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DOCTORAL DISSERTATION:

Dynamic patterns in voices and the personal positions of a patient diagnosed with Borderline Personality Disorder (BPD) and the therapist in different contexts of long-term psychotherapy, and the association with the change process

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Abstract

Change in subjectivity of the patients is a key aspect for achieving significant outcomes in psychotherapy. The dialogical self theory considers that the subjectivity is formed of subjective positions, and voices defining a dynamic, non-unitary, and multivoiced self, as well as proposing methods to recognise them. Change occurs in the interaction between patient and therapist, which has the characteristics of a non-linear dynamical system. A case study was designed consisting of two consecutive sub-studies. Study 1 identified dynamic patterns in the personal positions, and voices of a patient diagnosed with Borderline Personality Disorder (BPD) and the therapist in change episodes of long-term psychotherapy, and study 2 described the trajectory of the dynamic patterns throughout psychotherapy, and their association with the patient´s outcomes. The procedure was carried out in successful psychotherapy (OQ45-2) and used the Change Episodes Model to track change episodes in the patient, and the Model of Analysis of Discursive Positioning in Psychotherapy (MAPP) to identify personal positions, and voices in the patient and therapist. Through the State Space Grid (SSG) were identified dynamic patterns both in change episodes and in each of the psychotherapy sessions, selecting those most representative to describe the trajectory of the patient's subjective change. Different patterns were found both in change episodes, and along the course of the psychotherapy, describing a progress toward pattern formation including voices of the therapist's proposer position and patient´s reflective position. The results suggest that aspects of subjective change are non-linear and emergently consolidating throughout the therapeutic process. The theoretical and clinical relevance of distinguishing a trajectory that begins in monological subjective patterns, related to psychological suffering, and advances to dialogical subjective patterns associated to the patient's positive outcomes, is discussed.

Introduction

In the study of psychotherapy there seems to be a consensus that the mechanisms of change are often complex to establish because of the different processes involved, and that the outcomes that one patient achieves may differ from those of another, even in similar contexts (Carey et al., 2020; Kazdin, 2009). This reflects the fact that this is not a matter that can be addressed in a single dimension, but needs to include aspects that enable it to subsequently generate multi-level descriptions. The way of connecting the different levels often includes linear models, even some very complex ones (including multiple moderations, and mediations, latent variables, etc.), which establish a number of explanations but do not integrate non-linear[1] features of change, which are intrinsic to a notion of dynamic systems in which the system itself responds disproportionally to the internal and external stimuli presented to it (Schiepek, Tominschek, & Heinzel, 2014), something that can be considered a relevant aspect of psychotherapy.

The description of the change in psychotherapy needs different angles that allow for a broader view of the levels involved in its development. Now then, within the notions of psychotherapeutic change, one of the perspectives that has gained ground in recent times is the notion of a multiple, dynamic, and dialogical self (Cunha, Salgado, & Gonçalves, 2012; Hermans, 2001; Konopka, Hermans, & Gonçalves, 2019; Osatuke et al., 2005; Salgado, & Hermans, 2009), which is at the basis of the subjectivity of therapists and patients. It is

[1] There is a very simple, yet highly impactful definition of nonlinearity, namely, "a system is non-linear if the ratio between a certain variation of the independent variable, ΔX, and the corresponding variation of the dependent variable, ΔY, is not a constant" (p. 5). This definition reflects some results of the research on change in psychotherapy outside the linear cause-effect framework, in that certain relevant events occurring in psychotherapy (or influencing it) may have effects not expected from the traditional approach (Salvatore & Tschacher, 2012), and thus it need of explanations that include a non-linear dynamical systems perspective.

precisely the expression of subjectivity of the patients in the course of psychotherapy that is one of the least explored of all the facets that can be involved in achieving change. How subjectivity manifests itself alludes to a structure that supports the emergence of different contents rather than the delimitation to a reduced number of them. Two key concepts of this notion of subjectivity are personal positions[2], and voices. The multiple self refers to the fact that it is formed of different parts. These parts can be personal or collective, although the interaction is constant and dynamic. There are expressions through voices that organize and constrain the system of meaning that emerges from dialogical relations[3], which is constructed from social definitions and expectations, and personal positions, which are particular ways in which the individual organizes their own life (Hermans, 2001).

From the dialogical self perspective in psychotherapy, patients develop reflective subjective positions, which allow them to reposition themselves and reposition their environment subjectively. This process has been described in case studies from the transferential work that has been done (Georgaca, 2003), in the transition from confused states towards an articulation shaped by promoter positions, coalitions of positions, and meta-positions (Hermans, 2014), in the development of a meta-position associated with the patient's increased self-acceptance (Hermans, 2003), or following a process of subjective

[2] The dialogical self theory points out that the self is composed of different I-positions, subjective positions, or self-states (Bromberg, 1996; Hermans, 2004) that are in a constant interaction as individuals engage in different internal and external dialogues. A "position" can be understood as a possible state of the self, among multiple other possible states, that depends on a specific background, and whose emergence in a given moment will be about the others (potential audiences), being able to change from one moment to another (Salgado & Hermans, 2009). According to Bromberg (1996), an individual is only weakly aware of the existence of individual self-states, because people maintain a healthy illusion of cohesive personal identity.

[3] Gonçalves, & Guilfoyle (2006) state that the distinction between monologism and dialogism by Bakhtin has important implications for psychotherapy. Monologism is understood as an interaction with nonresponsive objects, in which one position or voice is admitted as the only possibility, while dialogism is understood as the construction of meanings from reciprocal interactions between different aspects of the self, and/or between different individuals.

reorganization as psychotherapy progresses (Martínez, & Tomicic, 2019). Furthermore, in studies that have identified discursive/nonverbal self-regulatory strategies of patients and therapists in change episodes (Tomicic et al., 2015), specific configurations of reflective personal positions of the patients in change episodes, and in alliance ruptures (Martínez, Tomicic, & Medina, 2012; Martínez et al., 2014; Morán et al., 2016).

Research on these processes of change has shown characteristics that situate it in a non-linear way in terms of its appearance, and non-causality considering specific antecedent conditions. The fact that previous research on voices and personal positions, that is to say, of subjectivity, understood from this dialogical perspective, mentioned above has suggested a non-linear character in the way in which the patients studied progress from one stage of subjective change to another, opens the question of whether this type of process is supported by self-organizing aspects[4] that allow their understanding within an active interactional framework, where the different therapeutic milestones that may manifest themselves in a process occur in a landscape of events, which configures and reconfigures relatively stable patterns from the beginning of therapy. Different studies point out the non-linear nature that some psychotherapies follow, either as sudden gains or losses that seem to have no clear precedents in specific therapist interventions (Hayes et al., 2007; Heinzel, Tominschek, & Schiepek, 2014), processes of destabilization of patterns related to psychic suffering that are later rearticulated in a configuration of healthier patterns (Hayes et al., 2015), or even global phases of psychotherapy where there is a deconstruction before a meaning construction phase (Salvatore et al., 2010).

[4] Self-organization is the autonomous process in which new configurations emerge in the system as a result of its internal dynamics, and its interaction with the environment, and without being directly managed by external sources (Gelo, & Salvatore, 2016).

The trajectories of change in psychotherapy can be observed from two well-defined points in time, from the moments of change that patients experience without considering previously defined stages, or taking into account the whole trajectory of the process to be described. If we consider change moments of the patient, we can refer to innovative moments in which they elaborate new meanings different from those associated with their problematic experiences (Gonçalves et al., 2011), to moments of meeting in which patient and therapist connect in an authentic, specific, and personal way, generating intense intimacy, and modifying their interaction in the present (Bleimling, 2021; Duarte, Martinez, & Tomicic, 2020), or more generally to change episodes in which patients manifest distinct progress towards transforming subjective theories about themselves, their relationship to their environment, and their problems (Krause et al., 2015; Krause et al., 2006; Krause et al., 2007). This last notion of change has the particularity of tracing segments of the content of change that evolve throughout psychotherapy, and that can then, at first, provide a frame of reference to understand later more global processes of subjective transformation, and intersubjective interactions, if it take into account the constant relationship that patient and therapist are constructing over time.

The description of a trajectory of subjective change can be understood in a long-term psychotherapy that can not only be segmented into different change episodes, but can be understood as a self-organized process session by session. A self-organising process is a dynamic process that results in the formation of an emergent order through the complex interactions of its components, and that is sustained over time (Pincus et al., 2014). Characteristics of self-organization have already been described in different types of psychotherapies, in process and outcome variables, including therapeutic alliance,

cognitive-affective variables, symptomatic improvement, among others (Ramseyer & Tschacher, 2014; 2016; Schiepek et al., 2014; Tschacher & Haken, 2019a), describing pattern formation, synchrony in non-verbal interaction, attractors, and phase transitions. Detecting relevant elements of the trajectory of change from the voices, and personal positions of patients and therapists may be clearer if a process is observed in a patient who, from the point of view of dialogical self theories, presents a state of initial dissociation that can theoretically and clinically be integrated as psychotherapy proceeds. Dimaggio & Stiles (2007) have described problems of confusion in patients experiencing intense and contradictory feelings, leading to disorientation and reflecting incoherent inner worlds, which may be related to a lack of dialogue between different parts of the self. Particularly in patients diagnosed with Borderline Personality Disorder (BPD), these initially incompatible fragments of experience can be assimilated into a more integrated structure (Osatuke & Stiles, 2006). Therefore, significant results can be obtained by studying subjective change understood as a process of integration in a patient diagnosed with BPD who has participated in a successful therapy. That is, from a paradigmatic case, theoretical and clinical conclusions can be drawn that can not only be set within a more general understanding of change, but subsequently promote the design of future studies that can integrate this knowledge into hypothetical models of process-outcome variables.

The chosen case[5] to develop a case study with these characteristics was the psychotherapy of a female aged 31 patient, and a psychodynamically oriented male

[5] The psychotherapy analyzed has been taken from the project funded by The National Fund for Scientific and Technological Development of Chile: Fondecyt 1150639 "Mentalizing in psychotherapeutic processes with patients diagnosed with a personality disorder: Its role in mutual regulation and its association with therapeutic change", belonging to the National Research and Development Agency of Chile (ANID).

therapist aged 53, and with 25 years of clinical experience. She is married and has two children of school age, at the date of consultation. The patient diagnosed with BPD was referred for psychotherapy by her treating psychiatrist because of a beating she had given to her 6-year-old daughter.

The patient says that when she beat her daughter, and saw the effects in her mouth, she felt regret, then was reproached by her husband, and finally went to the physician practitioner for help. She refers to feeling that she does not act in the same way everywhere, behaving according to how the people she interacts with behave, and that sometimes she does not realize that she is acting that way, "I cannot say who I am, I do not feel my identity (...) I am angry, I am cheerful, I am nice, I have it all together, so I find that I should not be like that". Her relationship with her daughter is ambivalent, when she was born she did not feel that she was her daughter, and she considers that she has not had enough concern with her, as she has had with her youngest son. In spite of the above, she wants to give her a good image, especially with regard to the daily activities of household chores and personal cleaning. Sometimes she describes her daughter as if she were talking about a sister. The patient reports that she has problems with drinking alcohol on weekends, and that every time she does so, she changes her behaviour and behaves more uninhibitedly, which subsequently makes her feel ashamed and guilty. Both of the patient's parents were alcoholics, and she recalls that they even became violent towards each other. Possibly one of the biggest problems the patient experienced during her childhood was sexual abuse by a family acquaintance one night when both parents allowed him to be around the children in the home. Her mother committed suicide before she began therapy, and she recalls that while she was unprotected by her mother, and did not have much

affective contact, she admired her strength and discipline to do activities that would allow her to support herself economically. After her mother's suicide, the patient felt guilty for not having been able to talk to her, she felt she had left something unfinished. She says that she does not want to be like her mother in the way she is raising her own daughter, although she is not sure how to differentiate herself from her mother. Her father became ill with cirrhosis during the period the patient was in therapy and died in hospital. After his death, the patient felt a sense of peace, as she felt she could say goodbye and understand him. She remembers that he was closer to her than her mother, but that he was also not present at important moments when she needed his support. Her relationship with her husband began when they were both very young, and is initially defined as a relationship of dependency, where the main decisions concerning both the family and herself are taken by him. She describes a duality between a state of child, where she is subordinate to what other people decide, and where she often feels comfortable, and another state of adulthood, where she must take on responsibilities but finds it difficult to sustain. These responsibilities include the education and care of her children, finding a stable place to work, taking care of her own health, etc.

As the psychotherapy progresses, the patient elaborates on the traumas she suffered due to abuse and difficulties in her childhood. She associates these traumatic experiences with the way she acts now, emphasising above all the ambivalent relationship she has had with her daughter. He also makes progress in terms of grief work with both parents. She is becoming closer to her daughter affectively, while starting to protect her more effectively, and to take responsibility for her school activities. In this way, she begins to balance affective expressions and care for her two children. She herself begins to gain autonomy

and to define herself as an adult woman, who, although she had difficulties in living through her adolescence, recognizes that it is something she necessarily had to understand. She becomes more responsible for her current health problems, following the treatments that are established for her, and no longer roams around in informal jobs that do not satisfy her. Finally, the patient is becoming more aware of the way in which her relationship with her husband was developing, and she begins to question some of these motivations, projecting a future stage in which she and her husband and children will live in a house of their own, without the presence of her husband's family, which often meant that she would be exposed to questioning and criticism. She hopes that once they are there, they will be able to be calm enough to recognize the problems that may arise and face them with more confidence.

The theoretical and empirical background of the research problem; the research questions, objectives, and hypotheses; the methodology, results, discussion, and conclusions of the case study will be presented.

Theoretical and Empirical Background

The interaction of patients and therapists in psychotherapy supports the basis of later therapeutic change. On the one hand, the interaction makes possible a communicative process that gives sense to the contents that are expressed as the process advances, and on the other hand, the reciprocal influence of the therapeutic conversation is seated on the subjective experiences of both. From a dialogical point of view, subjectivity is a reflective process that is established by shared valuations and meanings coming from the interaction with others (Avdi & Georgaca, 2009). Subjectivity is observed in the autobiographical narratives that allow the production of variable accounts of self and others and have the potential to develop new understandings (Madill, Sermpezis & Barkham, 2005).

The dialogical conception of the self in psychotherapy focuses on the nuances of self-narratives, emphasizing the scope and limitations of discourses that account for personal and interpersonal meanings (Neimeyer & Cabanillas, 2004). This approach points out that self-narratives are continuously structured and restructured by multiple voices (a metaphorical expression to refer to the aspects that form the self) that are in a dialogical exchange that constantly re-edits the different existing stories (Hermans & Dimaggio, 2004). Narrated stories emerge every instance where subjective positions are endowed with these voices, and can engage in dialogical interactions (Hermans, 2001) that give them dynamism. In psychotherapy, the self can move between two poles: one is monological, uncommitted, and fragmented, establishing the leading role of a single voice or multiple voices that cannot be connected, and the other dialogical, multi-voiced, and committed, where the reciprocal influence between the voices that stimulate exploration and the

interweaving of ideas, opinions, and feelings in the search for new possibilities is manifested (Anderson, 2012; Stiles, 1997). The transition between monologism and dialogism can be understood as a reduction of the dissociation between voices and their engagement in an adaptive and flexible interplay between them, which translates into the exploration, recognition, and eventual coordination between voices, leading to a process in which positions can be expressed in a balanced manner, or towards the strengthening of an agency that manages to coordinate the different positions (Georgaca, 2001).

Change in psychotherapy from a dialogical self perspective

Clinical change can be evidenced in more fruitful dialogues between the different voices, a decrease in disorganization and dissociation (Avdi & Georgaca, 2009). In psychotherapy, a process of integration occurs that configures a new state from elements that were already present in patients' experiences, sometimes isolated, dissociated, or denied. From this point of view, it can be recognized that problematic voices are excluded from the remaining personal experiences, and that there is a need to gradually build bridges of meaning to be assimilated by the community of habitual voices of the self (Stiles, 1999; Stiles et al., 2006). This process involves a flexibilization of the patients' repertoire of positions (Hermans, 1997), a reorganization of subjectivity, beginning from the recognition of the self's relegated voices, moving toward an integration of the self's internal dialogues, consolidating agency, authorship, and protagonism in the face of change, and expanding own's experience (Martínez et al., 2012; Martínez & Tomicic, 2019).

In the dialogical self approach, self-narratives are continuously structured and restructured by multiple voices that are in a dialogical exchange that constantly re-edits the

different existing stories (Hermans & Dimaggio, 2004). Voices organize and constrain the system of meaning that emerges from dialogical relations, and that both social and personal positions organize as individuals position themselves from particular places (Hermans, 2001).

Psychotherapy can be understood as a culturally constructed space, and a discursive practice in which the tensions and internal conflicts of the patients can be distinguished, a space that contributes to the modulation and dialogue between the different voices and positions of the patients (Martinez, Tomicic, & Medina, 2014). This activity is possible once patients consult for difficulties that they cannot resolve on their own, and which may be experienced as a narrative disruption in the continuity of the experience (Neimeyer, 2002). Psychotherapy can involve a process of dialogical interaction that includes and accepts the possibility of other perspectives and truths (Martínez et al., 2014), which may be initially contradictory or less evident to patients, and which may subsequently provide them with a more integrated experience.

From a dialogical point of view, psychological difficulties are established and maintained through a recursive process that implies a narrowing of the repertoire of available discourses and subjective positions, and the change is a process of the flexibility of the discourses, complexity of the points of view, or a more fluid exchange between the different voices of the self (Avdi & Georgaca, 2009). Thus, it can therefore be understood as nonlinear and systemic process that generates trajectories over time, and that emergently yields interactions between the different aspects of the self that can be related in an integrated manner.

Non-linearity, dynamical systems, and subjective change

Part of the research on change in psychotherapy has shown that its trajectory follows discontinuous and non-linear paths, and as it unfolds, transitions, periods of destabilization, and reorganization of patterns occur (Bryan & Rudd, 2018; Hayes et al, 2007). Non-linearity corresponds to a disproportion between therapeutic interventions and patient outcomes, which, in terms of the dynamical systems (DS) perspective, corresponds to the capacity of small perturbations to trigger relevant changes, or to the fact that large perturbations can result in minor changes. Dyadic interactions between therapists and patients can be understood as a self-organized system with emerging properties, a dynamic organization that manifests itself in a non-linear manner over time (Salvatore & Tschacher, 2012; Schiepek et al, 2014; Tschacher & Haken, 2007). This dynamic organization can go through critical moments between the different significant moments of psychotherapy, those that can be presented before the establishment of novel patterns that grant new stability to the system and are at the same time a manifestation of therapeutic change (Schiepek, et al., 2014).

The self-organization of the systems in psychotherapy refers to a co-creation (patient and therapist actively) of a joint process, and the relational dynamics that the system is creating by itself (Schiepek, 2003). It has an adaptive function because it allows systems to adjust (rigidity/flexibility) their levels of structural organization depending on environmental demands (Pincus et al., 2014). Moreover, emerging qualities can be understood as recursive and stable patterns in time that arise from the dynamic relationship of the elements of a system without a defined precondition. Some of these patterns can be configured as attractors. Attractors are structures that exhibit structural stability, causing the

elements of a system (e.g., interaction of voices) to follow the same rules or behaviours as the attractor (Guastello & Gregson, 2011). As such, attractors (among others, fixed-point attractors) have absorbing properties that stabilise the system with respect to other potential states. The behaviours of the system move towards these attractors, becoming increasingly predictable (Lamey et al., 2004).

Psychotherapy is an evolving process that has a deterministic dimension, which can lead to the formation of dynamic patterns in the form of attractors, and a dimension associated with chance events or fluctuations in entropy (Tschacher & Haken, 2019b). Entropy can be defined as the amount of information needed to describe the future state of a system, and the greater the amount, the more complex the system (Kowalik et al., 1997). In the course of a psychotherapy there will be variations in entropy depending on the complexity that is presented, decreasing comparatively in regions that are more stable. Stability can be observed in the recurrence of patterns or attractors, which may be maladaptive and very rigid at the beginning of therapy. As the therapeutic work progresses they change to more adaptive and functional ones (Fisher, Newman, & Molenaar, 2011). These state changes towards more functional patterns may follow after moments of high instability, where phase transitions are observed that precede the emergence of attractors. By enslaving to an order parameter (an outcome variable), the components of the therapeutic system adopt a novel behavior that emerges once a control parameter (an independent variable) has exceeded a certain threshold (Salvatore & Tschacher, 2012); thus habitual patterns destabilize and others form in the sense of a global change of state. Research in psychotherapy has shown the connections between these phase transitions, the

appearance of new attractors, increasing complexity in the therapeutic process, and obtaining positive results (Schiepek et al., 2014).

Describing core concepts of the DS perspective, Salvatore, Tebaldi, and Potì (2008) found that sense-making in psychotherapy can be understood as reducing the number of possible combinations of signs during a therapeutic conversation. They describe deconstructive and constructive stages in the sense-making in psychotherapy, and an increase of relevant contents in the discursive network during a constructive stage (Salvatore et al., 2010). In addition to a transition of patterns to one in which the patient is able to connect her internal states with external aspects of the self in good quality sessions (Salvatore et al., 2012). On the other hand, it has been found that in psychotherapy increasingly diverse and flexible dynamic patterns are formed in innovative self-narratives along with a stabilization in the innovative moment of greater complexity, whose content expresses a balance of opposing experiences (Ribeiro et al., 2011). Research studying the relationship between patients and therapists identified regulatory strategies between discourse and vocal quality patterns of patients and therapists during the patients' change episodes, associating the reflective position and affirmative vocal quality pattern in the former, and the proposer position and connected vocal quality pattern in the latter (Tomicic et al., 2015). Also, a dynamic pattern becomes established in the final session of psychotherapy that exemplifies the therapist's exploration skills and the patient's immersed and distanced discourse, although with a greater frequency of the patient's distanced discourse, that is, a discourse in which the patient can see his or her problems from a third-person perspective (Couto et al., 2016).

