avoid momentarily facing the demands of the previous speech.	CI6
	Attuning	The speaker's communicative intent is (a) to understand the other by verifying or corroborating his/her understanding of the latter's actions or thoughts; (b) to be understood by the other by expressing how the latter's actions or thoughts have been comprehended; (c) to harmonize with the other by communicating emotional participation. Moreover, the speaker can provide feedback by validating/discouraging the other's behaviors, meanings, or feelings, by showing the other's affections, or by telling the emotional impact that the other had on the speaker.	CI7

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Dimension	Categories	Description	Code
	Resignifying	The speaker's communicative intent is (a) to offer a new perspective on reality; (b) to connect content to others; (c) to recognize or establish a pattern of psychological functioning; (d) to question content.	CI8
Vocal Mode (VoM) *It concerns the underlying intention of the speaker's speech, determined by the impact that the vocal mode has on the listener of the therapeutic discourse regardless of the verbal content and by a specific combination of acoustic parameters (tone, intensity, duration, and timbre). The "emotional" categories are founded on the principle of universal recognition of emotions.*	Reporting	The speech is characterized by a lack of affection and emotional distance. The listener has the perception that the speaker is reporting or telling something without emotional involvement. Vocal parameters: (a) repetitive prosody (Tone); (b) dynamic variation (Intensity); (c) agogic accent (Tone); (d) often fluid pace (Duration).	VM1
	Connected	The speech is characterized by an elaborative process, oriented towards the other when it is expressed. The listener has the perception that the speaker is connected or attuned to him/herself and the other, giving the latter the space to intervene. Vocal parameters: (a) a sentence ending with anti-cadence (Tone); (b) agogic accent (Tone); (c) soft vocal attack (Duration); (c) pace (Duration) with pauses and loss of fluidity (e.g., prolongations, repetitions).	VM2
	Declarative	The speech is characterized by security, certainty, and conviction. The listener has the perception that the speaker is teaching, instructing, explaining to the other, or that the speaker is convinced of what he/she is saying. The other has a little space for intervening. Vocal parameters: (a) a sentence ending with anti-cadence or suspension (Tone); (b) dynamic or tonic accent (Tone); (c) hard vocal attack (Duration); (d) fluid pace (Duration); (e) often increased medium volume (Intensity).	VM3

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Dimension	Categories	Description	Code
	Introspective	According to this vocal mode, the speaker's speech is self-directed and introverted. The listener has the perception that the speaker is in connection with his/her inner world or engaged in a dialogue with him/herself. Vocal parameters: (a) decreased medium volume (Intensity); (b) often slow speed (Duration); (c) long pauses (Duration).	VM4
	Emotional-Positive	The speaker's speech expresses positive affection and/or positive emotional strength. The listener has the perception that the speaker manifests positive emotion (e.g., joy, happiness, sweetness, excitement, fun, sympathy, curiosity, understanding) by modulating the verbal content (e.g., when speech overlaps with laughter) or highlights an effort to contain this emotion. Vocal parameters: (a) voice variations that tend to clear-bright and clear-opaque (Timbre); (b) soft vocal attack (Duration); (c) voice box changes that express a positive emotion (e.g., the shape of the mouth when a person communicates sweetness).	VM5
	Emotional-Negative	The speaker's speech expresses negative affection and/or negative emotional strength. The listener has the perception that the speaker manifests negative emotion (e.g., anger, sadness, fear, suffering, tension, discomfort) by modulating the verbal content (e.g., when the speech overlaps with a sob, a trembling voice, a cry, a sigh) or emphasizing an effort to contain this emotion. Vocal parameters: (a) voice variations that tend to clear-bright, clear-opaque, or dark-opaque (Timbre); (b) increased volume (Intensity) and/or not-fluid pace (Duration); (c) voice box changes that express negative emotion (e.g., nasal congestion when a person cries, voice vibration when he/she suffers, the tension of the vocal cords when he/she is nervous).	VM6

(continued)