The transition from disorganisation to integration of the self as a paradigm of subjective dialogical change

Changes in patients' subjectivity can be traced in a trajectory of voices expressing positions, configuring and reconfiguring themselves into increasingly stable patterns. Then describing the change in a patient's subjectivity, in the context of their therapeutic relationship, can help to understand the evolution of that trajectory in a psychotherapy in which prototypically (according to the patient's clinical diagnosis) a process can be observed that begins with a state of dissociation (or vulnerability of the self) of the patient, which is integrated along the psychotherapy. This trajectory can be described from the successful psychotherapist process of a patient diagnosed with Borderline Personality Disorder (BPD) (American Psychiatric Association, 2013). The discourse of a patient diagnosed with BPD can express relevant vulnerabilities of the self: dissociative states (Laddis, Dell, & Korzekwa, 2017), affective instability (Richetin et al., 2017), underlying traumatic experiences (Schiltz & Schiltz, 2016), and insecure attachment-based interactions (Clarkin & De Panfilis, 2013). Evidence has shown that these patients present an impoverished narrative repertoire, influenced by the narrowness of their autobiographical background and by reduced access to conscious feelings of agency, which has depended on their childhood upbringing (Dimaggio, 2011), and, likewise, the improvement in these aspects as the psychotherapy reaches its goals (Osatuke & Stiles, 2006). Dimaggio & Stiles (2007) suggest that multiple disconnected selves can be found in borderline states, and therefore, such a therapeutic processes can account for a subjectivity change trajectory that crosses through these two poles, one initially dissociated, and the other relatively integrated, while at the same time it can manifest different stages that are manifested in a non-linear and self-organizing form.

Research Questions, Objectives and Hypotheses

The general research question of the case study was: *What dynamic patterns in voices, and personal positions emerge during psychotherapy for a patient diagnosed with Borderline Personality Disorder, and the therapist? and, What is the association of these dynamic patterns with the patient's subjective change, and the outcomes?* This research question was covered in two studies[6] that were sequentially implemented. The first study focused on the identification of dynamic patterns, mainly in the personal positions of the patient and the therapist. This first approach to the object of study was carried out only in relevant moments of psychotherapy, choosing the patient's episodes of change, i.e. episodes where the generic contents of the change were manifested. While the second study centred on the whole psychotherapy process, identifying the trajectory of subjective change, as the formation of structural dynamic patterns of voices. Therefore, the first study pointed to the formation of dynamic patterns through the evolution of the generic contents of the patient's change, and the second study at the underlying and emerging global process of subjective change, and its association with the patient's outcomes.

Study 1

The study 1 proposed to answer the following research questions: What dynamic patterns emerge in the personal positions of a patient diagnosed with BPD and the therapist

[6] In order to address the research questions adequately, a systematic review was conducted in parallel to the development of the studies (see Appendix). In this fashion, it was possible to obtain a conceptual and clinical framework of change from the perspective of dynamical systems, which allowed to refine the methodological procedure for describing the formation and evolution of dynamic patterns both in change episodes and in the moment-to-moment trajectory of the patient's subjective change.

in change episodes of long-term psychotherapy? How are the dynamic patterns associated with the process of therapeutic change?

In this study, it was expected that: 1. Dynamic patterns would be found in the personal positions of a patient and the therapist during change episodes in psychotherapy; and 2. Differentiated dynamic patterns would be found in the personal positions of a patient and her therapist in the change episodes of psychotherapy, depending on the level of subjective elaboration of the episodes.

Study 2

The study 2 proposed to answer the following research questions: What dynamic patterns emerge in the voices and personal positions of a patient diagnosed with BPD and the therapist throughout long-term psychotherapy? and, how are these dynamic patterns associated with the change process?

And the following hypotheses are expected: 3. Dynamic patterns would be found in voices and personal positions of the patient and the therapist throughout the psychotherapy, 4. Differentiated dynamic patterns would be found in voices and personal positions throughout the psychotherapy, depending on the progress of the psychotherapy, and 5. It would be found a positive association between dialogical dynamic patterns of the therapy, and the outcomes of the patient.

Method

Participants

The participants were a female patient, 31 years old, diagnosed with BPD, and a male therapist, 53 years old, psychologist, with 25 years of experience as a psychodynamic therapist. The reason for the consultation was a severely aggressive behavior towards her 6-year-old daughter, and it was a referral made by a psychiatrist in a specialized Mental Health Care Centre located in the northern area of Santiago, Chile. The therapy was considered successful since the patient presented an initial score of 123 pts. and a final score of 51 points (< 73 points), and an RCI of 72 points (> 17 points), according to the OQ-45-2 criteria (Chilean version), is considered a statistically and clinically significant change (Lambert, et al., 1996; von Bergen & de La Parra, 2002).

Identification of Voices and Personal Positions through the Model of Analysis of Discursive Positioning in Psychotherapy (MAPP) [Studies 1, and 2]

The MAPP model (Martínez & Tomicic, 2019) identifies subjective states through the so-called personal positions, which are expressed by voices, and that indicate points of view about the self and the surrounding world. It also proposes a taxonomy of personal positions already recognized in a variety of psychotherapies studied.

MAPP operates on three levels. The first level is composed of the voices of individuals, and they constitute the most idiosyncratic form subjectivity. Versions or interpretations of reality are expressed through voices. The second level is formed by personal positions, which aggregate a set of voices that act as their means of expression. These personal positions can be considered part of the self-states that make up subjectivity.

The third level is an abstract taxonomy representing the typical organization of therapists' and patients' personal positions that have emerged in psychotherapy research using this model.

The repertoire of voices can be diverse and unique for each patient since it represents very specifically how their subjectivity is organized, while for therapists it can be less flexible since their voices express their point of view within a professional therapeutic role. Three personal positions have been identified in the patient, and two positions in the therapist. In patients, the Reflective general category indicates a position that, in a critical and associative form, elaborate different aspects of the self and elements of the environment. The Dependent general category considers the self as needy and vulnerable, whereas the Independent general category situates the self as self-sufficient but detached. Regarding psychotherapists, the Proposer general category offers patients new perspectives, an opportunity for dialogue between the patient's positions. The Professor general category situates the therapist as someone who establishes a unique alternative.

Steps in the application of the MAPP

Step 1: Voices identification

The first three sessions of therapy are coded to identify recurrent voices in the discourse of the participants. A voice is a point of view expressed by means of an statement. These statements not only expresses spoken contents, but also the perspective from which that content is mentioned. To do this, it is necessary to read each speech turn and codify it to answer the following question: What are the points of view expressed in

what is being said? Therefore, a voice is a point of view expressed in discourse, which is made visible by means of statements.

In the following example, some associated statements describing feelings of sadness and self-referred guilt are underlined. These are part of the patient's "sad and guilty" voice:

> *174. "P: Is that... I had been angry with my mom... I lived with her... then I got angry with her... and... and my husband disrespected my mom... then... I left the house... with... my husband... and my mom stayed in the house... and I left and everything... and she later... a week, two weeks later... ehh... happened... she killed herself... so I say that maybe she killed herself because of me... that she was angry with me...*
>
> *175. T: mmm... (Nods)*
>
> *176. P: I don't know... that left me like that... sad... it left me bad... and with a guilty conscience... like "why did I... why didn't I stay with her? Instead of preferring my husband I stayed with her?" (Session 1, P = patient, T = therapist)*

Then, the sessions of therapy are analyzed, looking for the voices proposed to evaluate the preliminary characterization, refining, and improve saturation.

Step 2: Idiosyncratic Personal Positions determination

At this stage, the set of voices of psychotherapy is categorized as some idiosyncratic personal position, that is, belonging to the patient or therapist. To do this, the voices of each

participant are grouped into more abstract and inclusive categories. Each category is labelled according to the common subjectivity that involves each specific set or repertoire of voices. The purpose is to answer the question: From what perspective does each of these voices speak?

In the following example, two expressions of the patient's "good for nothing" and "confused" voices are underlined, respectively, and they account for problems that involve others, either as an origin or as a request to be solved. They are part of the dependent subjective position:

> *291. "P: So... that's... that's my question... because suddenly I come here... anyway... I came here because I wanted to... know... why I was so stupid... so dumb... so... maybe...(...)*
>
> *321 P: It's like something tells me... like I can't... decide... decide for myself... I want to be me... I want to have a personality... and say: "I am like this, I am" I can't... because I don't know where I'm going... as you say..." (Session 1, P = patient, T = therapist)*

Step 3: Classification according to the General Taxonomy of MAPP

The general taxonomy of MAPP represents the configuration of personal positions that are typically adopted by the patient and therapist in psychotherapy. This taxonomy has emerged from the application of the two previous stages to adult psychotherapies, from different approaches (e.g. cognitive-behavioral, psychodynamic, etc.). Once steps 1 and 2

have been completed, the classification of the different idiosyncratic personal positions in the corresponding abstract categories was carried out.

Most of the voices identified in the first three sessions were present in some of the following psychotherapy sessions. Only two voices from the patient's dependent position were found for the first time in later sessions.

Change Episodes identification [only Study 1]

Change moments of the patient in psychotherapy were identified, through the Change Episodes Model (Krause et al., 2015; Krause et al., 2006; Krause et al., 2007). Change episodes are segments that contain moments of patient change during a psychotherapy process, and as such correspond to relevant episodes of psychotherapy that allow understanding the connection among aspects of the psychotherapeutic process and its results. From this approach, the psychotherapeutic change is, fundamentally, the creation of a subjective theory. The whole change episodes comprise a change moments of the patient at the end of the episode, and the previous interaction between patient and therapist, related to the thematic content of the change moment (Figure 1).

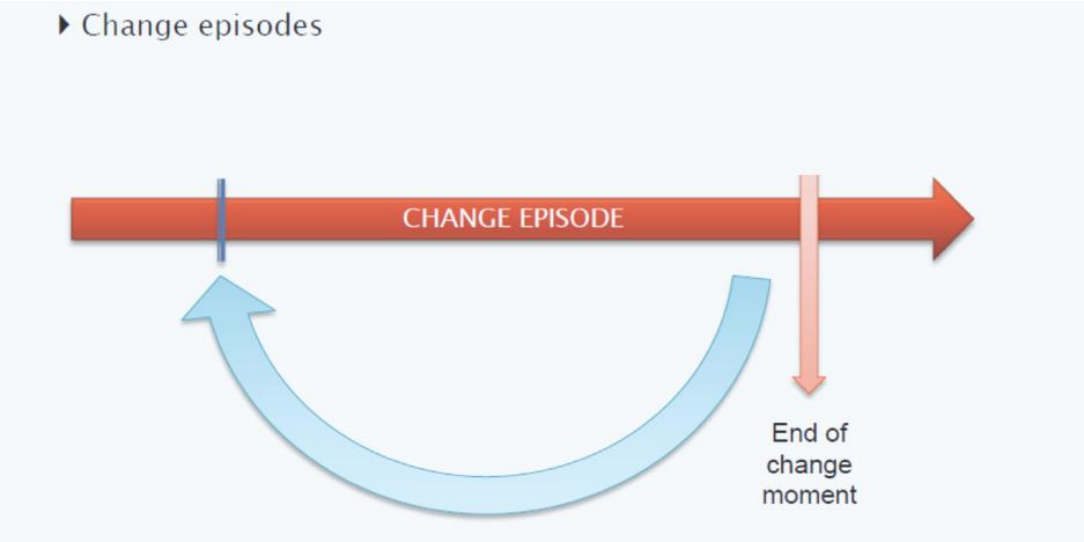


Figure 1: Segmentation of a change episode [taken from Krause et al., (2015)]

The method for determining change episodes is based on the notion of therapeutic change as a transformation of patients' subjective theories about themselves, their relationship to the environment and their problems (Krause et al., 2007). Subjective change is operationalized through the "Generic Change Indicators" (GCI) (see Table 1) (Krause et al., 2006), which identify the contents of change (Krause et al., 2007). The delimitation of the change episode extends from the moment in which the therapist and patient began to talk about specific content of the change and ends with a moment of change (Krause et al., 2006).

Table 1: Generic change indicators [taken from Krause et al., (2015)]

Change Level	Generic Change Indicators
I. Initial consolidation of the structure of the therapeutic relationship	1. Acceptance of the existence of a problem
	2. Acceptance of his/ her limits and of the need for help
	3. Acceptance of the therapist as a competent professional
	4. Expression of hope
	5. Questioning of habitual understanding, behaviour and emotions
	6. Expression of the need for change
	7. Recognition of his/her own participation in the problems
II. Increase in permeability towards new understandings	8. Discovery of new aspects of self
	9. Manifestation of new behaviour or emotions
	10. Appearance of feelings of competence
	11. Establishment of new connections (self, surrounding, own biography)
	12. Reconceptualization of problems and/ or symptoms
	13. Transformation of valorizations and emotions in relation to self or others
III. Construction and consolidation of a new understanding	14. Creation of subjective constructs of self through the interconnection of personal aspects and aspects of the surroundings, including problems and symptoms
	15. Founding of the subjective constructs in own biography
	16. Autonomous comprehension and use of the context of psychological meaning
	17. Acknowledgement of received help
	18. Decreased asymmetry between patient and therapist
	19. Construction of a biographically grounded subjective theory of self and of his/her relationship with surroundings

Change episodes can be classified into three hierarchical levels according to the GCI assigned to the moment of change presented by the patient (Altimir et al., 2010). The change episodes of level I correspond to early changes in the patient that contribute to the initial consolidation of the structure of the therapeutic relationship (GCI 1- 7), for example, "Recognition of the existence of a problem" (GCI 1), "Acceptance of the therapist as a competent professional" (GCI 3) or "Recognition of his/her participation in the problems" (GCI 7). Change Episodes of Level II correspond to changes that account for an increase in permeability to new understandings (GCI 8-13), e. g. "Discovery of new aspects of self" (GCI 8) or "Reconceptualization of problems and/or symptoms" (GCI 12). Finally, Change Episodes of level III correspond to changes that express the construction and consolidation of the new understandings (GCI 14-19), for example, "Creation of subjective constructs of self through the interconnection of personal aspects and aspects of the surroundings, including problems and symptoms" (GCI 14), or "Autonomous comprehension and use of the context of psychological meaning" (GCI 16).

Identification of dynamic patterns by means of hypothetical attractors through the State Space Grid (SSG) [Studies 1, and 2]

An attractor[7] is a state in which a behavior or group of behaviors is established towards which the system tends as its dynamics unfolds (Lamey et al., 2004). After identifying the positions / voices of the patient and the therapist, a quantitative stage in which dynamic patterns (i.e. hypothetical attractors) were identified in their interaction as

[7] The transition between system states can manifest itself in the emergence of at least four types of attractors (a) Fixed-point attractor, in which the trajectory of a system tends to an equilibrium state; (b) Cyclic attractor, which follows an oscillating periodic motion; (c) Toroidal attractor, which follows a quasi-periodic motion; and (d) Chaotic attractor, which occurs when a system enters a chaotic state by presenting high sensitivity to initial conditions and non-periodic, practically unpredictable trajectory within the space defined by that attractor (Taylor, 2010). The purpose of this study was to identify only hypotetical fixed-point attractors.

they arose in the therapeutic conversation. For this purpose, hypothetical fixed-point attractors were tracked using the State Space Grid (SSG; Hollenstein, 2013) technique, through the Gridware software (Lamey et al., 2004).

A grid represents the temporal interaction between two ordinal, categorical, or nominal variables, and their duration in a two-dimensional plane. This representation of the state space of a system depicts its underlying structure (Hollenstein, 2013) in terms of attractor states. The dots in the grid depict an event across different trajectories realized in time. That is, the time elapsed in which the patient and her therapist have remained in this definite state before following, either speech-turn by speech-turn or where a certain voice begins and stops being present so that another voice appears. To identify hypothetical attractors, i.e. the most recurrent and stable patterns, the winnowing procedure introduced by Lewis, Lamey, & Douglas (1999) calculates a heterogeneity index to estimate at what level of interactions the system reaches a relatively steady-state (Formula 1).

$$Heterogeneity\ j = \frac{\sum(Observed\ i - Expected\ j)^2 / Expected\ j}{\#\ of\ Cells\ j} \quad (1)$$

where *i* is an index of the cell and *j* is an index of the current iteration

To apply this procedure mean durations of the events, visits (according to Lamey, et al, 2004, a cell visit is one or more consecutive events occurring within a single cell, beginning upon a trajectory's entry into the cell, and ending upon its exit), or duration per visit could be used. This calculation is iterative, starting with all occupied cells, and sequentially eliminating the cells with the lowest occupancy at each step. To identify which cell or cells are hypothetical attractors, the heterogeneity values are quantified as a

proportion of the first heterogeneity value from the first iteration ($Heterogeneity_j$ / $Heterogeneity_1$), and reviewed the value after the largest drop in proportions, seeking a drop of 50% or more in this proportion. The cell or groups of cells falling below that value would be considered hypothetical attractors in a given therapy session.

Grid Ware also incorporates a measure of entropy, which in this case was used to evaluate the complexity of each session, and to categorize them according to their values, following the premise that the higher the entropy, the greater the complexity in the state of the system. The entropy calculation included in the Grid Ware Software was used to assess the degree of flexibility for each of the sessions. This entropy measure is based on the probabilities of the duration of each event. In this case, a duration was determined for each event. If *P* is the probability, the entropy is calculated according to Shannon's (1948) formula (Formula 2).

$$\sum Pi * \ln(1 / Pi) \quad (2)$$

where P_i is the probability in cell *i*. *Pi* is the total duration in cell *i* divided by the total duration of the entire trajectory (Hollenstein, 2013).

According to Hollenstein, (2013), a low level of entropy indicates high predictability of a sequence of events, and thus a high ordering of events. A high level of entropy indicates a highly unpredictable sequence and thus high randomness of events.

Outcome Instrument

Therapy outcome was assessed by Lambert's Outcome Questionnaire (OQ-45.2; Lambert et al., 1996), which has been adapted and validated for Chilean population. For

this population the Reliable Change Index (RCI) was defined at 17 points, test-retest reliability was of 0.90 for the total scale in non-clinical samples, and Cronbach's Alpha was of 0.91 both in clinical as well as non-clinical samples (von Bergen & de La Parra, 2002). The therapy was considered successful since the patient presented an initial score of 123 points and a final score of 51 points on the OQ-45-2, a Reliable Change Index (RCI) of 72 points (> 17 points), which according to the Chilean version criteria is considered a statistically and clinically significant change. The OQ-45.2 instrument was filled in by the patient before the beginning of each session.

Procedure

Patient and therapist were invited to participate in the context of the research project "Mentalizing in psychotherapeutic processes with patients diagnosed with a personality disorder: Its role in mutual regulation and its association with therapeutic change" (funded by ANID, FONDECYT 1150639). The ethical protocol for this study was approved by the Scientific Ethics Board of Universidad Diego Portales and informed consent forms were signed by both, the patient and the therapist, who allowed therapy material to be used for research purposes and related publications. In addition, the ethical process was approved by the Scientific Ethical Committee of Social Sciences, Arts and Humanities of the Pontificia Universidad Católica de Chile, ID: 181108008.

All psychotherapy sessions were video-recorded and transcribed following the guidelines proposed by Erhard Mergenthaler (Mergenthaler & Gril, 1996). A total of 41

sessions were included in the analyses[8]. Session 38 was not recorded, and the recordings of sessions 26 and 43 were incomplete.

1. *Implementation of the MAPP*

First, MAPP was applied to identify the voices (and personal positions) of the patient and the therapist in change episodes, and throughout the psychotherapy. To ensure reliability in the application of the MAPP, a procedure similar to that suggested by Hill and her team (Hill et al., 2005; Hill, Thompson & Williams, 1997) for Consensual Qualitative Research (CQR) was followed. Two independent coders worked on the first three transcribed sessions. Each codification was discussed and agreed upon, with the participation of a expert judge (a team member and co-creator of the MAPP method), and then categorized into different idiosyncratic personal positions. The data were cross-checked against the general MAPP taxonomy. Later, based on the categories of voices and personal positions already identified, their correspondence was evaluated in each speech turn during all the psychotherapy sessions. The judge assisted in the coding of the speech turns where the two coders had the most doubts or disagreements. Half of the psychotherapy (sessions 1 - 22) was coded by Augusto Mellado, and coder 2 (a qualified psychologist, and trained in MAPP). The second half (sessions 23 - 44) was coded by Augusto Mellado and coder 3 (a qualified psychologist, and trained in MAPP).

[8] The MAPP coded data from each psychotherapy session are anonymised and organised in files that can be analysed with the SSG technique. They are made public in the OSF repository, at the following link: https://osf.io/kbydz/.

Following the suggestions of Hill et al., (1997), and Hill et al., (2005), the data have been organized in a CAQDAS Atlas.ti version 8 (Friese, 2019), from where the process could be carried out sequentially. Using one of the inter-coder agreement measures provided by Atlas.ti, coders in the first half of the therapy obtained a Hoslti Index of 70.3%, while those in the second half obtained a Hoslti Index of 75.7%.

2. *Implementation of the Change Episodes Model*

Two coders trained in the observation of Change Episodes (Krause et al., 2006; Krause et al., 2007) independently observed all the videotaped and transcribed sessions of the therapy, identifying change moments in the patient, and suggesting some coding corresponding to one of the 19 GCI of the model. Later, with the active participation of a trained judge, it is confirmed that both coders have independently registered moments of change in the same period of the session, or come to an agreement regarding the presence of a moment of change when one of the coders has registered it. Finally, the two coders and the judge delimit the change episodes according to their thematic correspondence and assign a number considering an appropriate indicator.

3. *Implementation of the SSG*

After having realized the codifications of the personal positions (study 1), and the voices (study 2), the data that were coded for the voices were imported into the Grid Ware Software (Lamey et al., 2004) for analysis. The positions, and voices of the patient and therapist identified were placed on a grid that represents all possible interactions in episodes grouped by level (study 1), or in all speech-turns at each session (study 2). In every cell of each grid, the x-axis depicts the categories of patients' voices / positions, while the y-axis represents the categories of therapists' voices / positions. There was one grid per

level of episode / session[9], and each grid consisted of the interaction of each patient and therapist position (5 x 3 grids) / voice (14 x 6 grids). The winnowing procedure was used to identify the hypothetical attractors in the episodes grouped by level / each session.

Mean visits (study 1), and mean duration (study 2) were used to perform the heterogeneity calculation within change episodes, and each session, respectively, assuming that all events were of equal duration. The procedure began by ordering all the cells that had at least one event and progressed iteratively, eliminating the cell with the lowest average in each step (in total between seven and 27 iteration steps were performed in study 1, while between 14 and 39 were performed in study 2). In each step, a heterogeneity score was calculated based on the observed and expected values for each cell. The null hypothesis was that all of the behaviour in the state space was equally distributed (the homogeneity was high) such that each cell's mean visits / duration were the same. To identify which cells constitute a hypothetical attractor, the heterogeneity values were quantified as a proportion of heterogeneity, taking as reference the first value where all the cells are included. A value of 1 meant that all interactions included were equally distributed. The iteration process made it possible to find, depending on the case, when there was a significant drop in the proportion of heterogeneity (which is defined by Lewis et al., 1999 with a value of 0.5), thus accepting that the cells contained in the iteration were different from the remaining cells, and could establish the identification of an hypotetical

[9] In each case the grid was constructed from the therapist's two personal positions and the patient's three personal positions, or from the patient's 14 voices and the therapist's six voices. In study 1, missing data and positions where more than one voice was present in the same speech-turn (mixed) were also added. In study 2 there was no missing or mixed data because a criterion was established that retained the predominant voice whenever there were more than two voices in the same speech turn.

attractor. Finally, was obtained the associated entropy level for each session using the formula provided by the Grid Ware software (study 2).

4. *Identification of sessions with dialogical dynamic patterns*

The designation "dialogical patterns" aligns with what from the dialogical self approach is conceived as the development of a reflective meta-position or meta-perspective, which allows the exploration of the self, the distancing between the self and the flow of experiences, the authorship of specific situations, the interaction between different positions and voices, and the facilitation of a dialogic space (Avdi & Georgaca, 2009; Gonçalves & Ribeiro, 2012; Hermans, 2003; Montesano, Oliveira, & Gonçalves, 2017). In sessions with dialogical patterns, the hypothetical attractors were formed with the three reflective voices of the patient interacting with at least some voice of the therapist´s proposer position, and no more than one active monological voice of the patient. In sessions with monological patterns[10], the hypothetical attractors were formed that included reflective, dependent and/or independent voices of the patient (at least two cells with active monological voices), and some voice of the proposer and/or professor positions of the therapist.

[10] To contrast the results obtained with the dialogical patterns, monological patterns were also defined and identified.

Results

Voices and personal positions of the patient and the therapist

In the patient, three idiosyncratic personal positions were identified: (1) the integrative, (2) the incapable, and (3) the detached. The integrative position is expressed through three voices: continuity, self-dialogue, and grounded voices. At the same time, according to the taxonomy of the MAPP, this position corresponds to the Reflective Position. The incapable position is expressed through a variety of voices: good for nothing, envious girl, fearful, confused, sad and guilty, desire, and fear of failing voices. And, according to the taxonomy of the MAPP, this position corresponds to the Dependent Personal Position. The detached position is expressed through four voices: a voice of duty, the disaffectionate, angry and carefree voices. And, according to the taxonomy of the MAPP, this position corresponds to the Independent Personal Position. In the therapist, two idiosyncratic personal positions were identified: the proposer (1) and the expert (2). The proposer position is expressed through four voices: inquirer voice, confrontational voice, meta-analytical voice and self-revealing voice. In turn, according to the taxonomy of the MAPP, this idiosyncratic position corresponds to the Proposer Personal Position. Finally, the expert position is expressed through two voices: the specialist's voice and the asserting voice. In turn, according to the taxonomy of the MAPP, this idiosyncratic position corresponds to the personal position called Professor.

The different voices and personal positions identified in this therapy, as well as brief description, and characterization of each can be found in tables 2, 3 and 4.

Table 2: Patient´s and her therapist´s voices, personal positions, and MAPP taxonomy

Patient's personal positions and voices	Therapist's personal positions and voices	MAPP taxonomy
The Reflective (The integrative)	**The proposer** (The proposer)	Patient
1.1 Continuity voice	1.1 Inquirer voice	1 The Reflective
1.2 Self-dialogue voice	1.2 Confrontational voice	2 The Dependent
1.3 Grounded voice	1.3 Meta-analytical voice	3 The Independent
	1.4 Self-revealing voice	
The Dependent (The incapable)	**The Professor** (The expert)	Therapist
2.1 Good for nothing voice	2.1 Asserting voice	1The Proposer
2.2 Envious girl voice	2.2 Specialist´s voice	2 The Professor
2.3 Fearful voice		
2.4 Confused voice		
2.5 Sad and guilty voice		
2.6 Desire voice		
2.7 Fear of failing voice		
The Independent (The detached)		
3.1 The voice of duty		
3.2 Disaffectionate voice		
3.3 Angry voice		
3.4 Carefree voice		

Note: Only two of the patient's voices (2.6 Desire voice; and 2.7 Fear of failing voice), belonging to the Dependent position, which had not been detected in the first three sessions, were identified in the rest of the sessions.

Table 3: Description of the personal positions in psychotherapy

Patient's Personal Positions	**Description**
The Integrative	The patient impresses as being able to reflect on her dissociated aspects and generate understandings about the origin and dynamics of her problems; integrating content and emotion. From this position, the patient manifests a commitment and responsibility towards herself and others.
The Incapable	The patient impresses as a person without the capacity to solve the challenges of daily life, trapped in feelings of fear, confusion, sadness and guilt; that as a whole, manifest vulnerability. Someone unable to take responsibility for herself and others; while at the same time, she expresses the need to be helped and understood.
The Detached	The patient establishes herself as someone who leaves out affective bonds and feels comfortable without others. Moreover, she shows herself functioning according to what should be done, while also managing to push aside the painful aspects of her life that could make her weak and vulnerable. Thus, from this position the patient shows agency and autonomy; sacrificing her desires, feelings and needs.
Therapist's Personal Positions	**Description**
The Proposer	The therapist performs verbal actions of inquiry and indication that promote a change of perspective in the patient. Likewise, the therapist is installed as someone who invites the patient to reflect on herself, the relationship between different aspects of self and the situations relevant to her.
The Expert	The therapist establishes himself as someone who knows and has clarity of how matters are, specifically, how psychological problems occur, develop and operate.

Table 4: Characterization of the different voices belonging to each personal position

Personal Positions of the Patient	Voices of the Patient	Characterization
The Integrative (dialogical)	Continuity voice	The patient contributes pertinent data to the therapy; dates, events and relevant information for the progress of the session. There is not much elaboration on what is said. The information and data provided are usually enunciated in past or a present perfect tense and frequently account for events that occur outside of the therapeutic encounter. Example: 'I didn't drink alcohol... I didn't smoke... then I met my partner... and with him I started to do things that I didn't do... well, I tried cigarettes... I tried alcohol'
	Self-dialogue voice	The patient reflects on herself and her dissociated aspects, taking distance and perspective from a coherent and regulated emotionality. This voice allows her the expansion of understanding about what happens and what she is doing, integrating content and emotion. Example: 'Do you also know what is happening to me?...like... that I feel like... thinking some things... like I feel like I want to imitate her [her mother].'
	Grounded voice	The patient expresses a commitment and responsibility to herself and others, especially her children. The grounded voice is one in which the patient knows what is happening, validates and accepts her feelings, can adapt to situations, can give affection without feeling weak, and is involved in life with interest. Example: 'No, if I'm okay..', I said... but then time passed and I said, "it's not because I'm wrong... I'm not right with myself..." then I came here [to therapy]... I'm interested... because I need... to heal.'
The Incapable (monological)	Good for nothing voice	The patient expresses a feeling of incapacity in her own presence and that of others. This voice is characterised by a high level of self-demand that leads the patient to continually devalue herself. Example: 'Like it doesn't... it doesn't matter and then I do things... then the next day I'm so ashamed... that... that I feel dirty... I feel... ehh... bad mother... ehh... bad daughter... everything... everything there may be.'
	Envious girl voice	The patient expresses envy for the childhood that others had, and that she did not. She laments her lack of affection and expresses ambivalence about her adulthood. Example: 'I feel envious... even of the affection of people... when they tell me... that the father or mother is worried about them... also that makes me sad... and I say, "Ouu... why... I don't have that?"'

	Fearful voice	The patient expresses anxious aspects that interfere with daily situations. This voice expresses restlessness, nervousness, and the feeling of being accelerated. With this voice, she reports a decrease in her ability to take charge of herself. This voice transmits weakness, need for help and, at times even panic. Example: ‘and then together with another person I get nervous... or I go to the street and I'm scared... and... it's like everything is weird.’
	Confused voice	The patient is involved in a sense of dissociation, of not knowing what she is doing or why she is doing it; all of which results in a loss of agency. She is trapped in actions and desires that she feels strange and despairing, further losing further contact with herself. Example: ‘but, I still don't realize... what I have... I don't know who I am... as if I act in one way... and then somewhere else I am another person.’
	Sad and guilty voice	The patient shows constant self-reproach regarding the patient's behaviour, especially concerning her mother and daughter. This voice has a tone of grief and sadness as she blames herself, because her way of being and acting harms others. Example: ‘I don't know... that made me feel sad... like... sad because... that made me feel bad... and with a guilty conscience... as with guilt that "why did I have...? why didn't I stay with her [her mother]?"’
	Desire voice	The patient shows ambivalence. The patient impresses by seeking to be looked at, by men and to seduce them, but regrets it; feeling ashamed and guilty. She often refers to herself from this voice as ‘cheeky’. Example: ‘no... I'm not going to do that... and then I still say "no if... what's wrong with it? If I'm having a good time, and no one else knows about it..." (laughs) like I feel that... I make advances towards men.’
	Fear of failing voice	The patient expresses fear that her daughter will live what she suffered in her childhood (e.g. violence, sexual abuse). This fear is directly related to an unrealistic fear of acting like her own mother acted with her, when she was a child. Example: ‘Yes... yes because... it fears me... because I think that maybe I'm going to make a mistake... or that... my daughter is... I don't want her to judge me too... like if she sees me drink... do things... that I forbid her.’
The Detached (monological)	The voice of duty	With it, the patient focuses on what she should do, disregarding the reflections on its meaning. In addition, the voice replaces and invalidates its actual feeling for 'what it should feel’ Example: ‘But without wanting to, it finally taught us that (...) like that I get down... like that... and when I get down... I feel bad... I say, ”no, I can't be like that... weak... I have to be strong."’

	Disaffectionate voice	With this voice, she reveals how unnatural the role of a mother is for her, and her disinterest in adopting it. This becomes especially evident when she refers to her daughter, not only expressing her carelessness and lack of interest in her, but also feelings of rejection before her affective requests. Example: 'I feel like I don't love her... or suddenly she's crying... suddenly I feel like laughing... I see her crying as well as... "ah! that is tragic! [disaffected expression]" I say... things like that.'
	Angry voice	The patient manifests resentment from past situations. It is lived from an attitude of rejection towards others, often venting aggressively to them, wishing to be left alone, and not wanting to be disturbed or hindered. Example: 'But all of a sudden I hate him... and I say, "why did he do this... why did he do that?" I never tell him directly... but I say... "and you are drinking?... why don't you take care of the house?"'
	Carefree voice	The patient expresses resignation or minimisation of the issues that affect her that she has not been able to resolve. This voice adopts an attitude of indifference or indolence towards issues that are important for the patient. Example: 'It's not that it's always in my head...but... I try not to let that get to me...I close that...I leave it at the back of my...head...I try not to remember that.'

Personal Positions of the Therapist	**Voices of the Therapist**	**Characterisation**
The Proposer (dialogical)	The Inquiring voice	Through statements, the therapist performs interrogative actions, such as questions, signals, reflexes or clarifications; that have therapeutic intentions. It promotes the generation of a reflexive movement, placing the patient at the centre of that reflection. Example: 'When you talk about guilt... ehh... was it because of what happened with your daughter... because of... (reformulates) or was there guilt also with something about your mom?'
	Confrontational voice	The therapist points out aspects of the patient's speech that are absent, contradictory or inconsistent with her non-verbal expressions. Likewise, proposing to the patient, the search for an explanation, that allows her to understand or make sense of these contradictions. Example: 'Are you worried about these things? Because I... at times... she, I see her genuinely worried... but also suddenly... I see her as... as if... she lives it as, as something a bit distant... right?'

	Meta-analytical voice	The therapist promotes a perspective that allows the patient to reflect on her actions, emotions, and the relationship between these, as well as on other individuals. It does so by indicating at possible relationships between facts, actions or processes that are not entirely manifested. Example: 'In that sense...umm...when that happened with your daughter...did something similar happen to you too? Like she didn't recognize herself...to be doing that...to have beaten her.'
	Self-revealing voice	The therapist makes explicit to the patient how, what she says and does, resonates in him, and how this leads him to ask questions or offer interpretations about her. Example: '(interrupting) sure... my, my... my doubt at times... at times... yes... my doubt... is how much do you want to know about all that... how much would you like to know about all that...?'
The Expert (monological)	The asserting voice	The therapist makes affirmative statements that seek to reaffirm or install truths in the discourse. With this voice, the therapist clarifies the patient's thoughts, avoiding relativization and/or rationalization. Example: 'That's an intense dialogue!' or 'I mean...most of this stuff is more your husband's enthusiasm than yours.'
	Specialist´s voice	The therapist acknowledges that he has expertise on the patient's psychological problems. With this voice, he screens the symptoms related to the general health of the patient, although not always, in association with her psychological problems. This voice also includes the discourses of psychoeducation and communication of information regarding issues related to the therapeutic setting. Example: 'but it's also important to think that… that has nothing to do with you having a disease... or that you are insane... this has to do with something... in your life (...) you have a hard history... very hard.'

The following example presents an interaction between the therapist speaking from an inquirer voice (belonging to his proposer position), and the patient speaking from a confused voice (belonging to her dependent position). It is taken from the first half of the first session:

Speech turn	Voice
49 T: Is that what they told you?	Inquirer voice
50 P: Yes...	Continuity voice
51 T: ok...	Inquirer voice
52 P: But... I still don't realize that... like... I don't know what I suffer... I don't know what I have... like...	Confused voice
53 T: How?	Inquirer voice
54 P: That I don't know who I am... like I act in one way... and then somewhere else I'm someone else...	Confused voice
55 T: How is that? Tell me...	Inquirer voice
56 P: I don't... (brief pause) because... when I am talking and everything... and then... ehh... I don't feel like… I am so nervous... and then with another person I get nervous... or I go to the street and I get scared... so... it's like... it's all weird... I don't know... I feel like... I want to say: "I'm like this"... and... I'm an idiot or I'm nice... or I'm angry... I don't know... but I can't say....	Confused voice
57 T: mmm... (nods)	Inquirer voice
58 P: ...who am I... because... suddenly I say: "I am angry, I am cheerful, I am nice... I have some things... like I say that everything... I have it all together... so I find that it should not be like that ...	Confused voice
59 T: mmm... (nods)	Inquirer voice
60 P: Like everything... like... like... like I don't feel my identity... like I can't say who I am...	Confused voice

This is another example of an interaction between the therapist speaking from a meta-analytical voice (proposer position), and the patient speaking from a self-dialogue voice (reflective position). It is taken from the second half of the twenty-eighth session:

Speech turn	Voices
390. T: I don't know if, if this is... a like ehh... a fear that it is ehh... that it is passing... or it is part of a transformation... I am not clear but... but I do notice that she is, she is very happy and she seems to like the feeling.... that, that I imagine that, that she will also try to... maintain this... somehow... like... like preserving this way of, of, of starting to live life... more... also slower, more calm. .. that is to say... with less anger...	Meta-analytical voice
391. P: Yes...	Continuity voice
392. T: What, what I... maybe that is what you have read in my face as well as looking... I have wondered where is that suffering child that we have seen here so many times...	Meta-analytical voice
393. P: mmm... (nods)	Continuity voice
394. T: I think that's what I'm looking for... where is it? ah? yes, he put it in a drawer, ironed it and put it away (patient laughs) huh? Ehh...	Meta-analytical voice
395. P: It's that... I feel like I don't... I have started to think about... because I still think... I mean what's wrong with me... because I still, I (laughs) still not knowing me sometimes... I say what's happening to me?	Self-dialogue voice
396. T: mmm... (nods)	Meta-analytical voice
397. P: That it's weird I say... and I start thinking... that I was fragile... that I was like a child... when, when I said that I was like in a corner at the bottom, like in a tunnel like that...	Self-dialogue voice
398. T: mmm... (nods)	Meta-analytical voice
399. P: my feeling... I look inside and I feel that I don't... no, I don't see it there... I don't know where it is... I don't know where...	Self-dialogue voice
400. T: mmm... (nods)	Meta-analytical voice

401. P: that... and at the same time suddenly I start thinking... and it doesn't hurt... I get... I see myself... I see myself suddenly but I don't see myself at the bottom of the tunnel....	Self-dialogue voice
402. T: What do you see?	Inquirer voice
403. P: No... I see like... I see her like that... but I don't... I don't feel sadness for her... I don't feel like "poor girl"... I don't feel sadness for her... like... I don't know where she is... if suddenly I start thinking... and I imagine... that she is there... I don't feel sadness for her... I don't feel... I don't get that feeling that I know she is there... and I know she is going to come out... I don't know... I don't get that feeling that I know she is there... and I know that she is going to come out. ... I don't know... a thing like that... I know	Self-dialogue voice
404. T: mmm... (nods)	Inquirer voice
405. P: Like I don't... I don't feel like that... with... that worry... like that... I don't have that fear that it will appear...	Self-dialogue voice

Change episodes during psychotherapy

The patient presented 55 change episodes during the psychotherapy. Of this total, 4 corresponded to level 1 (initial consolidation of the structure of the therapeutic relationship), 39 corresponded to level 2 (increase in permeability towards new understandings), and the remaining 12 episodes corresponded to level 3 (construction and consolidation of a new understanding). The distribution of the episodes in the different sessions according to the level of the indicator can be seen in figure 2.

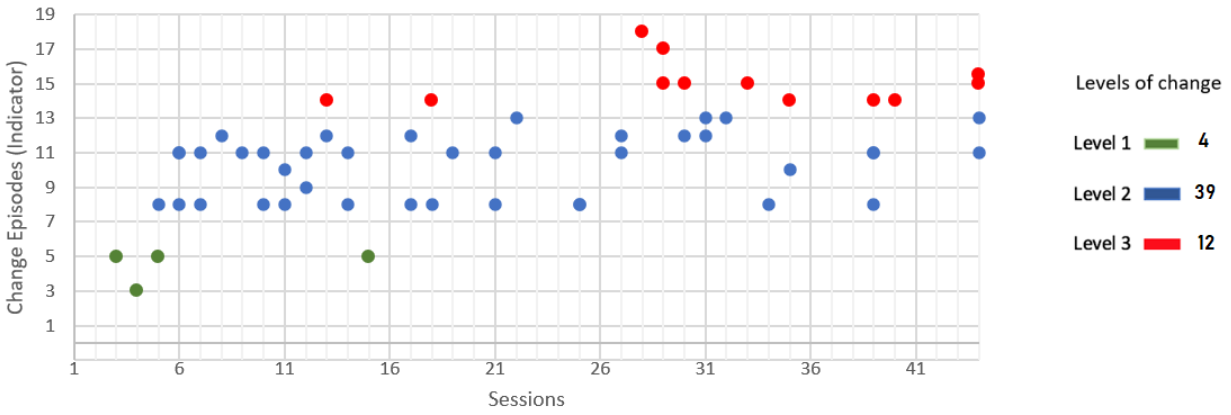


Figure 2: Change episodes of the patient in the psychotherapy (44 sessions)

Table 5 summarises the number of change episodes identified in each session, the highest episode level reached, the presence of dialogical and monological patterns, the level of entropy, and the patient's outcome.