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Dimension	Categories	Description	Code
	Pure Positive Emotion	The speaker's speech expresses a positive emotional state (e.g., cheerfulness, fun) without emitting any verbalization. Vocal parameters: vocalizations due to voice box changes (e.g., the muscle contraction of the mouth when a person laughs) that express positive emotion.	VM7
	Pure Negative Emotion	The speaker's speech expresses a negative emotional state (e.g., sadness, anger) without emitting any verbalization. Vocal parameters: vocalizations due to voice box changes (e.g., the expansion of the chest cage for sighing) that express negative emotion.	VM8
Interruption Mode (IM) *It concerns the interrupter's behaviors to take the floor (successfully or not) for supporting or hindering the communicative flow of the current speaker. These IMs analyze the intent of the interruption, considering the impact that the latter has on the listener. Each mode is defined by the time and way in which the interrupter takes the floor.*	Cooperative-Concurrence	The interrupter's intent is to agree, corroborate, comprehend, understand the current speaker in what he/she says. Sometimes, the interruption aims at extending or elaborating the idea of the current speaker.	IM1
	Cooperative-Assistance	The communicative intent of the interrupter is to support the current speaker through a word, phrase, or idea when he/she perceives that the other needs help in continuing the speech and in the elaborative processes.	IM2
	Cooperative-Clarification	The interrupter's communicative intent is to understand the speech expressed by the current speaker. The intent is for the current speaker to clarify or explain part of the previous speech that is obscure to the interrupter.	IM3
	Cooperative-Exclamation	The interrupter shows co-participant involvement, sharing, and relationality, expressing surprise about the previous speaker's speech.	IM4
	Intrusive-Disagreement	The interrupter violates the current speaker's turn to show disagreement and to correct or voice his/her opinion immediately.	IM5
	Intrusive-Floor taking	The interrupter violates the current speaker's turn to develop the topic of the latter. In general, the interrupter does not want to change the subject but only express his/her opinion, idea, or thought by taking the floor.	IM6

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Dimension	Categories	Description	Code
	Intrusive-Competition	The interrupter and the current speaker interrupt each other to finish their respective speech (simultaneous speech), generating a battle for the turn.	IM7
	Intrusive-Topic change	The interrupter violates the current speaker's turn to change the subject, cutting the speech of the latter more aggressively than taking the floor. All this allows him/her to succeed in this change.	IM8
	Intrusive-Tangentialization	The interrupter violates the current speaker's turn not to listen to the speech since it was already expressed before o already known through other sources. The interrupter avoids what the other wants to say, synthesizing one or more parts of the speech before it is completed to minimize or not give importance to it. This interruption mode differs from Cooperative-Concurrence because there is no intention to show understanding but to close an already known and repeated speech.	IM9
	Neutral interruption	This interruption mode is characterized by being neither cooperative nor intrusive. It occurs when the current speaker suspends the speech before completing it, creating uncertainty as to whether or not his/her speech will continue (the central aspect is that the current speaker's speech appears incomplete as a result of the suspension). Therefore, the interrupter intervenes by taking the turn and starting to speak. In general, it differs from cooperative or intrusive interruptions since the interrupter takes advantage of the moment of uncertainty to take the floor and express his/her speech.	IM10
	Failed Interruption	This interruption mode is characterized by simultaneous speech and, unlike the Intrusive-Competition, occurs when the interrupter tries to take the floor but has to stop since the other participant ignores him/her and continues to speak until the end. In this way, he/she fails the interruption. In other cases, the interrupter stops before finishing his/her speech because he/she perceives that the other has not finished speaking yet.	IM11

Appendix A.2

Transcription standards for the CMASP Application

The Communicative Modes Analysis System in Psychotherapy (CMASP) is a classification system for evaluating verbal and non-verbal exchanges between the therapist and patient, which can be applied to video or audio recordings and/or transcripts of psychotherapy sessions. For this purpose, the coder must acquire appropriate skills to accurately report the reality of communicative exchanges on a physical medium (the transcript). The more accurate the listening and transcription, the more exact the coding via CMASP will be.

First of all, the coder must divide the transcript of the communicative exchanges into speaking turns. A turn corresponds to the set of verbal/non-verbal communications that one speaker expresses until the other takes the floor. Generally, each turn is indicated by agreement with T (Therapist) or P (Patient). The verbal component is verbatim transcribed; in other words, the coder must report the speech and style of communication of each participant in the interaction, including the difficulties and mistakes of the latter. During the transcription, the coder must not make corrections based on personal inferences since they would change the reality of communication. Therefore, every word spoken by each participant must be transcribed as expressed (also dialectal or slang forms).

The verbatim transcription must also comprise:

a) Hesitation in speaking, such as “She came in t-, thro-, through the door.” “He had a mo-, moment of anger.”
b) Changes in the choice of words, such as “The child was diff-, challenging to manage.”
c) Reflection moments (e.g., Um).
d) Backchannels (e.g., mm-hmm, hmm, yes, of course).

e) Truncated words, such as “I haven’t had a chan-… well, this is another topic.”