Table 5: Summary of the main results in each psychotherapy session

Session	N° Change Episodes	Highest Episode Level	Dialogical pattern	Monological pattern	H_S	OQ-total
1	0	0			1.98	123
2	0	0			2.21	114
3	1	1			2.84	99
4	1	1			2.80	98
5	2	2			2.95	94
6	3	2		YES	2.84	82
7	2	2			3.07	95
8	1	2			2.78	86
9	1	2			2.89	94
10	2	2		YES	3.22	79
11	2	2		YES	2.71	76
12	2	2		YES	2.59	79
13	2	3		YES	3.17	80
14	2	2		YES	2.88	80
15	1	1			2.18	81

16	0	0	YES		1.97	68
17	2	2			2.69	71
18	2	3			2.80	68
19	1	2			2.31	73
20	0	0			2.56	85
21	2	2		YES	3.10	71
22	1	3			2.79	71
23	0	0			3.00	83
24	0	0			3.12	78
25	2	2			2.90	83
27	2	2		YES	2.68	65
28	1	3	YES		2.34	62
29	2	3	YES		2.35	63
30	2	3	YES		2.54	56
31	2	2		YES	2.85	46
32	1	2			2.95	56
33	1	3			2.76	56
34	1	2			3.02	54
35	2	3			2.67	48
36	0	0			2.50	56
37	0	0	YES		2.30	65
39	4	3	YES		2.91	53
40	1	3			2.63	45
41	0	0	YES		2.77	50
42	0	0		YES	2.93	46
44	4	3	YES		2.28	51

Note: H_s = Shannon´s entropy

Specific results of the study 1

Dynamic patterns of personal positions in change episodes

Including all the change episodes the patient had in the psychotherapy and considering each of the three levels of subjective elaboration of the change, according to

the grouping of change episodes, the following results in the personal positions were obtained (*Hypotheses 1, and 2*).

a) A dynamic pattern (hypothetical attractor) in level 1 change episodes (initial consolidation of the structure of the therapeutic relationship) emerged between the Professor Position of the therapist and the Reflective Position of the patient. Also, there was a pattern between the Proposer Position of the therapist and the Reflective and Dependent positions of the patient (figure 3).

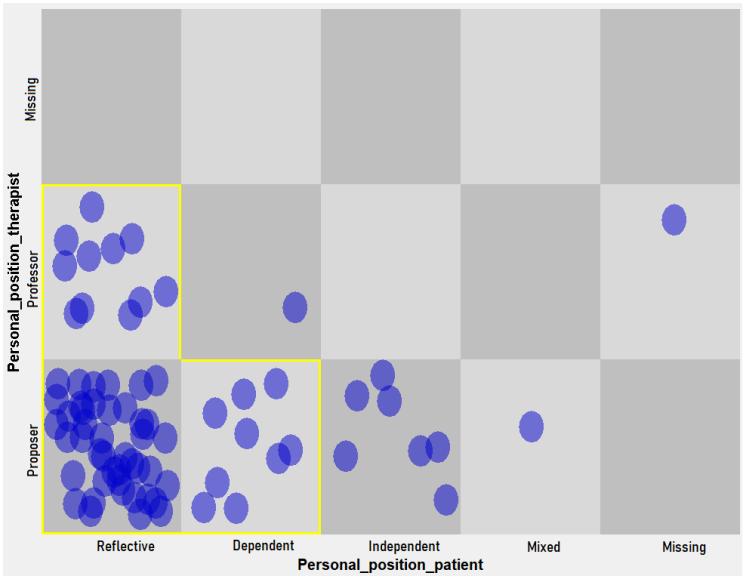


Figure 3: Dynamic pattern in personal positions of the patient and the therapist (level 1, change episodes)

As shown in Table 6, the drop of more than 50% in the heterogeneity proportion marks the last three cells as hypothetical attractors.

Table 6: Derivation of attractors with the heterogeneity score in a seven used cells (3x5) grid in level 1 change episodes. Cells "professor / reflective", "proposer / reflective" and "proposer / dependent" are identified as a hypothetical attractor.

Step	Visits (Mean Visits)										
	Missing	Mixed	Professor/ Dependent	Proposer/ Independent	Proposer/ Dependent	Professor/ Reflective	Proposer/ Reflective	Total (V)	#Cells (C)	Expected (V/C)	
1	1	1	1	2	4	6	10	25	7	3.6	
2		1	1	2	4	6	10	24	6	4	
3			1	2	4	6	10	23	5	4.6	
4				2	4	6	10	22	4	5.5	
5					4	6	10	20	3	6.7	
6						6	10	16	2	8	
7							10	10	1	10	
	(Observed - Expected)^2/ Expected							Sum	Cells	H-score	H-proportion
1	1.9	1.9	1.9	0.7	0.1	1.7	11.6	20	7	2.79	100%
2		2.3	2.3	1	0.0	1	9.0	16	6	2.58	93%
3			2.8	1.5	0.1	0.4	6.3	11	5	2.23	80%
4				2.2	0.4	0	3.7	6	4	1.59	57%
5					1.1	0.1	1.7	3	3	0.93	33%
6						0.5	0.5	1	2	0.50	18%
7							0.0	0	1	0.00	0%

b) A dynamic pattern (hypothetical attractor) in level 2 change episodes (increase in permeability towards new understandings) emerged between the Professor Position of the therapist, and the Reflective Position of the patient. Also, a pattern could be found between the Proposer Position of the therapist and the Reflective Position of the patient (figure 4).

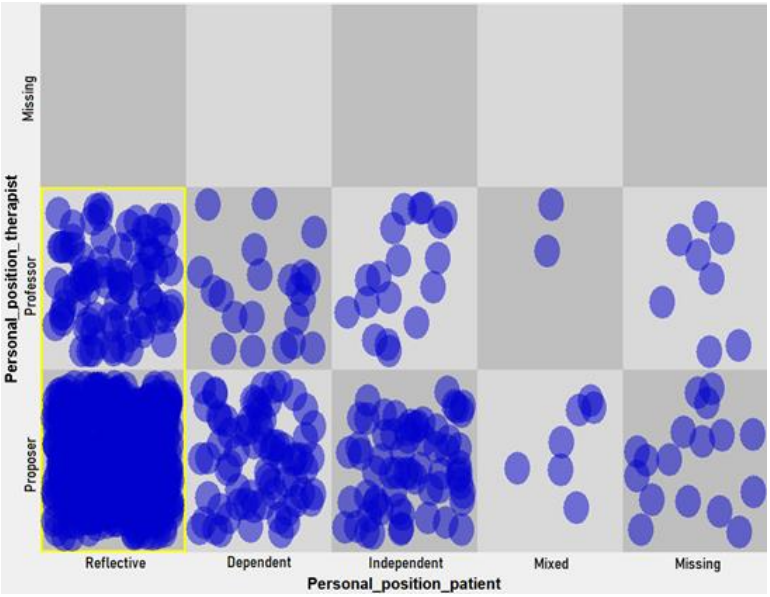


Figure 4: Dynamic pattern in personal positions of the patient and the therapist (level 2, change episodes)

As shown in Table 7, the drop of more than 50% in the heterogeneity proportion marks the last two cells as hypothetical attractors.

Table 7: Derivation of attractors with the heterogeneity score in a ten used cells (2x5) grid in level 2 change episodes. Cells “professor / reflective” and “proposer / reflective”, are identified as a hypothetical attractor

Step	Visits (Mean Visits)												
	Mixed	Mixed	Missing	Missing	Professor/ Independent	Professor/ Dependent	Proposer/ Independent	Proposer/ Dependent	Professor/ Reflective	Proposer/ Reflective	Total (V)	#Cells (C)	Expected (V/C)
1	2	4	6	9	10	12	20	24	32	73	192	10	19
2		4	6	9	10	12	20	24	32	73	190	9	21
3			6	9	10	12	20	24	32	73	186	8	23
4				9	10	12	20	24	32	73	180	7	26
5					10	12	20	24	32	73	171	6	28
6						12	20	24	32	73	161	5	32
7							20	24	32	73	149	4	37
8								24	32	73	129	3	43
9									32	73	105	2	53
10										73	73	1	73
					(Observed - Expected)^2/ Expected					Sum	Cells	H-score	H-proportion	
1	15.4	12	9.1	5.4	4.4	2.7	0	1.2	8.5	150.8	209.5	10	20.95	100%
2		13.9	10.8	7	5.8	3.9	0.1	0.4	5.6	127.6	175	9	19.45	93%
3			12.8	8.7	7.6	5.4	0.5	0	3.3	106.5	145	8	18.09	86%
4				11	9.6	7.3	1.3	0.1	1.5	87	118	7	16.81	80%
5					12.0	9.5	2.5	0.7	0.4	69.5	95	6	15.79	75%
6						12.7	4.6	2.1	0	51.7	71	5	14.22	68%
7							8.0	4.7	0.7	34.3	48	4	11.94	57%
8								8.4	2.8	20.9	32	3	10.72	51%
9									8.0	8	16	2	8.00	38%
10										0	0	1	0.00	0%

c) A dynamic pattern (hypothetical attractor) in level 3 change episodes (construction and consolidation of a new understanding) of the therapy emerged between the Proposer Position of the therapist and the Reflective Position of the patient (figure 5).

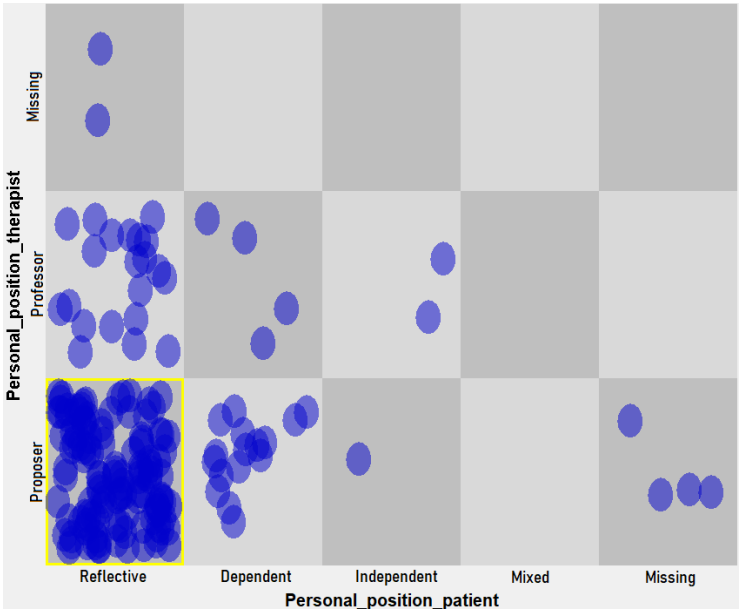


Figure 5: Dynamic pattern in personal positions of the patient and the therapist (level 3, change episodes)

As shown in Table 8, the drop of more than 50% in the heterogeneity proportion marks the last cell as a hypothetical attractor.

Table 8: Derivation of attractors with the heterogeneity score in an eight used cells (3x5) grid in level 3 change episodes. Cell "proposer / reflective" is identified as a hypothetical attractor

Step	Visits (Mean Visits)											
	Proposer/ Independent	Missing	Professor/ Independent	Professor/ Dependent	Missing	Proposer/ Dependent	Professor/ Reflective	Proposer/ Reflective	Total (V)	#Cells (C)	Expected (V/C)	
1	1	1	1	2	4	5	5	18	37	8	4.6	
2		1	1	2	4	5	5	18	36	7	5.1	
3			1	2	4	5	5	18	35	6	5.8	
4				2	4	5	5	18	34	5	6.8	
5					4	5	5	18	32	4	8	
6						5	5	18	28	3	9.3	
7							5	18	23	2	11.5	
8								18	18	1	18	
	(Observed - Expected)^2/ Expected								Sum	Cells	H-score	H-proportion
1	2.8	2.8	2.8	1.5	0.1	0	0	38.7	48.9	8	6.11	100%
2		3.3	3.3	1.9	0.3	0	0	32.1	41	7	5.86	96%
3			4	2.5	0.6	0.1	0.1	25.4	33	6	5.45	89%
4				3.4	1.2	0.5	0.5	18.4	24	5	4.79	78%
5					2	1.1	1.1	12.5	17	4	4.19	69%
6						2	2	8	12	3	4.02	66%
7							3.7	3.7	7	2	3.67	60%
8								0	0	1	0	0%

Dynamic patterns of voices in change episodes

To describe which voices particularly express the personal positions found in level 3 change episodes, a similar procedure was performed with the SSG.

d) A dynamic pattern (hypothetical attractor) in level 3 of the change episodes (construction and consolidation of a new understanding) of the therapy has emerged between the therapist's inquirer voice & the patient's continuity, self-dialogue and grounded voices (Figure 6).

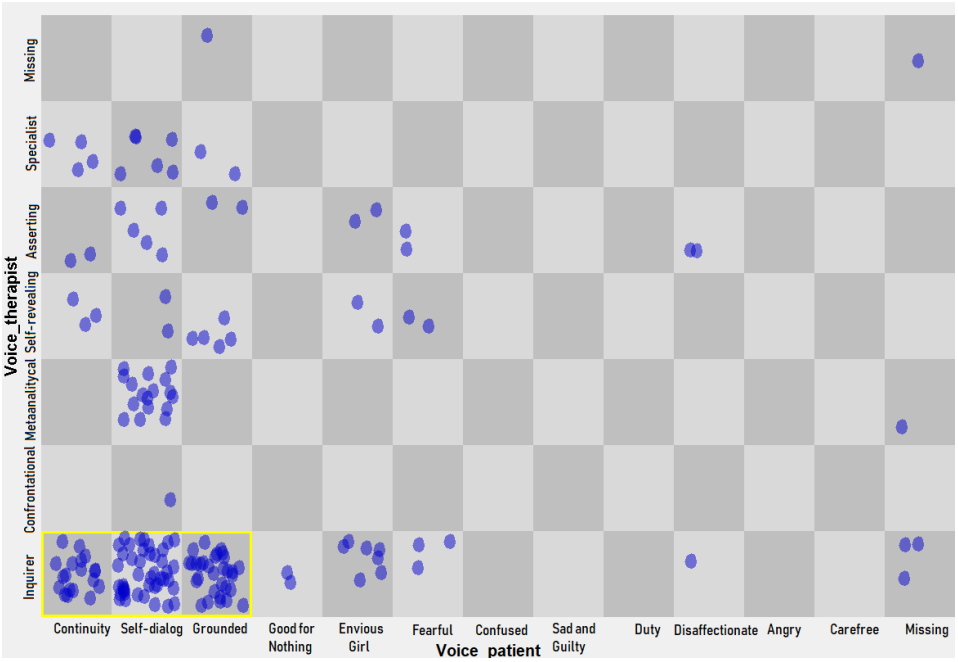


Figure 6: Dynamic pattern in the voices of the patient and her therapist (level 3, change episodes)

Specific results of the study 2

In most of the psychotherapy sessions, hypothetical fixed-point attractors were identified (*Hypothesis 3*). This means that in most sessions, stable patterns in the interaction between the voices of the patient and the therapist could be recognized. On the one hand, this report cannot describe the hypothetical attractors of the forty-four sessions of this psychotherapy. On the other hand, five sessions were sufficient to describe the trajectory that began from the patient's subjective disorganized state to the reflective integration of aspects of her self (*Hypothesis 4*). Two sessions were chosen from the beginning of the therapy (1, and 6) that showed dynamic patterns that reflected the predominance of the patient's dependent positions, next two intermediate sessions (28, and 30) that exhibited patterns in which an interaction between the therapist's proposer position, and the patient's reflective position was identified, and lastly the final session (44) in which such a pattern that included the patient's reflective position was consolidated. The session-by-session scores of the OQ-45-2 can be seen in Figure 7, highlighting the sessions that were considered in this study. The dynamic patterns of the rest of the sessions can be found in the Appendix.

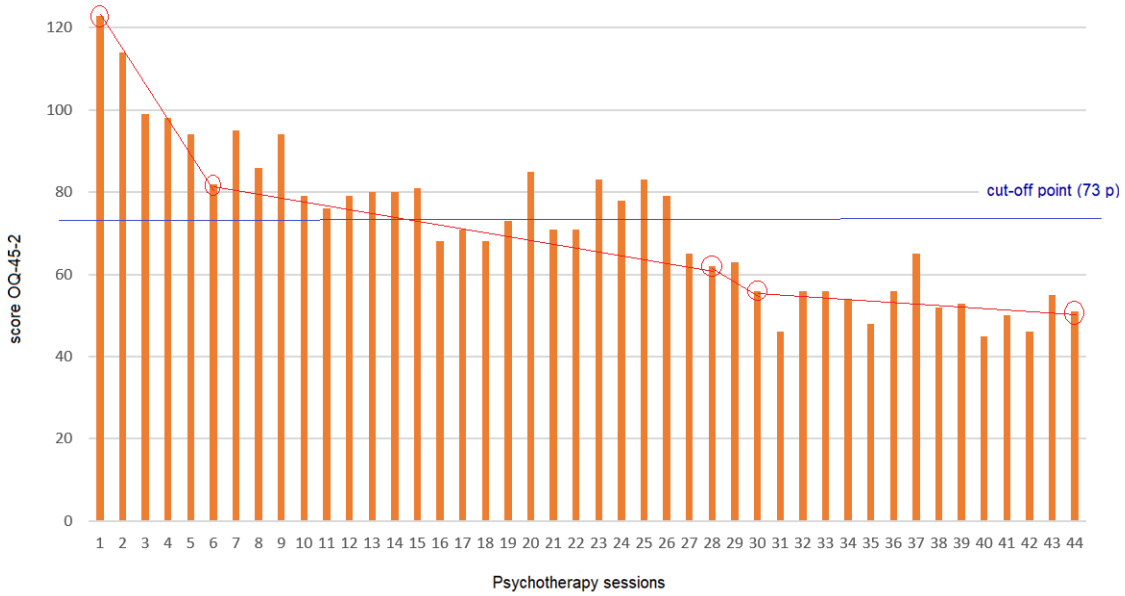
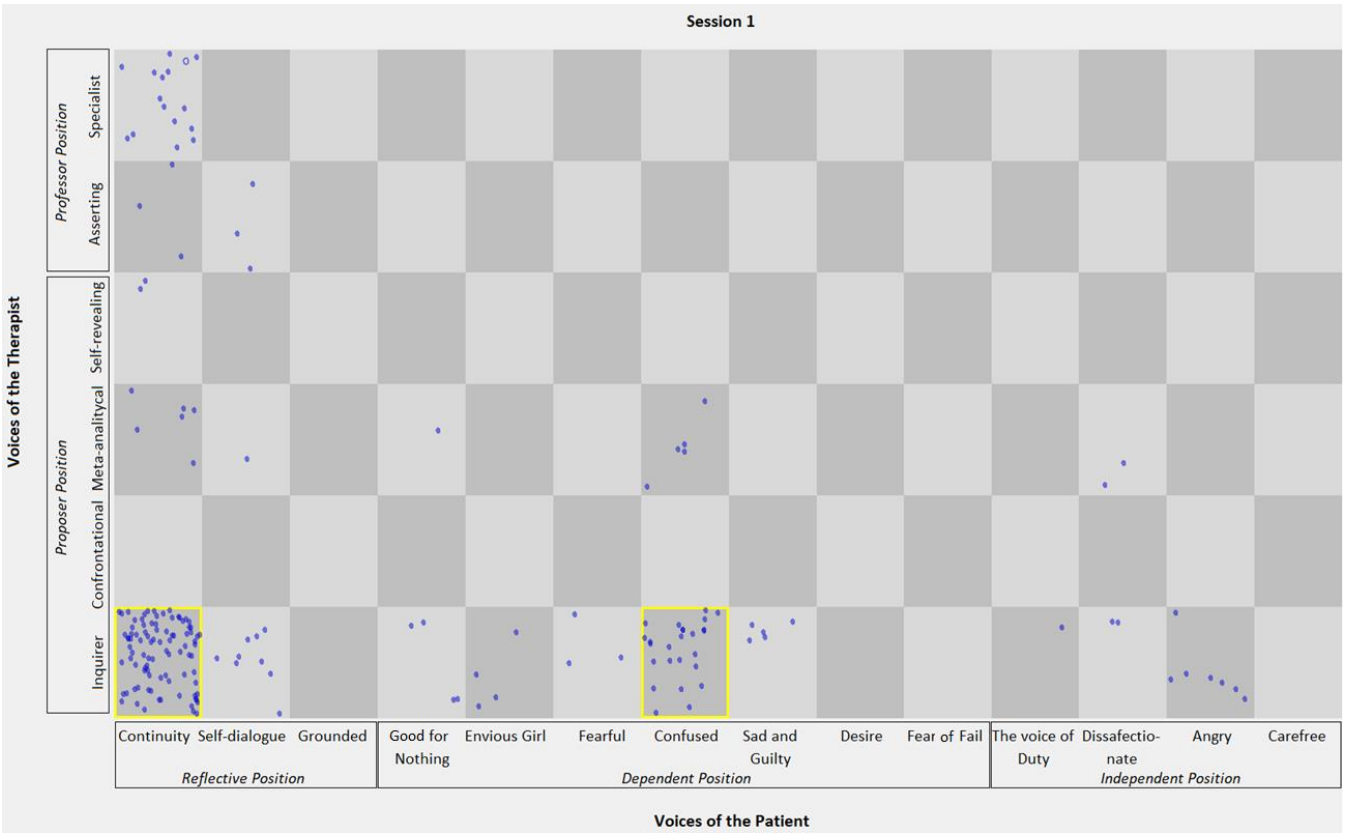


Figure 7: OQ45-2 session-by-session scoring. The cut-off score for the functional Chilean population (73 points) and the trajectory of the scores in the chosen sessions are also shown.

Dynamic patterns were identified in Session 1 (Figure 8). It could be observed that cell 1 / 1 (Inquirer/Continuity) appears as part of the hypothetical attractors, and is configured as a central aspect of the therapeutic conversation in this session. It can be understood that the therapist promotes reflective participation and focuses on the therapeutic objectives, and the patient continues providing relevant information according to her reason for consultation. In this first session, cell 1 / 7 (Inquirer/Confused) was identified, highlighting that the patient was speaking with a voice that accounts for a disorganized subjective state. The above is consistent with this first session, where an attempt is made to articulate a reason for consultation: The patient expresses her insecurities, conflicts, and fears, both concerning herself, as well as her relationship with her relatives, her marriage, her mother's suicide, her father's alcoholism, the abuse she suffered in her childhood, and especially an episode of aggression from her toward her daughter.



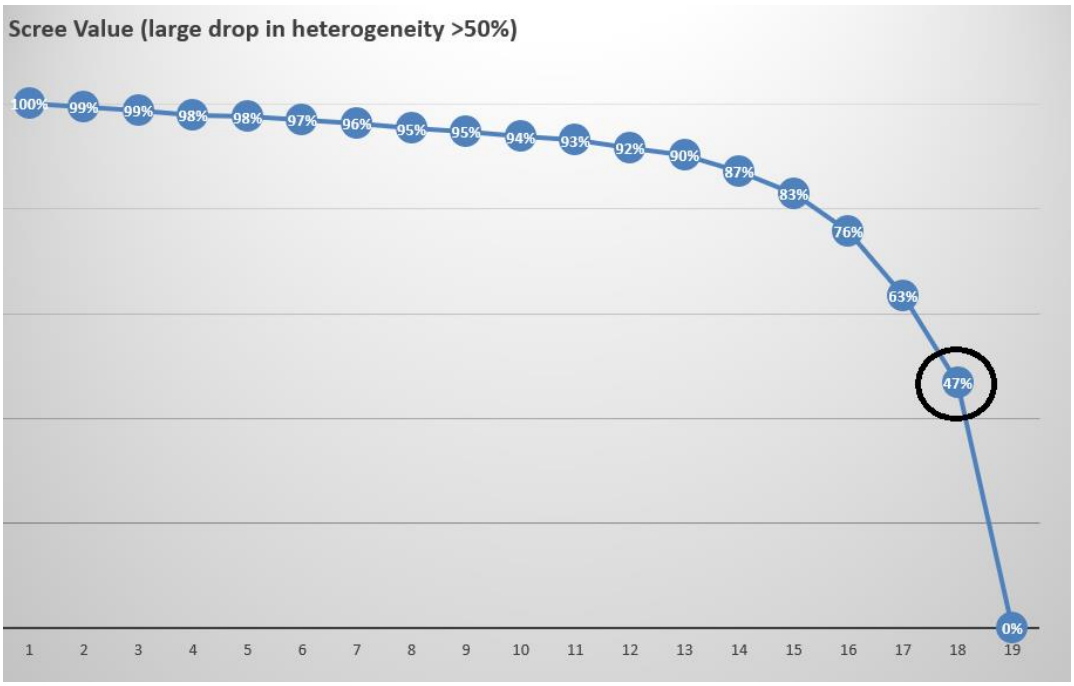
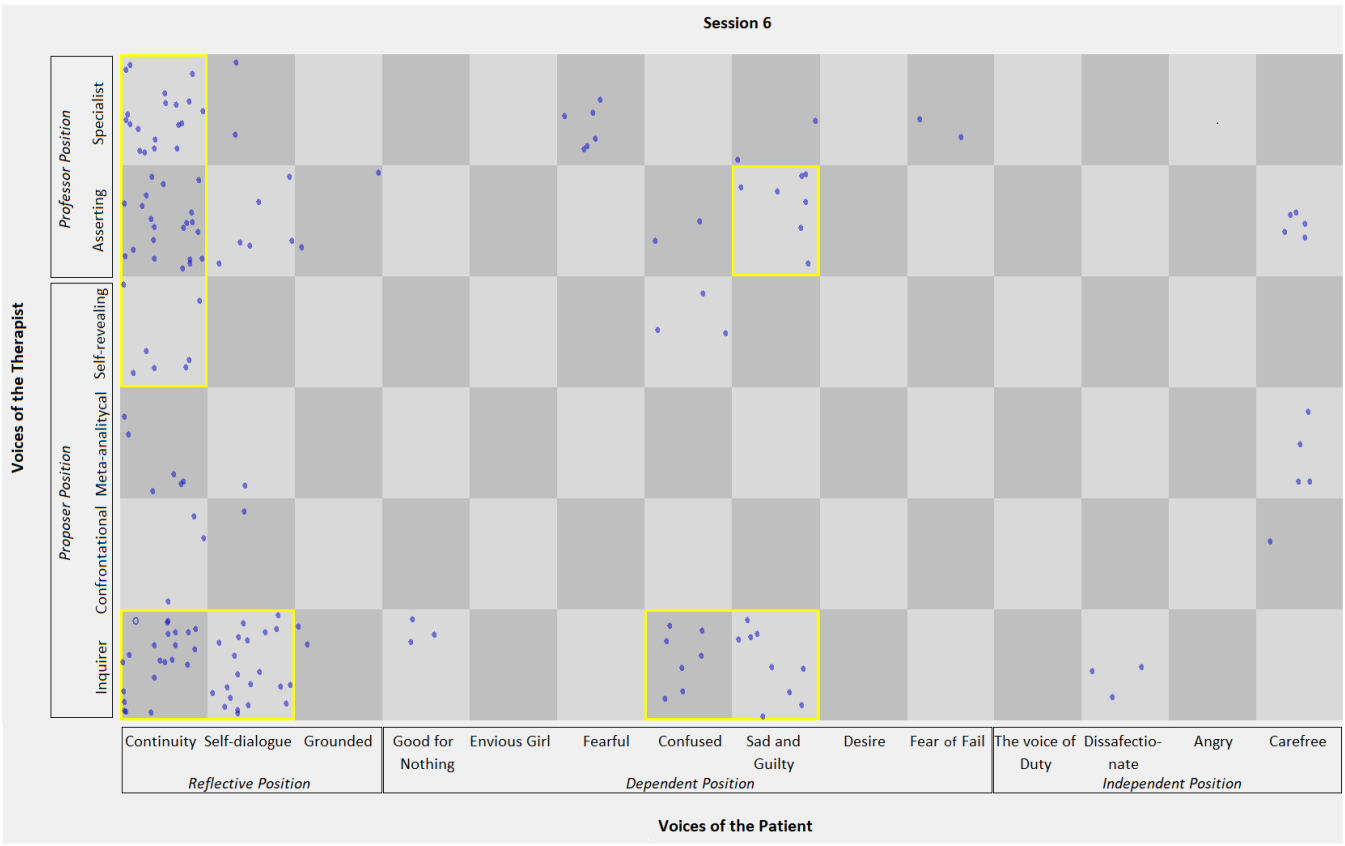


Figure 8: Hypothetical attractors identified in Session 1, are highlighted in yellow squares (up). The circumference marks from which step the component cells of the attractor are included (down).

Dynamic patterns identified in Session 6 are shown in Figure 9. A session that could be considered without a particular attractor acting as a unifier of the therapeutic conversation. The therapist was very active with his "expert" voices. Cell 1/ 7 (Inquirer/Confused) was present again, and cell 1/ 8 (Inquirer/Sad & Guilty) was added. Here, the "proposer" and "expert" voices of the therapist were linked with "dependent" voices of the patient, which could be part of more rigid dimensions of her personality. The appearance of these voices is framed in a session in which the patient comments on her self-esteem problems, the tricky relationship with her daughter, and the ambivalent relationship with her mother during her childhood. From the patient's perspective, her mother was able to teach her lessons, sometimes beating her, but sometimes being directly negligent in her care, unprotecting her at key moments in her life, and of whom she remembers an abortion in her own home facilitated by a person outside the family. In this session, the patient talks about the guilt associated with her mother's suicide, the need to heal to move forward, and the difficulties in talking about her childhood.



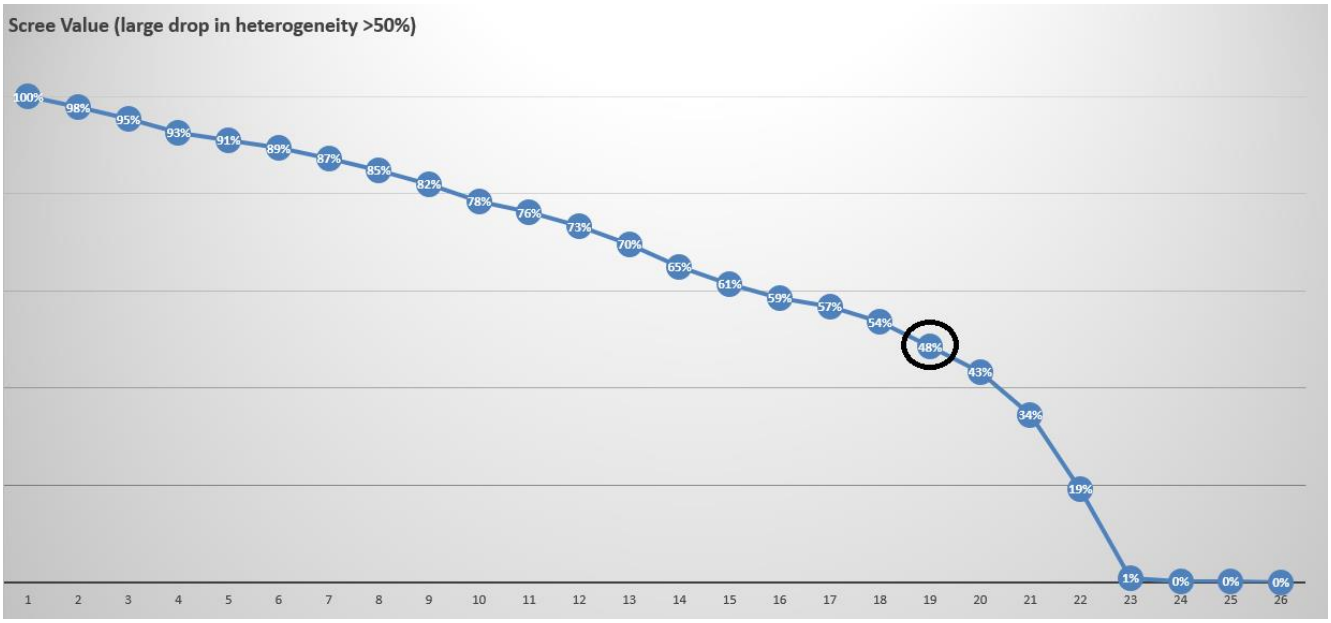
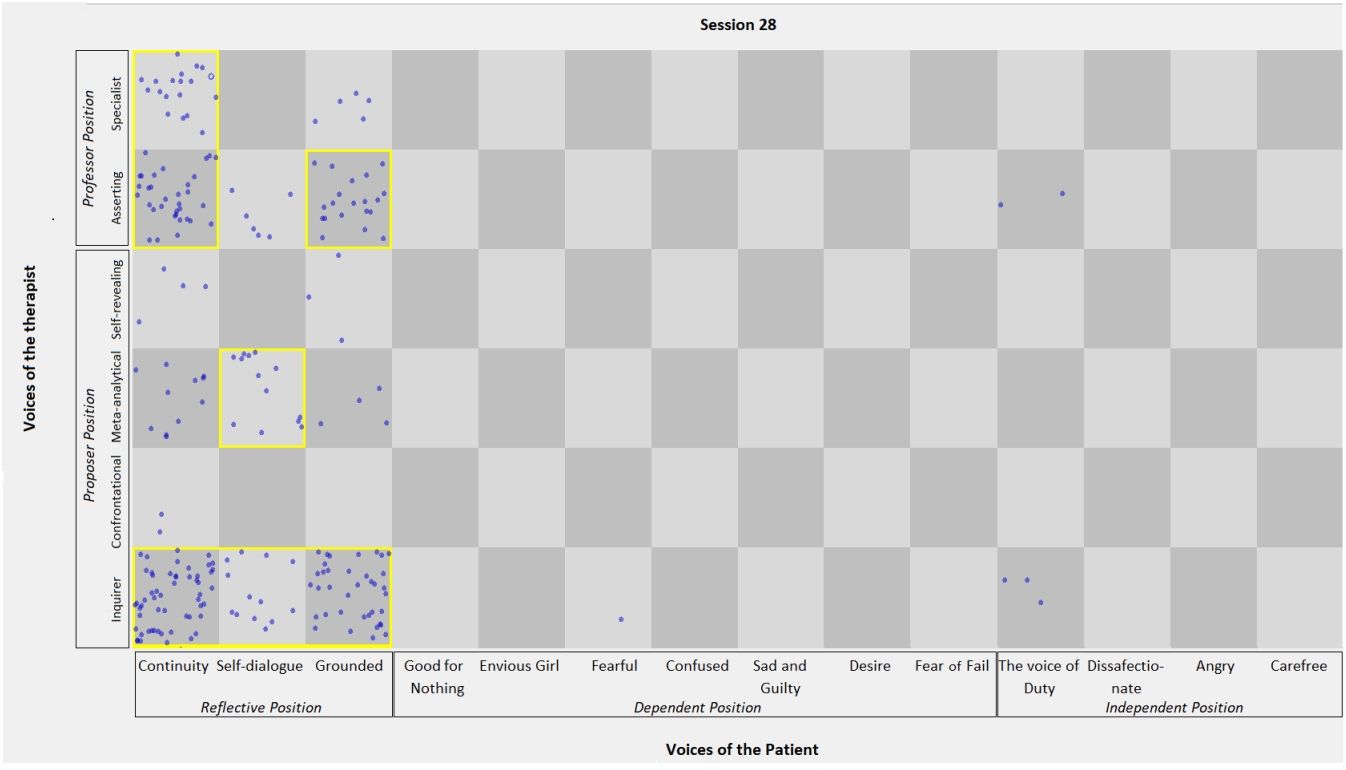


Figure 9: Hypothetical attractors identified in Session 6, are highlighted in yellow squares (up). The circumference marks from which step the component cells of the attractor are included (down).

Dynamic patterns were identified in Session 28 (see Figure 10). Hypothetical attractors are described that only present reflective voices of the patient, it is striking that the metanalytical and inquirer voices of the therapist are also active together with the patient's reflective self-dialogue voice, cells 1 / 1,2, and 3; and 3 / 2. In this session, the patient indicates that she is becoming aware of some behaviours that were hurting her, or of situations of carelessness towards her children that she is beginning to face, for example, smoking, making hasty decisions that she later regrets, feeling in competition with her daughter, or not worrying about her children's well-being and school activities. The patient notes that she feels a self-esteem sense and that she is being able to think things through, realising the difference between acting in distress, or anger, and a more calm state. Further, she says she feels more adult, recognizing that there are situations that will always make her feel sorry for herself, and beginning to overcome the difficulties of the adult/child duality.



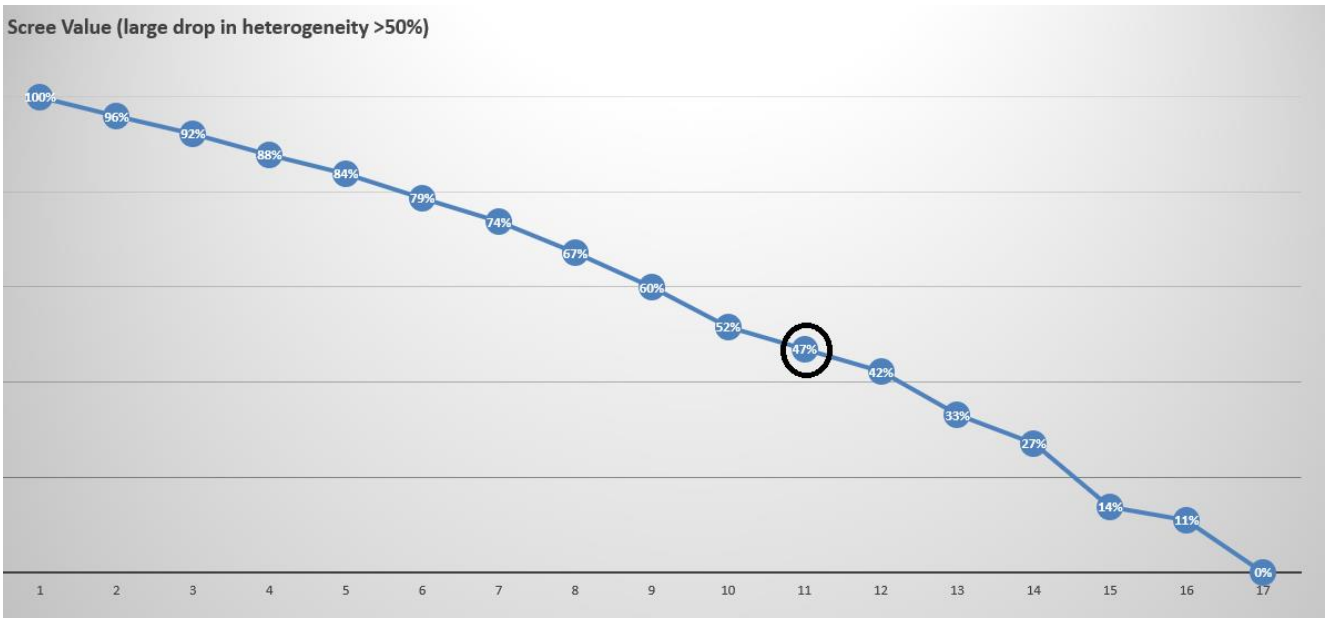
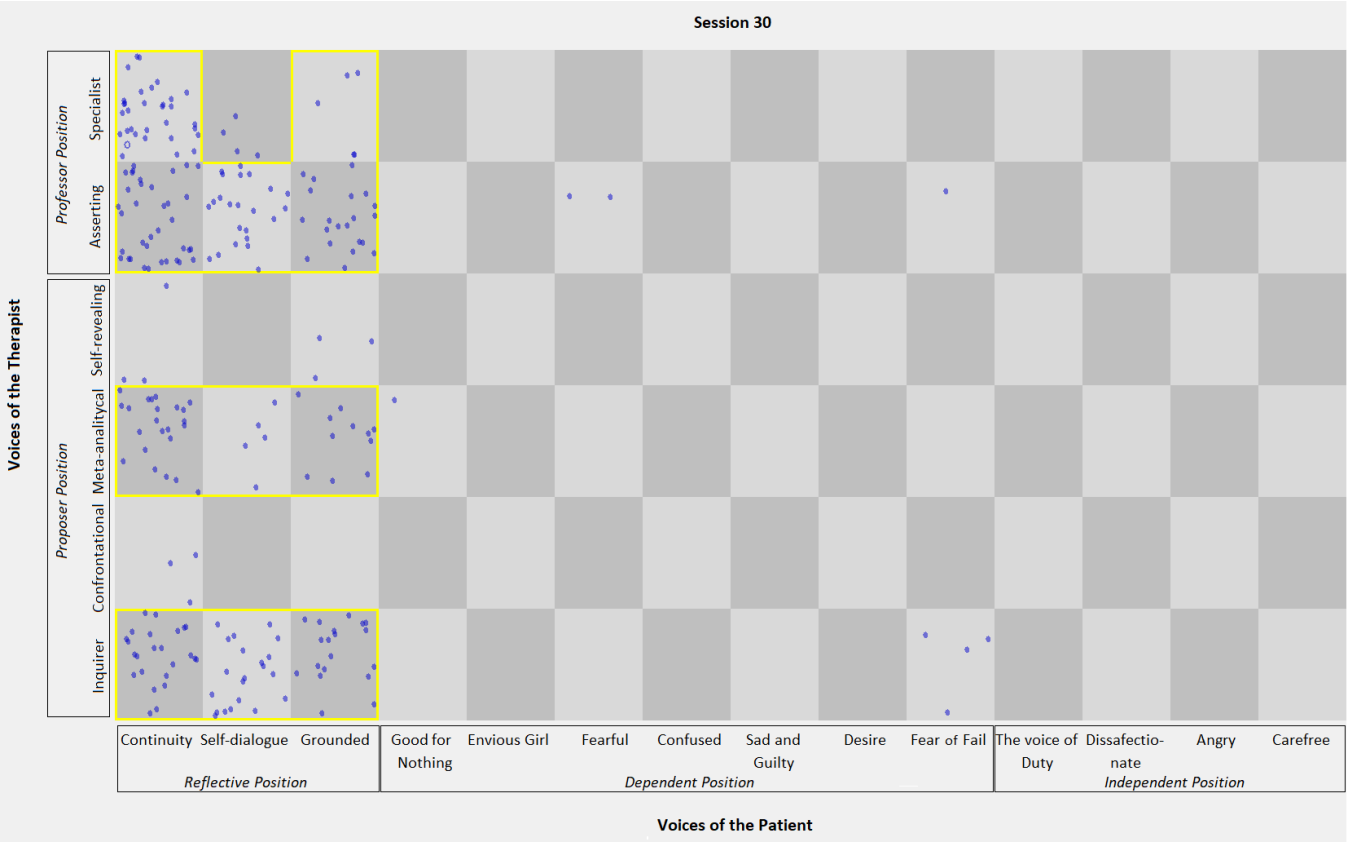


Figure 10: Hypothetical attractors identified in Session 28, are highlighted in yellow squares (up). The circumference marks from which step the component cells of the attractor are included (down).

Dynamic patterns identified in Session 30 are shown in Figure 11. A pattern consolidates between the therapist's meta-analytical voice and the patient's self-dialogue voice, although in this case, the patient's grounded voice is added (cells 3 / 2, and 3), and the interaction between the therapist's inquirer voice and the patient's three reflective voices (cells 1 / 1, 2, and 3). There is also a hypothetical attractor formed between the therapist's asserting voices and the patient's three reflective voices (cells 5 / 1, 2, and 3). In this session, the patient points out that she has decided to stop working to be more committed to the care and support of her children, and that the fact that she has worked now feels like a challenge that she overcame on her own. She complements this by noting her decision to stop drinking alcohol abusively, the same problem that her mother had, and which the patient hoped to overcome, especially considering her daughter's well-being, empathizing with the sense of anguish and

hopelessness that both may have felt every time they saw their mothers under the influence of alcohol. The patient begins to reflect on how she can exercise her maternal role towards her daughter. Regarding her mother, she confirms that she feels she has understood her, even associating her alcohol consumption with an antidepressant effect. She feels that she is more willing, more attractive, and more adult, a feeling she confirms when talking about getting her own house, where she will be able to live independently from her husband's family. She feels that she has made progress in her therapy: "so it's like I'm realizing as I'm leaving here, then I'm thinking, I'm analyzing myself".