The transcription of the non-verbal communication requires careful and systematic listening to the non-verbal aspects that accompany the emission of words by each participant (the most classic examples are: laughs, cries, sighs, trembling voice, increases the volume, lowers the volume, whispers, sobs). These non-verbal components must be reported in brackets in the transcript when they occur.

Example:

P: I shooould (sighs) have resisted (laughs).

If a non-verbal aspect involves a more or less long part of the speaker’s verbal communication, then it should be indicated in brackets corresponding to the last word emitted.

Example:

P: It was a good relationship because I didn’t think at all... the other guys in the group couldn’t... you know, it was something that came out of nowhere (talks while smiling).

Moreover, if the speaker only expresses a non-verbal behavior without words, then the coder must indicate it in brackets as if it were a turn.

Example:

T: How are you?

P: (Cries).

Notes for transcription

Start of a speaking turn or concept. During transcription, a new speaking turn, or sentence within it, must be indicated with a capital letter unless it is the continuation of a speech begun in previous turns (in this case, the coder must use lower case).

Example:

T: How did you feel?

P: I was afraid

T: mm-hmm

P: to go out alone. But now, I feel stronger.

Pause. During transcription, the coder must take care to distinguish between short pauses (indicated by …) and long pauses (indicated by … …) that emerge while the speaker expresses his/her speech.

Incomplete sentences. They include all sentences in which the participant changes speech or moves away from the thought. Incomplete sentences should not be completed with a period. During transcription, the coder must report incomplete sentences by adding an ellipsis at the end of the speech or sentence.

External voice. The coder shall indicate in quotation marks all sentences in which the speaker reports a dialogue outside the interaction as if he/she were using another entry.

Example:

P: I was waiting for my dad at the station, and my best friend turned up around the corner and said, “Hi! What are you doing here?”

Events outside the communicative exchange. Some events (e.g., mobile phone rings, someone knocks on the door) may disturb the speech of the speaker. They do not represent speaking turns, but they must be indicated in brackets at the point they occur.

Duration of communication. Verbal and/or non-verbal communications shorter than 2 seconds must be marked with (<2”) in the transcript at the end of the speaking turn. The duration of the communication corresponds to the interval between the first verbal or non-verbal emission and the last one (if the participant speaks is shorter than 2”, takes a long pause, and then emits a non-verbal aspect, the total duration of the communication is from the moment he/she starts to speak to the moment he/she expresses the last non-verbal behavior).

Interruptions. Within the therapist-patient exchange, the speaking turn of a participant may be interrupted by the intervention of the other. In the transcript, this behavior must be marked with // both at the point where the current communication is interrupted and at the beginning of the speech that interrupts. The coder must pay close attention to the overlaps that may arise in the communicative exchange, and he/she has to try to distinguish as much as possible what is said. It is possible, indeed, that both interlocutors continue to talk, overlapping.

Example:

T: But is she an older or// (<2")

P: //No, no, she is younger//

T: //younger//

P://Yes, yes, because (unintelligible) is the older sister

If a speech is divided into several turns due to an interruption, then the coder must use the hyphen (-) to indicate the continuation of speech in the turns involved. Moreover, if the communications of both participants are divided into several turns, then the coder must use the en dash (–), besides hyphen, to distinguish them.

Example:

P: I'm lonely, but it's not like I'm-//

T: //No, no, that's–

P: -alone

T: –clear!

Backchannels. All communications that one participant expresses while the other is speaking and that indicate assent, attention, incitement to continue (e.g., yes, sure, ok, mm-hmm) are underlying emissions that support the communication. They do not interrupt the speech of the current speaker and are inserted in the transcript as speaking turns.

Noises and disturbances. They can make listening difficult and can prevent the coder from understanding what is being said. In this case, it is indicated (incomprehensible) at the point in the communication where this difficulty is encountered.

Overlapping non-verbal behaviors. When two participants both express non-verbal communications (e.g., they laugh together), they must be indicated as two separate and distinct turns for each participant (see the Sheet for Transcription and Coding through the CMASP in Appendix A.3), in addition to trying to understand from listening who expressed the non-verbal communication first.

Example:

T: (laughs).

P: (laughs).

Appendix A.3

Preliminary steps for coding through the CMASP

Prepare the material

To perform the coding through the CMASP, the coder must have the audio recording and verbatim transcript; the latter is obtained by following the rules established in this manual (see Transcription Standards for the CMASP Application in Appendix A.2). The coder will structure the transcript according to the sheet for transcription and coding below (Table A.3.1) and, within it, will report the codes identified through the use of the category systems and coding procedures in this manual.