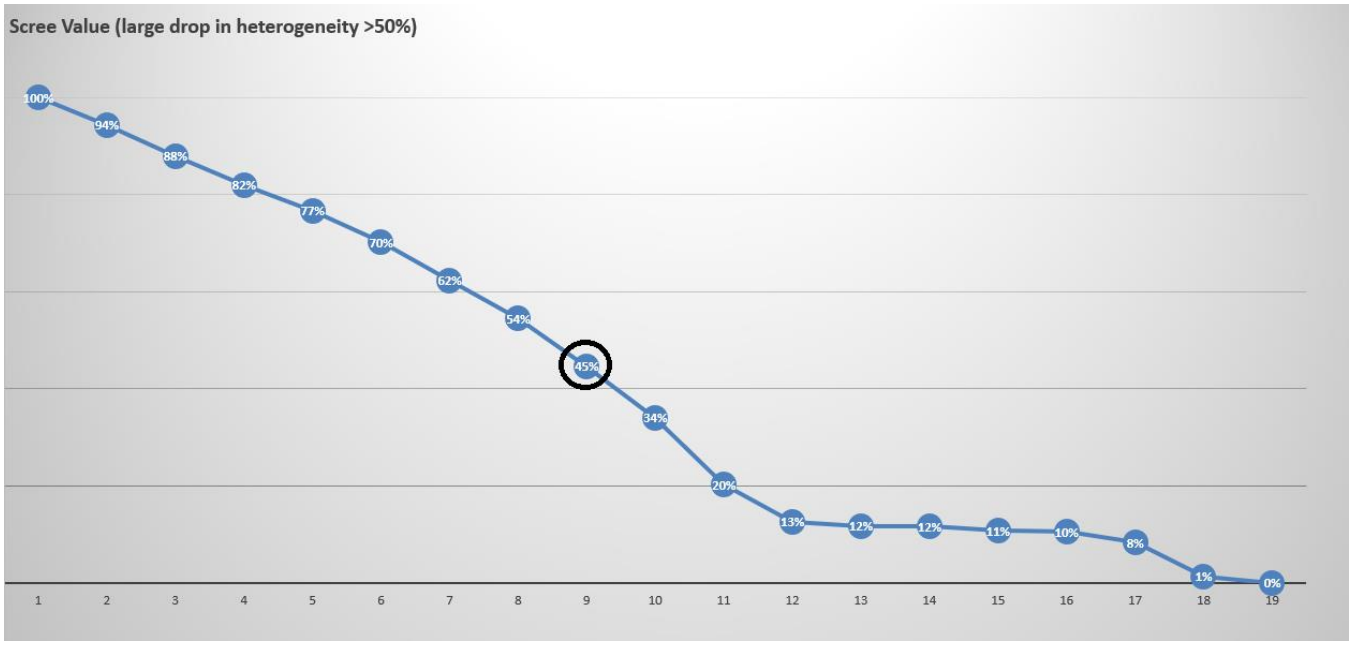
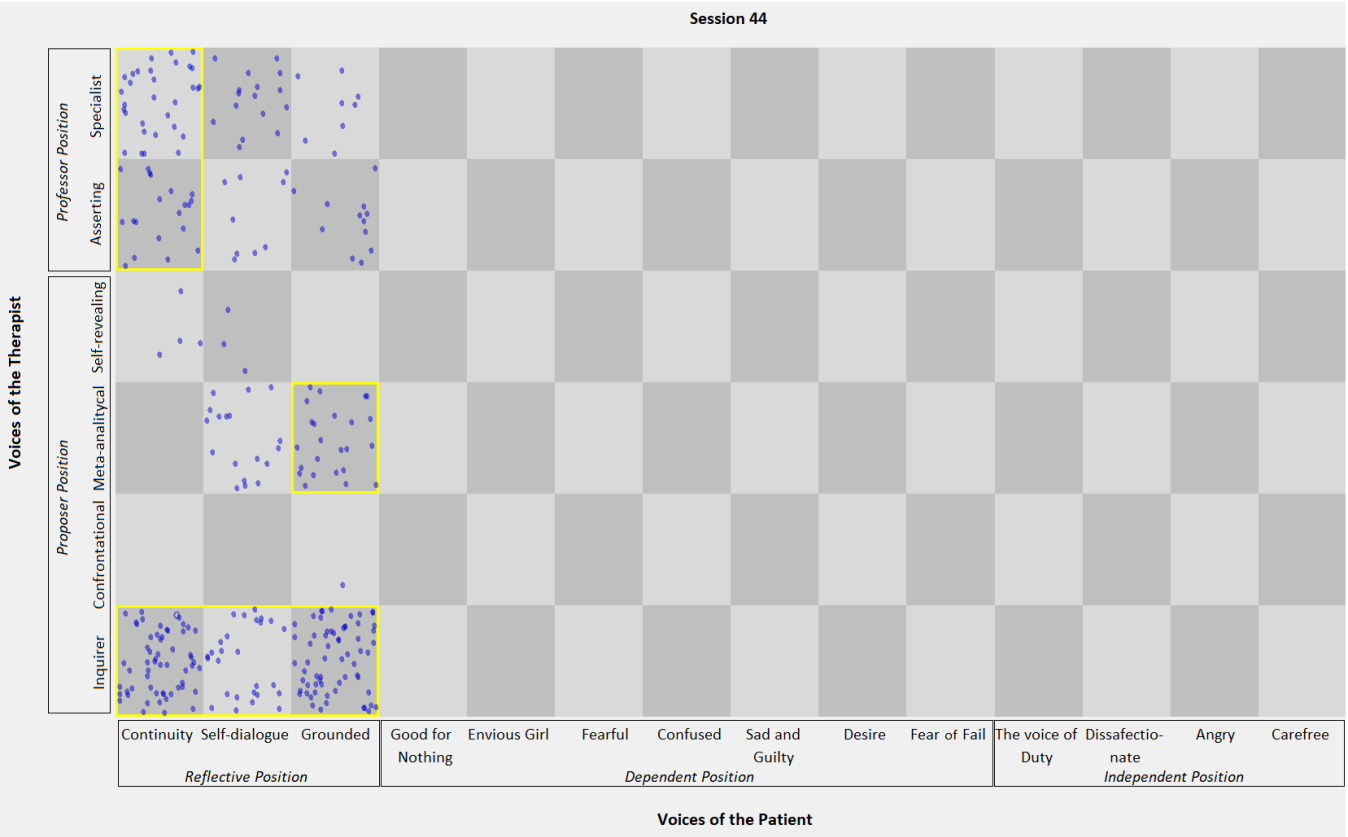


Figure 11: Hypothetical attractors identified in Session 30, are highlighted in yellow squares (up). The circumference marks from which step the component cells of the attractor are included (down).

Dynamic patterns were identified in Session 44 (Figure 12) In this final session, the hypothetical attractor formed by the therapist's inquirer voice and the three reflective voices of the patient (cells 1 / 1, 2, and 3), and by the therapist´s meta-analytical voice and the grounded voice of the patient (cell 3 /3), appears again. Possibly, in this session, a subjective state of the patient is consolidated, established from a conscious and realistic perspective, concerning the different present and prospective responsibilities. The patient indicates a readjustment in her relationship with her husband, considering her new, more independent life, and trying to resolve the difficulties that have appeared between them in recent times, during a process in which she has positioned herself symmetrically around him. She talks about the plans she has for moving home and the more active attitude she hopes to adopt in terms of its organization and maintenance. Regarding her daughter's relationship, she considers that she has gone from feeling that she was not her daughter, "she was not part of

my body... as if I had not had her," to being affectively and functionally committed to her, and to being able to express herself and have important conversations with her. The patient can distinguish between her past and her present life, saying that she has understood what she suffered as a child and that now she can live differently. A conclusion is drawn about what her therapeutic work has been, the benefits it has brought her, continuing the pharmacological treatment, and at the same time, she points out that she already needs to discuss her difficulties with friends who can provide her with complementary perspectives.



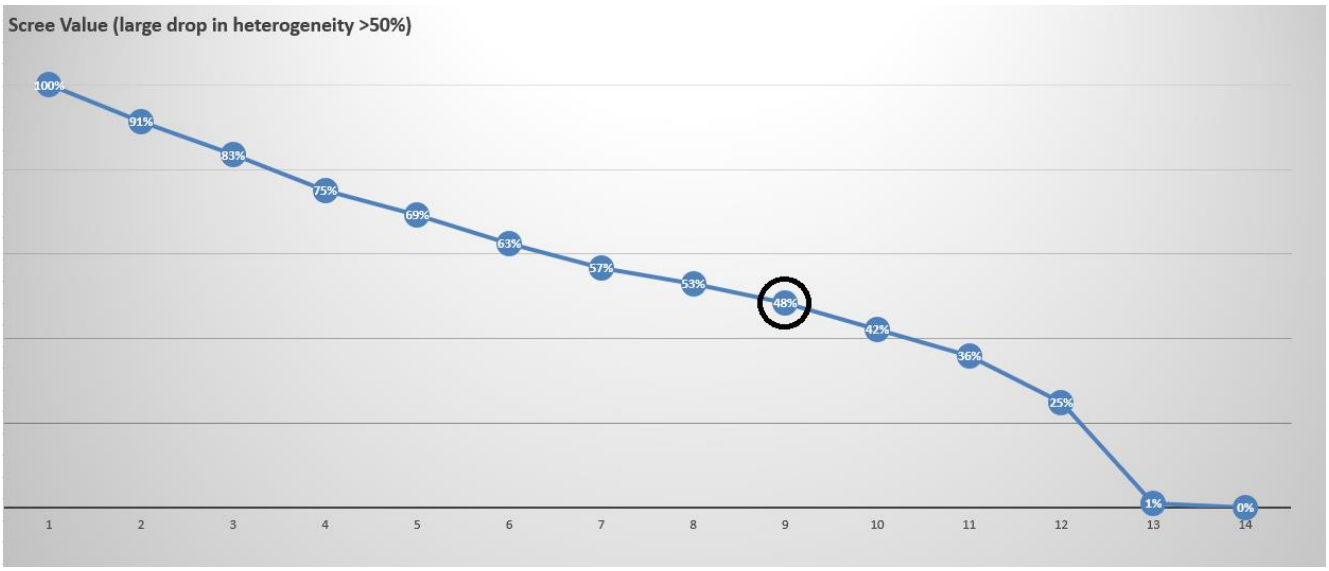


Figure 12: Hypothetical attractors identified in Session 44 (final session), are highlighted in yellow squares (up). The circumference marks from which step the component cells of the attractor are included (down).

Figure 13 shows the level of entropy reached in each session. Entropy peaks were considered relative to the rest of the values, in this case when a session reached 3 points or more. The entropy values in each of the five sessions analyzed are also indicated. The entropy levels for sessions 1 and 6 are H_s = 1.98, and H_s = 2.84, respectively. These values are lower than the peaks, so it could be thought that they account for part of a flexibility process that begins with a set of stable dynamic patterns that may reflect the patient's subjective expression of suffering and confusion. Subsequently, within the first numerical half of the psychotherapy (sessions 1 - 22), five entropy peaks are observed, although the entropy peaks of sessions 21 and 24 (H_s = 3.09 and H_s = 3.12, respectively) are striking. These observed peaks precede sessions 28 (H_s = 2.34), 29 (H_s = 2.35), and session 30 (H_s = 2.54) that include dynamic patterns where a pattern already seems to be consolidated with the inquirer voice of the therapist and the three reflective voices of the patient, as well as the meta-analytical voice

of the therapsit, and the self-dialogue voice of the patient. That is to say, it seems to reflect stability in a form of interaction that is productive for the therapeutic process. Finally, session 44 (H_s = 2.28) shows a pattern that could already be consolidated in the therapeutic dyad, voices of the therapist´s proposer position interacting with the patient's reflective voices. Broadly speaking, a process can be observed in which, after peaks of greater flexibility indicated by higher levels of entropy, and where no clinically significant attractor can be appreciated, several exchanges of voices occur moment by moment, arriving at more delimited and more stable patterns, which integrate subjective states that theoretically, and as long as they are not rigidified, can be associated with psychological wellbeing.

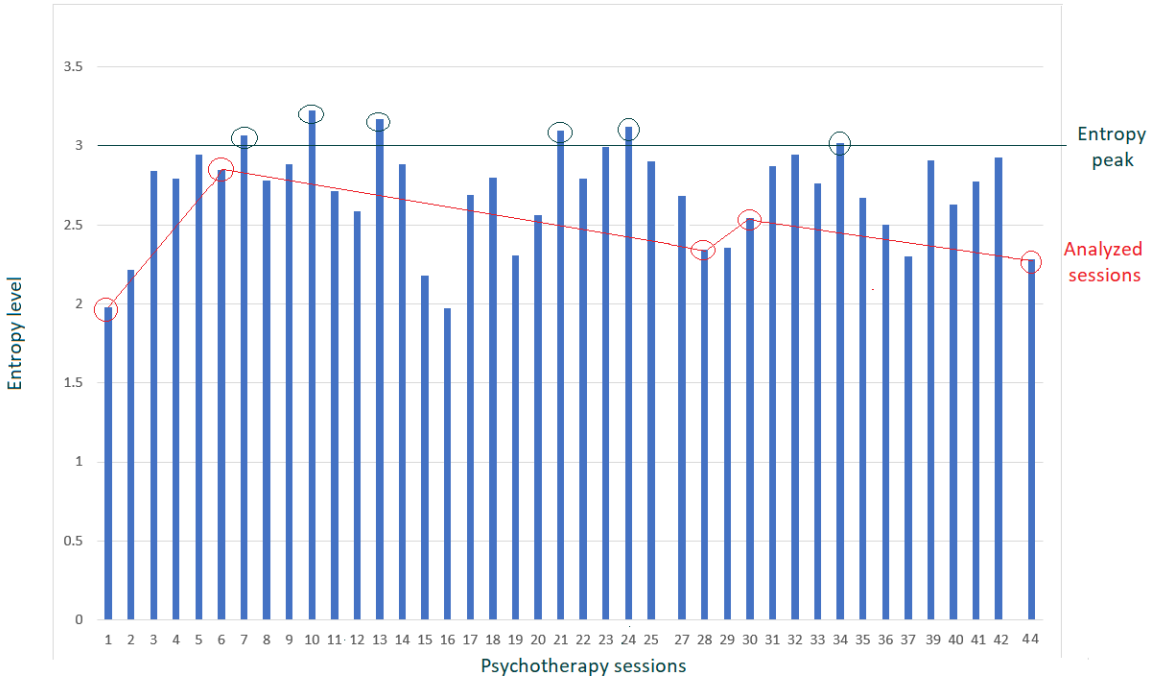


Figure 13: Entropy level in each of the psychotherapy sessions. The entropy peaks (scores over 3 points) reached in the process are indicated, just as the entropy level in the chosen sessions.

Moreover, eight sessions presented hypothetical attractors in which there were dialogical patterns (sessions 16, 28, 29, 30, 37, 39, 41, and 44). Ten sessions showed hypothetical attractors in which there were monological patterns (sessions 6, 10, 11, 12, 13,

14, 21, 27, 31, 42)[11]. Entropy in the whole sessions was H_s = 2.43 for dialogical sessions, and H_s = 2.89 for monological sessions (Hs = 2.71 for the rest of the sessions), F(2, 38) = 6,053, p = .005; Levene Statistic (2, 38) = .604, p = .552; Scheffé Post Hoc Test (p = .005) . Finally, the sessions with dialogical patterns showed a positive asociation[12] (r_s (39) = -.52, p < .001, vs r_s (39) = .89, p = .58 in monological patterns sessions) with the patient's self-perception evolution regarding her symptomatology, social role and interactions with others [OQ-45.2] (*Hypothesis 5*). For this statistical test effect size (ρ) was estimated to be .52, and the statistic power (1 - β) was determined to be .84. Effect size and statistic power were calculated using power analysis (G*POWER 3.1, Buchner et al., 2017) using an alpha of 0.01, sample size of 41, for a two-tailed test.

Discussion

Study 1

The results of study 1 indicate that during the patient's change episodes, specific dynamic patterns of personal positions of both patient and therapist could be identified, depending on the phase of subjective change (levels 1, 2, and 3 in GCI). The patterns changed as the degree of subjective elaboration was higher, starting with patterns that included an interplay between the therapist's "Professor" and "Proposer" positions, until arriving only at the "Proposer" position in the episodes of greater subjective elaboration of the patient (level 3). Specifically, in this last group of change episodes, the voices that formed a dynamic pattern are the therapist's "inquirer" voice, and the three voices that form part of the patient's

[11] The distribution of entropy scores throughout the psychotherapy was normal, so it was decided to use a parametric test for the analyses. While the dialogical, and monological patterns do not present a normal distribution, so a non-parametric test was used to assess their association with patient´s outcomes.

[12] The association is positive because OQ-45-2 scores are higher as patients report worse outcomes. For this correlation analysis the scores were sequentially rearranged by considering them as outcomes of the previous sessions.

reflective position, that is the "continuity," "self-dialogue," and "grounded" voices. During these higher-level change episodes, the therapeutic conversation of the patient and her therapist is being specified toward a pattern that can be described as an interaction between the “Proposer” position of the therapist and the “Reflective” position of the patient. While at levels of changes 1 and 2, other positions emerge, the Proposer-Reflective pattern remains stable throughout therapy, being the only pattern in later phases of change. The consecutive change that this patient had, seems to be established from a dialogue in which the relevant topics presented by the patient are treated as life situations that can be thought of from her own experience, which in turn are integrated reflectively by the patient. In this way, a constructive process of association seems to be stimulated, which allows her to elaborate on new understandings.

These results are consistent with those found in previous studies (Moran et al., 2016; Tomicic et al., 2015), regarding the patient's achievement of a subjective positioning of greater openness to dialogue in change episodes, and the non-predominance of either of the two positions, Professor and Proposer of the therapist, which was considered as organized speech from their therapeutic role independent of the interactional contexts in which they found themselves. However, in the present study, a difference was observed in the more elaborate episodes of change (level 3), in which the “Proposer” position takes prominence, possibly suggesting non-directive specialization of their therapeutic role, possibly coherent with the much more reflective subjective manifestations of the patient. This aspect should be further researched in future studies involving other cases. The above studies have described pattern formation in psychotherapy as one of its features. These patterns seem to follow a

non-linear distribution, as also reported for the formation of self-organized patterns in self-presentation categories of patients and therapists, wherein few patterns occur with high frequency, which decreases following the inverse power law (IPL) distribution (Strunk & Lichtwarck-Aschoff, 2019), that is consistent with the identification of a few hypothetical attractors.

Considering the dynamic patterns of voices in level 3 of the change process, the "continuity", "self-dialogue", and "grounded" voices are the expressions of the Reflective position of the patient, suggesting that the process of the creation and consolidation of new subjective constructs supports a building of an integrative psychological state. The integration of the three reflective voices can be understood as a dialogue of parts of the self that, at some point in the therapeutic process, may have been differentiated, as suggested by an assimilation process (HonosWebb & Stiles, 1998; Stiles, 2011). Therefore, it would be important to evaluate if such a process was taking place between the voices of this patient, as well as if there were warded-off voices, dominant voices, and bridges of meaning between them. The voices interplay could be considered in the notion of "multiplicity in unity" (Hermans, 2008) that points to the result of dialogical relations among different aspects of the self, overcoming fragmentation (from there the process of change experienced by the patient becomes relevant, from their "confused" and "fearful" voices that allude to a diffusion of the experience from their self-definition, and that could be considered one aspect of the BPD diagnosis made in the psychiatric centre where they had treatment) and arriving at the appearance of alternative positions, or new relationships between these aspects of self. In this context, the "inquirer" voice of the therapist could be an offering to new ways of thinking about the content that the

patient presents in therapy and the patient's possibility of associating these different contents from a position in which she establishes herself as the author and result of what she is thinking.

This case study points out that verbal communication established in psychotherapy can trigger an opening to different aspects of the self, which previously could be feared, avoided, or pathologically maintained, or that are part of the unconscious resources of patients. It is the idea of psychotherapy as a context where healthy aspects of the self, help in the modification of more dysfunctional parts and give them a role in a broader and more adaptive setting (Hermans & Dimaggio, 2004). Communication understood in this way, from the perspective of different positions and interacting voices, can help to understand these types of characteristics of change. It is a notion that underlies the content of therapeutic conversation.

Salvatore et al., (2008), in "The discursive dynamic of sensemaking," consider communication as a self-organized system. Although they describe some semantic components of the processes of meaning construction, they avoid external attributions in their interpretation. However, the MAPP (Martínez & Tomicic, 2019) applied here gives an account of subjective positions and voices from where diverse semantic components can be constructed. Both models seem to highlight the idiosyncratic character of the subjective elaboration of content in the therapeutic context. Salvatore et al., (2010) do not refer to the specific speech of patient and therapist under the assumption that the meaning-constructing process is an emerging property of verbal exchange. They emphasize that they are studying the process itself, something like what is achieved with the MAPP by describing personal

positions in the therapeutic relationship during some relevant moments of psychotherapy. In addition, psychotherapy is characterized by nonlinearity and non-ergodicity. Other systemic studies have highlighted the importance of recognizing their idiographic aspects before generating models with aggregated data. For this, individual spectral analyses have been performed in a study on anxiety levels and therapeutic outcomes (Fisher et al., 2011), or network analyses to account for individual variability in the interaction between intersession processes (ISP) and symptom stress of patients (Kaiser & Laireiter, 2018). The results found in this study can be considered as an idiographic step that will allow similarities to be recognized in other cases.

With regard to some therapeutic implications that can be obtained from this research, it is worth highlighting not only the description that has been made of the change in a patient's subjectivity but also some consequences of identifying voices and personal positions during the therapeutic process. It may be significant to recognize the path that a patient thus diagnosed makes toward the consolidation of a Reflective Position ("integrative" in this patient's case), which is related to the Proposer position of her therapist, something that was at the base of the elaborative work in her psychotherapy. In addition, some suggestions can be made regarding what a therapist can do with the information that emerges here. A therapist in their professional training can progress to self-recognize the voices and positions they usually use in psychotherapy, and how they can be organized depending on the patient being treated. The same can occur concerning the voices and positions of their patients, thus recognizing possible moments of change, or enhancing therapeutic conversations from positions that are related to the change of the patient. Self-recognition and partial recognition of personal

positions may be possible to the extent that already there are patterns identified that have been established at relevant moments in psychotherapy (e.g., change episodes and alliance rupture episodes).

Study 2

The chosen sessions (1, 6, 28, 30, and 44) showed the trajectory of change in subjectivity through variations in the dynamic patterns of the patient's and therapist's voices. In the initial sessions (sessions 1 and 6), patterns can be observed that could describe both a collaborative attitude toward therapeutic work, just as an interaction where disorganized aspects of the patient's personality are displayed, possibly characteristic of someone diagnosed with BPD, who has had difficulties in developing her identity (Fonagy & Luyten, 2016; Fonagy et al., 2011; Richetin et al., 2017), and aspects of emotional intensity denoting both sadness and guilt, which at these moments seem to assume a leading space in the patient's experience. Despite the presence of this type of pattern, in these initial sessions, there is another one that comprises self-reflective actions on the part of the patient, which allows her to unfold her problems and try to address them actively. Dimaggio & Stiles (2007) have described problems of confusion in patients experiencing intense and contradictory feelings, leading to disorientation and reflecting incoherent inner worlds, which may be related to a lack of dialogue between different parts of the self. In this study, confusion could be recognized as one of the patient's dependent position and was part of the relevant patterns in the first half of the psychotherapy. The decision to consider it as a voice and not the result of a lack of connection between her different voices was based on the fact that its appearance was always consistent with the traumatic episodes that the patient suffered; thus, it could be recognized as the expression of a well-formed aspect of the self, up to that point. Certainly,

this may have been one of the most important problems that the therapist and patient had to face to move toward differentiation and coexistence of the different aspects of the patient's self.

From a dialogical self perspective, one of the objectives of therapy is to allow the establishment of historical continuity and bridges between the multiple dimensions of subjectivity, sustained by the emergence and involvement of reflective subjective states (Georgaca, 2001, 2003). In this case, it can be understood that the patient might already be engaged in a process of psychological elaboration, and associations of different aspects of her subjectivity manifest in the way the voices of her reflective position are articulated, even when the therapist is asserting (not just proposing) some relevant content in the process, and in the presence of one of the patient's dependent voices, the “envious girl voice,” which usually appears at times when she is positioned complementarily and inferiorly concerning those who are her equals, and to content in which she may feel envious or jealous.

Session 30 presents dynamic patterns with a different configuration from those appearing in the previous sessions, characterized not only by the interaction of the therapist's inquirer voice, with the three reflective voices of the patient, but also a pattern that is formed by the therapist's meta-analytical voice, and above all the patient's self-dialogue voice. This inclusion of the therapist's meta-analytical voice could encourage the integration of not only the content relevant to the patient but also of her three personal positions. It can be assumed that this is a session in which there was a high elaborative potential, and relevant issues were addressed. This session showed a relatively low level of entropy compared to the rest of the

therapy, reflecting that it was a session in which these patterns can be considered more stable than those presented in other sessions. Possibly, this is one of the patterns that could bring the most therapeutic benefit to the patient, and as an inspection of the patterns of the previous sessions suggests, it can be considered as an emergent state in the process, a property of the interaction of the therapist and the patient. From this session onwards, as shown in Figure 7, the patient's outcomes were more positive than the rest of the therapy.

Finally, in the last session, there seems to be a pattern already consolidated, precisely the one comprising the therapist's inquirer voice and the three reflective voices of the patient, which enables the association between different aspects of the self. In addition, a composite pattern of the therapist's meta-analytical voice and the patient's grounded voice has been configured, which possibly included part of the therapeutic work at a future moment, in the projection that the patient made considering the gains she had in the process, and what she might face once she no longer has this psychological support. Both the entropy and the outcomes scores registered in this session were low, indicating comparatively greater stability of the patterns that emerged, and a score that allowed the patient to achieve a statistically and clinically significant change. It is possible that these positive outcomes of the therapy are associated with the quality of the patterns that were formed in the process, and which sustain these changes from the particular subjective structure that was consolidated.

From a DS perspective, the change in state of the voice configurations should be understood as happening before a period of critical instability, or moment of crisis (Schöller et al., 2018), as part of a phase transition, which would require at least a change in a control

parameter (Schiepek et al., 1997). Therefore, to understand the differences between the different hypothetical attractors that occur in the process, one would have to account for the variation of that control parameter or independent variable. For now, one can only describe these state changes as discontinuous jumps that are consolidated as all the constituent elements (i.e., the interaction between voices) are reorganized. It must be remembered that the process of psychotherapy occurs in the form of nonlinear and discontinuous changes, as postulated in complexity theory, and self-organizing systems (Schiepek et al., 2013). Salvatore et al., (2008) consider that psychotherapy does not have a predetermined, or inherent, construction of meaning, and dynamics of meaning emergence can be observed in the form of discrete transitions. Considering these jumps, and the transitions that precede them, it might be interesting to identify candidates for control parameters that could trigger some reconfiguration of the interaction of voices, even more so now that a certain coherence was found between the entropy values in this study and the changes in the patterns. This encourages monitoring of the behavior of the therapeutic system in the stability–instability continuum, suggesting not only the future description of phase transitions but also other properties that can be linked, for example, to the slaving principle, looking for the emergence of synchrony at some stage of psychotherapy, which is at the basis of pattern formation (Schiepek, 2003). In some studies, non-verbal synchrony between patient and therapist has been recognized, generating greater order with time (Ramseyer & Tschacher, 2014; 2016). This type of order emergence can be compared to the emergence of hypothetical attractors, which, while not necessarily involving synchronized behavior or enslaved processes, does require a particular form of stable interaction to be reached over time.

Critical fluctuations in self-organized processes reflect instabilities that increase the likelihood of state transitions, and at these times individuals are more susceptible to interventions and, at the same time, need a supportive emotional context (Tschacher & Haken, 2019a; Schiepek, 2003; Schiepek, Eckert, & Weihrauch, 2003). Possibly, if it were to track sessions that presented these values, it would look for sensitive therapist interventions, fostering signs and, consistent with dialogic self-theory, an openness to the interplay of voices, and their contextualization. Therapists can rely on the flexibility of the process during these "seemingly disordered" moments and connect with patients' sensitivity, and their potential to change, and make interventions that may stimulate a future change of state. Some research has shown that sometimes the patient's symptomatology or experiential aspects may go through a period of destabilization, understood as a worsening before improvement (Hayes & Strauss, 1998; Hayes et al., 2007). Specifically, in patients diagnosed with BPD, symptomatic improvement and greater positive patterns were observed once patients experienced a period of destabilization and adaptive emotional processing (Hayes & Yasinski, 2015). In this study, it was observed that in the higher entropy sessions during the second half of the therapy, the presence of well-defined attractors does not conform. A period of destabilization could not be clearly observed, although interestingly two close entropy peaks occurred (sessions 21, and 24; see Figure 13) before the formation of a first group of dialogical patterns (sessions 28, 29, and 30, see table 5). There is evidence that periods of instability are key moments in the change process of psychotherapy (Gumz et al., 2010). This may motivate to look more precisely for such fluctuations in terms of symptomatic worsening, critical and high complex / flexible moments, etc.

The present analysis emphasizes the interactional aspect of therapeutic conversation, the temporal-spatial arrangement of the encounter of the therapist's and patient's voices as the process progresses. In this context, the creation of meanings is not understood as the production of particular content, but rather is subject to a structure based on the activation of an intersubjective space that delimits the possibility of certain contents and meanings. In the case of the patient, this structure can be seen to vary, for example, between the first analyzed sessions (1 and 6) and session 28, or 30, assuming that the personal positions that are interacting at key moments of those sessions allow (or at the same time, inhibit) the emergence of contents that describe how patients and therapists are understanding what is being discussed in those particular segments. The variation among dynamic patterns can be understood as a transition from one state to another, and it can be discussed whether it is a transition from a rather monologic to a dialogic form, i.e. the move toward a state of openness that can come from a state in which patients are in a relatively passive position concerning what they are dealing with in psychotherapy (Gonçalves & Guilfoyle, 2006). If the patient is speaking from the voices of her dependent position, it can be assumed that she does so in a monologic way because from some aspect of her subjectivity she expects a satisfaction of a need given by someone, or something external, without further involvement of herself. If the therapist remains speaking from an inquirer voice, the patient may remain in a monological position maintaining her feelings of fear, confusion, and guilt while waiting for a solution to be given to her. The therapist's transition from one of his voices to another, either in one or both of his personal positions, could be a way of stimulating openness to aspects that are not sufficiently connected in the patient's subjectivity, in practical terms, talking about what she has not talked about before, and reflecting on what she is talking about, and ultimately

reducing monological interactions, allowing the achievement of dialogical interactions. What might have stimulated the activation of the patient's three reflective voices, and thus a structure that allows for dialogical action? It is not the aim of this study to analyse what happened session by session up to the more stable patterns of the final sessions, but some earlier patterns can be seen to session 28 (consult the dynamic patterns of the remaining sessions in the Appendix) where the asserting voice of the therapist, and sometimes the specialist voice, are present. It would be interesting to observe the role of these voices that are part of the professor's position, and how the patient responds to them, on the way to dialogicality. What is most striking about these sessions is that the asserting voice interacts with the patient's self-dialogue voice, which is one of her ways of establishing reflective links. Perhaps for this patient these moments, which may even be considered more monological on the part of the therapist, were necessary, but in the whole context of her reflective activity, they may have triggered the subsequent dialogic openness that can be observed in the later state of the therapy. Something that needs to be asserted to be discussed afterwards.

Finally, in this study it could also be observed that intersubjective dialogical patterns emerged between the patient and the therapist. These sessions were compared with others that did not present such patterns, and which showed a higher entropy concerning the former, suggesting less consolidation of the patterns. In clinical terms, dialogical dynamics stimulate change processes in patients, while those that adhere rigidly to only a few subjective expressions (i.e., voices) narrow their capacity for meaning production. Recursive interactions are expected to promote in psychotherapy the spontaneous emergence of higher-order patterns that can be observed in causal mechanisms that achieve temporal stability

(Ramseyer et al., 2014). In this case the sessions with dialogical patterns presented greater stability than that monological patterns. However, the placement of the therapeutic dyad in dialogical patterns can be considered to have recursive characteristics as the sessions that presented such patterns showed hypothetical attractors formed of interactions of similarly dynamic and diverse voices (although much more delimited to the voices of the therapist's proposer position and the reflective voices of the patient). It could be considered a transition from the whole variability of voices in the system, to a sub-group of voices where the others have been included in a more integrated fashion. A dynamic stability is established as the therapeutic system specializes in a trajectory that supports psychological change. It can be discussed that the emerging dialogical patterns were the result, and at the same time one of the causal elements, of the subjective changes that the patient achieved.

Discussion of methods and techniques of the study

MAPP is a method based on the analysis of language, and particularly of the verbal exchanges that take place, at least so far, between a therapist and a patient. It can be applied to relevant segments (e.g. change episodes, rupture alliance episodes, etc.), as well as to whole sessions, to stages of psychotherapy (e.g. the first half, the first third, etc.), or the whole psychotherapy, as in this case. Its particularity is that from the voices identified, it can give an account of the personal positions, or subjective states that both patient and therapist present at a certain chosen moment. This relationship between language-based methodology and subjectivity is not obvious, and it is what has led us to consider how the main language-based approaches used in psychotherapy research address subjectivity. Avdi & Georgaca (2009) differentiate between narrative analyses, generally based on constructivist, dialogical, and

socioconstructionist perspectives, and the creation and use of stories for the interpretation of the world and the self; and discursive analyses, mainly based on socioconstructionism, and the co-construction of reality, and experience through interpersonal processes, and socially and culturally available discourses. According to the above comparison, MAPP could be placed in the first group, including notions of the dialogical perspective of the self, and describing voices that manifest part of subjectivity (through personal positions), beyond recognizing whether their formation has been from a process of individual internalization, or the result of social interaction, and culturally available discourses, and active product of specific power relations. MAPP can also be a useful tool in recognising the emergence of reflective meta-positions in psychotherapy (Georgaca, 2001), rather understood as the emergence of a configuration of patterns of reflective voices, whether or not in connection with other therapist-specific voices.

One of the strengths of the MAPP is that it can point to the idiographic understanding of diverse segments of psychotherapy as a collaborative meaning-making process (Avdi & Georgaca, 2007). The present analysis emphasised the interactional character of the therapeutic conversation, the temporal-spatial arrangement of the encounter of the therapist's and patient's voices as the process progressed. In this context, the creation of meanings is visualised not in the production of particular content, but rather is subject to a structure or support from the connection of two subjective states, i.e. the activation of an intersubjective space that delimits the possibility of certain meanings, i.e. certain contents.

MAPP shares with similar methods such as the qualitative method of analyzing multivoicedness (QUAM), the capacity to report relationships between positions (Kay et al., 2020), although the former is focused only on internal positions, of both patient and therapist. Another dialogic method, proposed by Hermans (2003, 2014), called Personal Positions Repertoire (PPR) indicates that the construction of a dialogical space needs positions that fit together and are complementary to each other. PPR has been applied to psychotherapy and consists of the co-creation of a matrix that relates and evaluates (from the patient's point of view) internal (The I in different facets) and external (The Others) positions. Subsequently, dominant positions are selected, which can be worked on in psychotherapy, the emergence of new positions can be observed, the linking of positions through bridges of meaning, and the development of a meta-position. PPR and MAPP can be used in a clinical application as described, allowing the therapist and patients to know the repertoire of their positions and voices from the beginning of therapy, and to work directly with them if desired. This type of method allows not only the tracking of subjective change but a possible clinical tool to be further explored and used.

The fact that the voices, and personal positions can be ordered as sequences of time series through the SSG, the other technique used, allows access to a longitudinal perspective, where complete sequences of a session are explored, rather than interactions evaluated at a cross-sectional and isolated point in time. Then a trajectory can be seen, which passes through discontinuous jumps that can be observed in the different grids associated with the process, and which are coherent with the clinical work that was being carried out at that time. From a DS perspective, individual differences in change trajectories are not associated with sampling

or measurement error, but are part of the manifestation of change (Polman et al., 2011), referring to the heterogeneity of patients' responses to the same type of treatment, highlighting its non-ergodic character[13], and the need to create methodological designs that consider idiographic and nomothetic stages (as presented in the study by Fisher et al., (2011), on anxiety levels and therapeutic outcomes, for example). This is only one stage of this study of change in subjectivity from the dialogical self point of view, with these results future designs can be planned that integrate a larger number of cases and analyse them, either in broad segments, complete sessions, and/or in the whole process. Undoubtedly, there are other variables involved in the emergence of this type of change in psychotherapy, and the important thing is to consider these potential variables, both process and outcome, immersed in a circular relationship, possibly supported by positive feedback mechanisms.

With regard to the notion of personal position, its theoretical meaning seems to be closer to the idea of a subjective state, or I-position (Hermans, 2004) than to a subjective position. However, it shares with the latter being the result of an interactional process and social construction, the not necessarily conscious use of a certain position, and possibly its conjunction with the dialogical perspective of the self understood as a conversation between voiced positions (Avdi, 2012). The personal positions point more to the individual subjective construction that patients make, that is, the particular way in which relations between intra- and inter-positional voices are established, rather than to the socio-cultural rootedness to certain surrounding and hegemonic discourses, even if the subjective constitution has part of

[13] Ergodicity is a term taken from statistical mechanics, and refers to a process tested n times within a set condition behaving similarly to a process tested once across n conditions (Fisher et al., 2011). Molenaar, & Campbell, (2009) argue that ergodicity is an exception rather than the norm, and address the issue of whether a process detected at the group level can be related to such a process at the level of an individual.

the latter. Here, for example, the expert position in the therapist, or of the professor from the MAPP taxonomy is interesting: While, from the point of view of theories that may involve the notion of subjective position, this may be an inevitable position for therapists influenced by the establishment of asymmetrical roles within the Western therapeutic discourse. But, from the point of view of the notion of personal positions, this expert position could rather be a subjective quality that is disposed of in a particular configuration of a therapist who has a history and who actualizes it in front of a certain patient, or a certain type of patients. That is, in this case, a choice of the properties of a role that fulfils a certain objective, but which is intertwined with other voices where the boundary between the role and the subject are not necessarily clear, which can happen for example with the metanalytical voice, if it is considered as the expression of achievement of neurophysiological and cognitive-emotional development. Such language-based techniques could be complemented here with in-depth interviews a posteriori when a therapist can recognize their active voices in a given process.

Limitations and future research

Some limitations of this case study are as follows: (1) As a case study, this research presents results that cannot be generalized. Therefore, future studies could include change episodes (and other types of episodes) within other psychotherapies, refining methods to recognise the trajectory of change without the need to analyse the whole process. To explore their emerging dynamic patterns in the same or similar way as here, observing if other aspects of clinical relevance can be recognized. (2) Regarding the procedure of identification of hypothetical attractors, the chronological duration of each interaction between voices of the personal positions along the episode / sessions could be included, in studies that can delimit

SSG coding to time-quantifiable segments (seconds, minutes, etc.) within the targeted implementation time; thus including other criteria to refine its recognition in a specific state-space region (e.g., return time). (3) About the identification of personal positions, the MAPP seems an adequate instrument to describe clinically understandable subjective states, although it does not integrate other aspects of the self-dialogic theory, such as the development of new voices arising from the influence of the therapist as "Other," the introjection of specific aspects of therapists into a recognizable voice of patients, the operationalization of the bridges of meaning that arise between voices, etc., all of which are missing and need to be included in future research. (4) It was a naturalistic study where, although the dependent variable (OQ-45.2 outcomes) was evaluated systematically over time, it did not have the objective to check for associations with predictor variables or manipulated features of the treatment. It is, therefore, necessary to investigate these types of processes further in naturalistic studies with larger numbers of cases and quasi-experimental research designs when investigating the emergence of patterns in which therapists and patients are embedded, associations among such patterns, the degree to which they can be invoked at critical points in therapy, and their association with positive life adjustments and possible psychological change.

One of the main challenges will be to recognise the segments of psychotherapy to select so as not to underestimate the trajectories of change, as this study had to include all sessions to initially assess which were significant. Undoubtedly, there are other variables involved in the emergence of this type of change in psychotherapy, and it is critical to consider these potential variables, both process and outcome, seeking to recognize, among other things, the processes of internalizing others in the subjectivity of patients, the concrete

contribution of the therapist during the transitions between the identified state changes, i.e. from initial patterns to dialogical patterns. Future research could not only help in understanding the variants of this trajectory, but also the elements that facilitate its realization.

One possible avenue for future research is the further exploration of the identification of specific processes that can explain the emergence of dialogical dynamic patterns with reference to the DS perspective. In order to describe these processes, it should be further clarified whether there are identifiable phase transitions in these types of process variables (i.e. positions, and voices), and what antecedent conditions can be specified in such a case. There is a current review suggesting different procedures for identifying such transitions in psychotherapy, as well as a method that recognises variations in attractor formation (Schiepek et al., 2020; Tschacher & Haken, 2019b), although mostly indicated for quantitative variables, and predictive models based on difference equations, and the Fokker-Planck equation. However, there are also procedures that allow the detection of transitions between patterns formed by symbolic qualitative variables, including the Orbital Decomposition (ORBDE) technique (Peressini & Guastello, 2014). Another aspect to be covered in future research (beyond process variables that can act as control parameters, and that can help to build different mediational models) is the presence of synchrony between diverse elements of the therapeutic system. Synchrony has been described as a relevant process of self-organized systems, arising in phase transitions, and being at the basis of the emergence of collective patterns (Kowalik et al., 1997, Schiepek, 2003), and has shown an important presence in psychotherapy process variables associated with positive outcomes (Ramseyer & Tschacher, 2011; 2016). One of the most studied aspects has been the emergence of synchrony in different aspects of the therapist-patient interaction, but synchrony can also be investigated in

the specific components of dialogical patterns (interaction between voices), and their association with the production of the contents of subjective change (change episodes), among other dimensions of psychological change. In addition, future research could investigate the association between nonverbal synchrony, specific interactions between patient and therapist voices, therapist qualities aimed at producing nondirective interventions, the alliance, and outcomes.

Ethical aspects of the present research

This work was developed using secondary analysis of data from a group of psychotherapies that were already videotaped and available for analysis. Therefore, there is a discussion to be made in ethical terms, considering the wellbeing of the research participants, and the safety of procedures that ensure transparency and accuracy of data processing once the data have been analysed.

The discussion is based on the principles and responsibilities proposed in the Singapore statement on research integrity (Marušić, 2010), and on the requests made by most scientific evidence publication sources today.

On the one hand, this work always adhered to point 2 of the statement: *Adherence to Regulations*. In this case, the conditions signed by both the patient and the therapist in their respective informed consents (see Appendix) were always respected. The objectives of this work at no moment exceeded the objectives of the original study to which the participants consented, and their anonymity and confidentiality were always guaranteed.

On the other hand, with respect to point 5 of the statement: *Research Findings.* The request to share data and findings openly and promptly, and to directly make public the data sets used to carry out the analyses, raises a central point of discussion when it comes to mixed-method designs, especially when the data are obtained from videotaped material, and from transcripts of participants' discourse.