Table A.3.1

Sheet for Transcription and Coding Through the CMASP

Coder: (name and last name).
Session date: (if available).
Session no.: (session 1, 2, ... of consultation/therapy).
Therapist: (initials).
Patient: (initials).

Turn	Role	Transcript	VeM-SF	VeM-CI	VoM	IM
1	T					
2	P					
…	…					
…	…					
…	…					

- The first row of the sheet includes information about the session and participants.
- The column Turn includes the numerical sequence of verbal or non-verbal communications of the therapist and patient.
- The column Role identifies the speaker (T for the therapist and P for the patient).
- The column Transcript reports the verbatim transcription of verbal and non-verbal communications of the therapist and patient.
- The columns VeM-SF, VeM-CI, VoM, and IM include the codes of the identified categories of CMASP dimensions.

How to code the verbal and non-verbal modes of the CMASP

The coding of VeMs-SFs and VeM-CIs is carried out by analyzing the verbalizations of each speaking turn in the transcript according to the coding procedures set out in this manual. Moreover, he/she will use the category system of VeM-SFs or VeM-CISs to assign the corresponding codes to the turn or a segment of it. If the speaking turn is segmented, the coder will assign the predominant code according to the established rules for each CMASP dimension. During the coding of VeMs, the code of each identified category will be reported in the sheet for transcription and coding through.

Concerning the coding of VoMs and IMs, it is carried out by listening and analyzing the audio recording, which will be divided into speaking turns corresponding to those of the transcript itself. The latter, however, will support the allocation of VoMs and IMs codes. In this manual, the analysis of these extra-linguistic modes is performed through the Audacity® recording and editing software[15] (see 2.3.0; Audacity Team, 2018). However, you can use any software that allows you to segment, trace, and code audio recordings by applying the category systems and procedures of CMASP.

[15] You can access the software and the user manual through the link, https://www.audacityteam.org/

Using Audacity® for VoM dimension

For VoMs analysis, the coder will first listen to the entire audio recording to familiarize him/herself with the session climate. Next, he/she must use Audacity® to listen to and locate one turn at a time, delimiting it within the audio track using the software commands. Once the speaking turn has been determined, the coder must verify that it meets the minimum duration criteria to be coded (see Coding of Vocal Modes). At that point, he/she proceeds to listen carefully to the turn and apply the software to segment it in case of clear changes in vocal modes according to the minimum coding criteria (see Minimum Conditions for Coding VoMs in a Speaking Turn). Using the Audacity® editing system, you can specify the VoM code identified directly in the audio track. When the coder has completed the listening and observation of the speaking turn, he/she will assign the predominant VoM according to the duration and the coding procedures of this manual. During the coding, each code will be reported in the sheet for transcription and coding.

Using Audacity® for IM dimension

For the IMs analysis, the coder will first have to listen to the entire audio recording to familiarize him/herself with the session climate and the progress of the communicative exchanges between participants. The application of the CMASP is performed by analyzing each speaking turn in the audio track, corresponding to the one reported in the transcript. Therefore, using the transcript as support, the coder will listen to one turn at a time through the Audacity® software until he/she detects an interruption phenomenon during a speaker's speech according to the IMs coding procedures established in this manual. Hence, the coder will delimit the portion of the audio track affected by this phenomenon through Audacity®, including the interrupted and interrupting speaking turn. In the case of multiple and consecutive interruptions within the current speech, he/she will extend the boundaries of the audio track

portion to include all turns involved. At that point, the coder will mark the interrupting turns within the audio portion using Audacity® software according to IMs coding procedures. Finally, from the careful and repeated listening of each interruption phenomenon, he/she will proceed to the allocation of the interruption modes using the IMs category system. During the coding of IMs, each code will be reported in the sheet for transcription and coding.

Example of Compiled Sheet for the Transcription and Coding through the CMASP

At the end of the coding procedure of each dimension, the coder will obtain a matrix of codes where each speaking turn includes concurrent and event-based codes (Bakeman, 1978; Table A.3.2).

Table A.3.2

Extract of Integrated Coding

Turn	Role	Transcript	VeM-SF	VeM-CI	VoM	IM
13	T	How was your week?	SF3	CI3	VM2	
14	P	I've had ups and downs (laughs),	SF2	CI3	VM5	
15	T	Mm-hmm	SF4	CI1		
16	P	but…, in the end, it went well..//	SF2	CI3	VM2	
17	T	//What do you mean with ups and dow//	SF3	CI4	VM2	IM10
18	P	//I feel like… I don't have a… future	SF2	CI4	VM6	IM6
19	T	Mh	SF4	CI1		
20	P	I'm afraid (cries)	SF2	CI4	VM6	IM6