The protection of participants implies that in these cases, any material made public should not contain clues about their identity. For example, the clinical quotations used in some segments of the reports do not contain private data (e.g. names, idiosyncratic characteristics, geographic data, etc.) that would allow them to be recognised. So what is the limit to making analysed material public? In this case, we have chosen to make available to potential reviewers the already coded data (numbers and codes of the voices, organised in files that can be processed by the Grid Ware software), but not the transcripts, and certainly not the video recordings.

Part of the research ethic is to make transparent the process that led to the collection of the data. In this case, in the qualitative analyses, the procedures for the application of the Generic Change Model and MAPP have been detailed, including the process of analysis, data triangulation, and validation by the expert judge. Still, some researchers (not necessarily the author of this work) may wonder whether the primary material to be shared is indeed the videotaped sessions (as could also be the clinical interviews, or in-depth interviews), or transcribed. In the future, perhaps, there will be software / applications that dynamically masks the faces and bodies of the protagonists (since the face and body of the participants can

be interpreted as part of the private life, if they do not want to share them), and artificial intelligences that replace in real time sensitive data by other general data, although coherent with the discourses enunciated. In that case, there would be another discussion regarding privacy, as the fidelity of the data could be better achieved.

For now, the challenge is to make this type of procedure as transparent as possible, without betraying the commitments made to the research participants.

Conclusions

Throughout the psychotherapy, the following personal positions were manifested in the patient and the therapist. According to the MAPP taxonomy, in the patient, the Reflective position was expressed as an integrative position and was manifested by the following voices: 1.1) Continuity voice; 1.2) Self-dialogue voice, and 1.3) Grounded voice. The Dependent position was expressed as an incapable position, and was manifested by the following voices: 2.1) Good for nothing voice; 2.2) Envious girl voice; 2.3) Fearful voice; 2.4) Confused voice; 2.5) Sad and guilty voice; 2.6) Desire voice, and 2.7) Fear of failing voice. The Independent position was expressed as a detached position, and was manifested by the following voices: 3.1) The voice of duty; 3.2) Disaffectionate voice; 3.3) Angry voice, and 3.4) Carefree voice. While in the therapist, the Proposer position was expressed with non-directive characteristics,

and was manifested by the following voices: 1.1) Inquirer voice; 1.2) Confrontational voice; 1.3) Metaanalytical voice, and 1.4) Self-revealing voice, and the Professor position was expressed as an expert position, manifested by the voices 2.1) Asserting voice, and 2.2) Specialist's voice.

The results of study 1 have allowed us to notice a process of specialisation of dynamic patterns of personal positions as the patient progresses in the achievement of increasingly elaborated episodes of change, that is, in the transition from level 1 to level 3 episodes. This last group of change episodes presented dynamic patterns that can be understood, from the perspective of the dialogical self theory, as having dialogical characteristics (Avdi & Georgaca, 2009; Gonçalves & Ribeiro, 2012; Hermans, 2003; Montesano, Oliveira, & Gonçalves, 2017) since these are formed by voices belonging to the proposer position of the therapist, and the reflective position of the patient. To reach the latter state, it was necessary to go through the other two levels of the change episodes, in which the patterns of personal positions also showed monological aspects, manifested in the therapist's professor position, and dependent on the patient. That is, the patient's process of change was possibly going through different stages to arrive at precisely what the higher level episodes of change reflect, namely, facilitating the construction and consolidation of new understandings, the ultimate step for the construction of subjective theories (Krause et al., 2006; 2007) that allowed the patient to elaborate the most problematic and traumatic aspects of her experience, in order to be able to continue her present and future life with better projections. At the same time, the observation of the different patterns in the episodes of change allowed us to think about the global process of the patient's subjective change, in the possible integration of her different voices beyond their delimitation in the episodes, that is, describing the appearance and

possible consolidation of the interaction between the three reflective voices of the patient, and the voices of the therapist's proposer position in the whole of the therapy. While it was not necessarily expected that what happened in the change episodes would be repeated at the level of the overall process of therapy, which would be an aspect of a process of self-similarity[14] or scale-invariance, understanding that the whole pattern is repeated at the level of the parts (Marks-Tarlow, 2011), it was expected to track a more complex and non-linear process in which the emergence of significant patterns could make understandable the achievement of the patient's positive outcomes.

What resulted from study 2 was the description of the evolution of patterns, specifically, of voices belonging to different personal positions of the patient and the therapist, throughout the psychotherapy. This process is understood as evolution since the selected sessions of the first half of the therapy show patterns formed by voices from the proposer and professor positions of the therapist, and above all the patient's continuity voice, which accounts for her cooperation with the therapy, in what could be considered part of the working alliance, in addition to dependent voices, although there are also reflective voices in some sessions. And later on, the patterns will no longer show dependent voices, or independent voices, both rather monological, as active constituent elements. In a way, these patterns found in the first half of therapy could be considered similar to those seen in the level 1 change episodes, although this time across sessions. For this patient, the dependent voices could be considered a way of asking to be helped and acknowledged, while the reflective

[14] A structure made up of self-similar components shows similar characteristics in their different embedding levels, sustained by recursive sequences (Martins, Martins & Fitch, 2016) unfolding over time. These are processes that manifest at one level, identical characteristics that are present at another level that includes the previous one, and so on.

voices, although not protagonist, give an account of her personal resources, which the therapist was possibly able to recognise and facilitate through voices of his proposer position. In this initial period, the independent voices were also active, which up to that moment, together with the dependent voices, may have been part of their protective mechanisms in the face of the anguish, fear and confusion resulting from their experiences. The evolution from this type of patterns can then be understood as a path towards a configuration where the voices of the therapist's proposer position and the patient's reflective voices are much more active, which could also be reflected in the evolution of her therapeutic outcomes assessed by the OQ45-2.

Later, in the sessions of the second half of the therapy, the consolidation of patterns can be seen, in which the voices of the therapist's proposer and professor positions are active, particularly the inquirer voice, and the patient's three reflective voices, and in addition, in what can be considered a strongly dialogical pattern, the therapist's meta-analytical voice, and the patient's three reflective voices. In the final session this pattern can be seen again, although this time the therapist's meta-analytical voice interacts with the patient's grounded voice, which could be interpreted as a realistic projection by the patient of what is to come once her therapeutic support ends. The patient's level 2 and 3 change episodes showed this presence of the proposer and professor positions of the therapist, although in the more elaborative episodes only the therapist's inquirer voice was active with the patient's three reflective voices. If both results are considered together, it could be argued that the therapist's meta-analytical voice was surrounding the segments in which the higher level episodes emerged, possibly stimulating the interaction of the patient's three reflective voices, to later

decant into a reflective configuration, underpinned by realistic aspects on the part of the patient.

The following is an example of how these dialogical patterns are manifested in the final session (session 44):

361. T: Because, because clearly the subject of the couple has been a whole topic for you... during the therapy I realized that... one time you once you said it, huh? That the relationship with him since it began was installed in that place as the little girl...

362. P: Yes...

363. T: Oh? And him behaving like the adult, the dad at times, let's say... so it's like they were never a couple maybe...

364. P: Yes...

365. T: both the same, not like this big difference... and it's a little bit of that you have been asking him...

366. P: Now and yes... now I feel like that we are a couple, the two of us... and the my children, my children, I used to... ehh.... like in that period, that I was like a little girl, that I say it was more childish... as if he did everything himself... because he let me I let him do and undo everything... to do everything... now I realize that I'm, I realize that I'm not that I am adult... with [his daughter] before I used to get envious… I used to get envious with her too...

367. T: Yes, I remember...

368. P: She was, like we were both sisters... a feeling like sisters... a feeling like that we were sisters... and, that the [her husband] would suddenly do things... and I would and I said hey, if I'm your wife... the same way... I was like a little girl... and I fought with her like she was envious, but not now, now she's my daughter, I'm her mother... and I have to act like a mother

The dialogical patterns described in this therapy are a finding consistent not only with the dialogical self theory, but also with empirical research based on the search for attractors in discursive aspects of the self (e.g. Couto et al., 2016; Ribeiro et al., 2011), which has shown the emergence of patterns in self-narratives that act as connections between the different parts of the self. In the case analysed, the integration between the different parts of the self, i.e. the different independent, dependent, and reflective voices happens from the reflective position of the patient who elaborates them and places them in a present and future context.

Finally, special mention should be made of this interaction between the meta-analytical voice of the therapist and the self-dialogue voice of the patient, as it seems to have been relevant in this process. Now then, without wishing to make a overlapping between terms from different psychological traditions, since they are in fact different constructs, these voices suggest the development of aspects that have been described as forming part of the mentalizing capacity of patients (and also of the therapist in this case) and of the core role of the reflective function (RF) in psychotherapy. The meta-analytical voice under this perspective operates in a mentalising way, generating different associations that are proposed to the patient about her own and others' mental states, and the patient, at the moment she integrates her different voices, also often performs mentalising operations. In the therapy experienced by this patient, the activation of these voices allowed her to elaborate her

childhood traumas related to parental neglect and sexual abuse by others, showing from the beginning the appearance of this reflective voice, although not initially integrated, as a basal resource that allowed her to progress in her therapy. This resource could be considered similar to a good level of the RF that some patients diagnosed with BPD present and that allow them a protective capacity against psychopathology, mentalizing about the behaviour of their primary caregivers, and allowing for higher levels of personality organization (Fischer-Kern et al., 2010). This resource was possibly enhanced by psychotherapy as evidenced by the improvement of the RF achieved by patients when working on polarized affective states and on "split" representations of oneself and others (Fischer-Kern et al., 2015). The patient was thus able to hypothesize possible intentional mental states of her parents associated with their poor caregiving and neglect, their alcoholic behaviour, and even the quality of her experiences as a child, transforming over time her initial emotions and psychological states of grief, guilt, and confusion. She managed to reconfigure herself by revisiting her past life and subsequently generating realistic possibilities in her own role as a wife and mother. The manifestation of her reconfiguration, or reorganization of subjectivity in dialogical terms (Martínez & Tomicic, 2019), was observed in her ability to achieve such dialogical patterns with the therapist as interlocutor. It is not a minor issue that these patterns have been configured in the presence of the therapist, since patients who have a higher level of RF establish the therapeutic alliance more easily than those who present lower levels, possibly being a moderator of the alliance towards therapeutic results (Taubner et al., 2011), and it is possible that later this productive circle can be transposed to other situations in their daily lives where their interaction with significant others fosters such a reflective process.

In psychotherapy, the use of what has been called dialogical voices can be enhanced, based on the fact that there are aspects of the reflective function that can be considered in terms of their interaction. Therapeutic work with voices is where therapists can intervene. If the MAPP is considered to do this, it can begin with the understanding that the MAPP taxonomy allows for the recognition of two positions that promote dialogical space between therapists and patients, namely, the proposer position of the therapist, and the reflective position of the patient. These are positions that have been found in other patients, and in different models of psychotherapy (Tomicic et al., 2015). Therapists can recognize these types of voices and positions in themselves and in patients by being sensitive to their emergence at different stages (e.g., problem formulation, initial approach, emergence of new problems and solutions, etc.), and by actively encouraging their recognition and use in a context in which other expressions of subjectivity are also allowed and elaborated.

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Appendix

i) Dynamic patterns of patient's and therapist´s voices in psychotherapy sessions (not included sessions in the study 2)

The SSG allows the identification of hypothetical attractors in different exchanges in a therapeutic conversation, in this case, dynamic patterns of voices that account for recurrent interactions between patient and therapist. Hypothetical attractors session by session have been marked in a yellow square.

The following numerical coding is applied to each of the voices belonging to the personal positions of the patient and therapist.

Therapist

Proposer= (Inquirer = 1, Confrontational = 2, Metaanalitycal = 3, Self-revealing = 4)

Professor= (Asserting = 5, Specialist = 6)

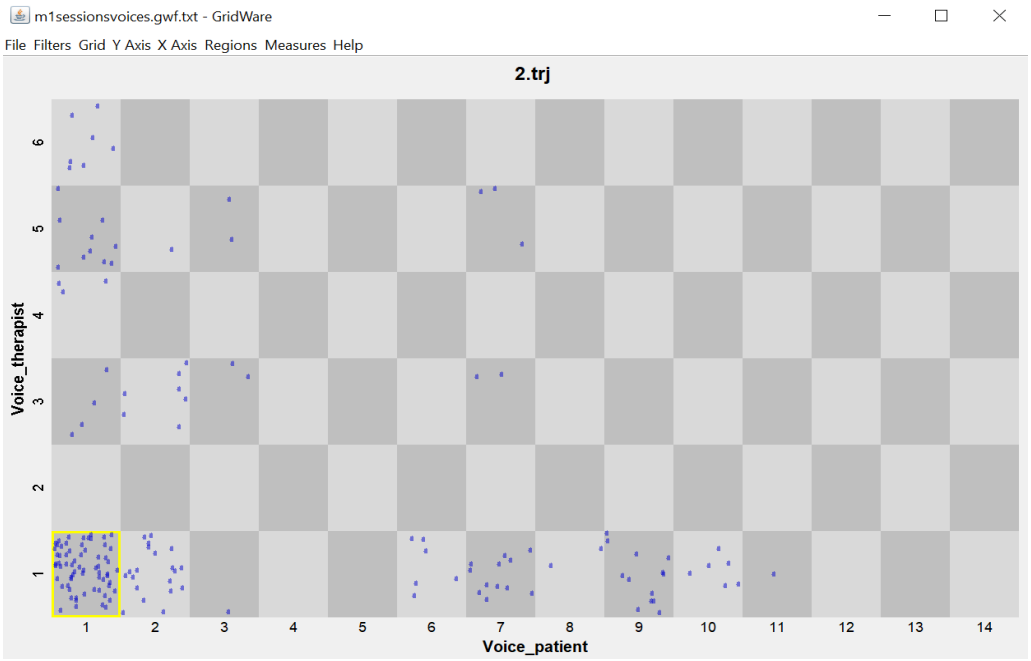
Patient

Reflective = (Continuity = 1, Self dialog = 2, Grounded = 3)

Dependent = (Good for nothing = 4, Envious girl = 5, Fearful = 6, Confused = 7, Sad and guilty = 8, Desire = 13, Fear of failing = 14)

Independent= (The voice of duty = 9, Disaffectionate = 10, Angry = 11, Carefree = 12)

Session 2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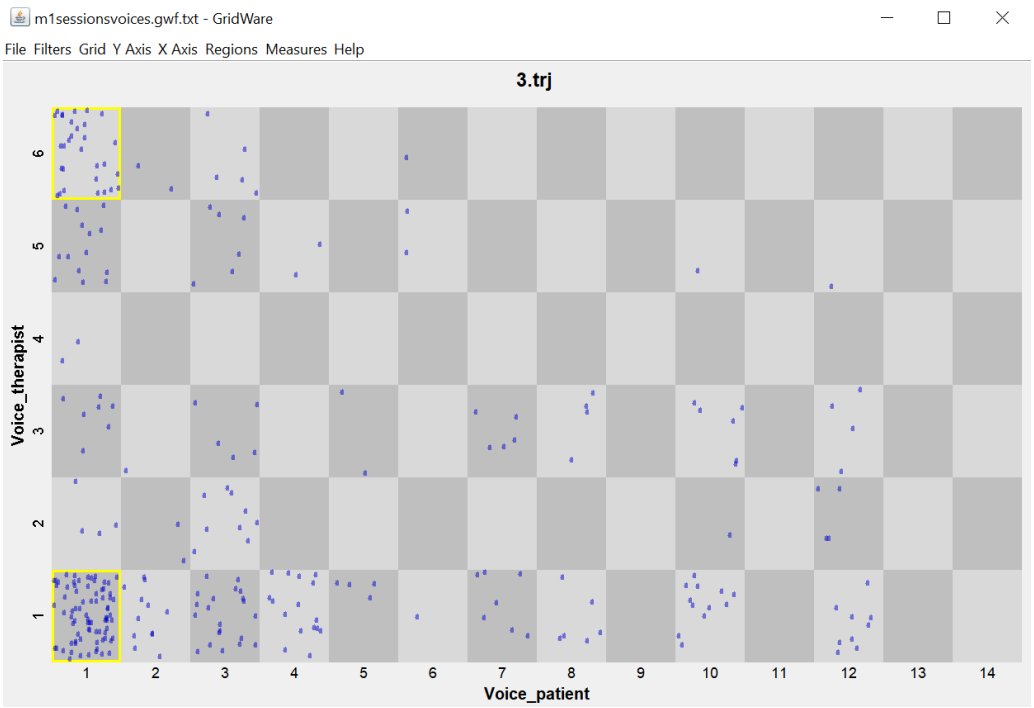
Session 3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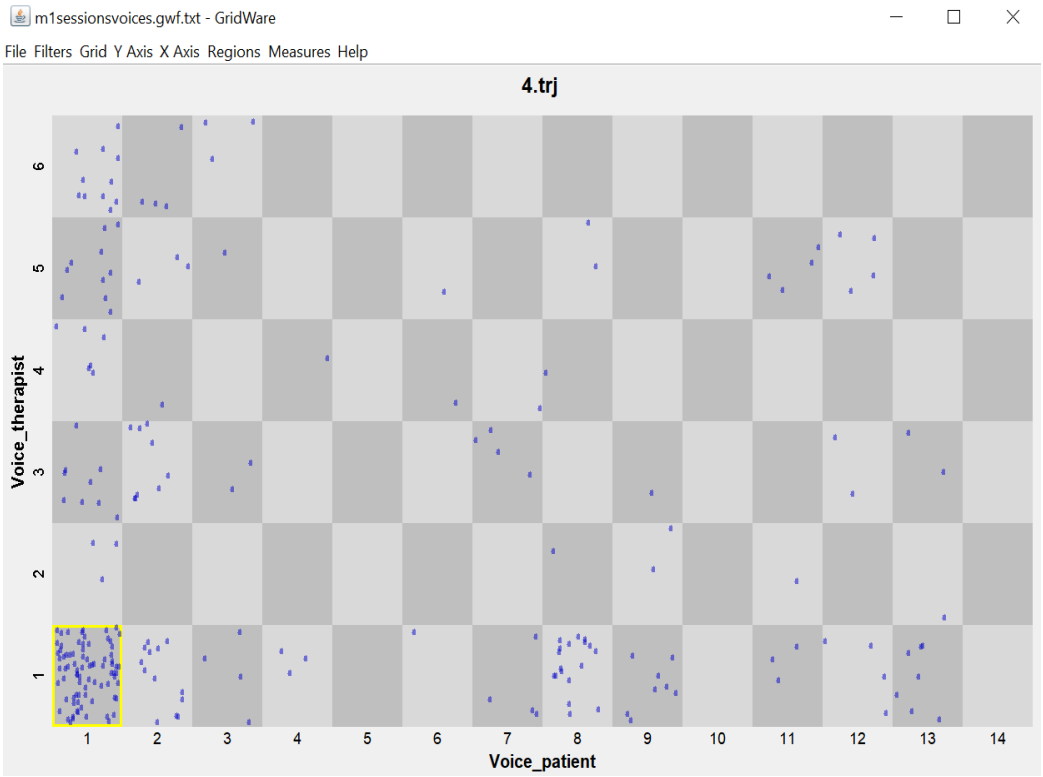
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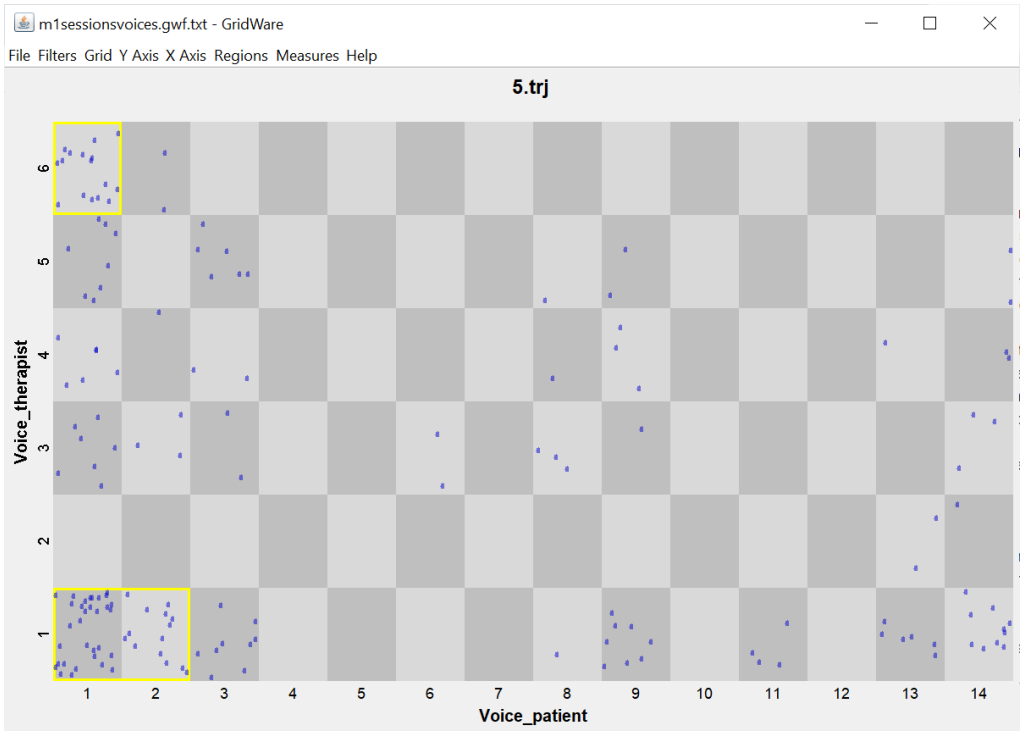
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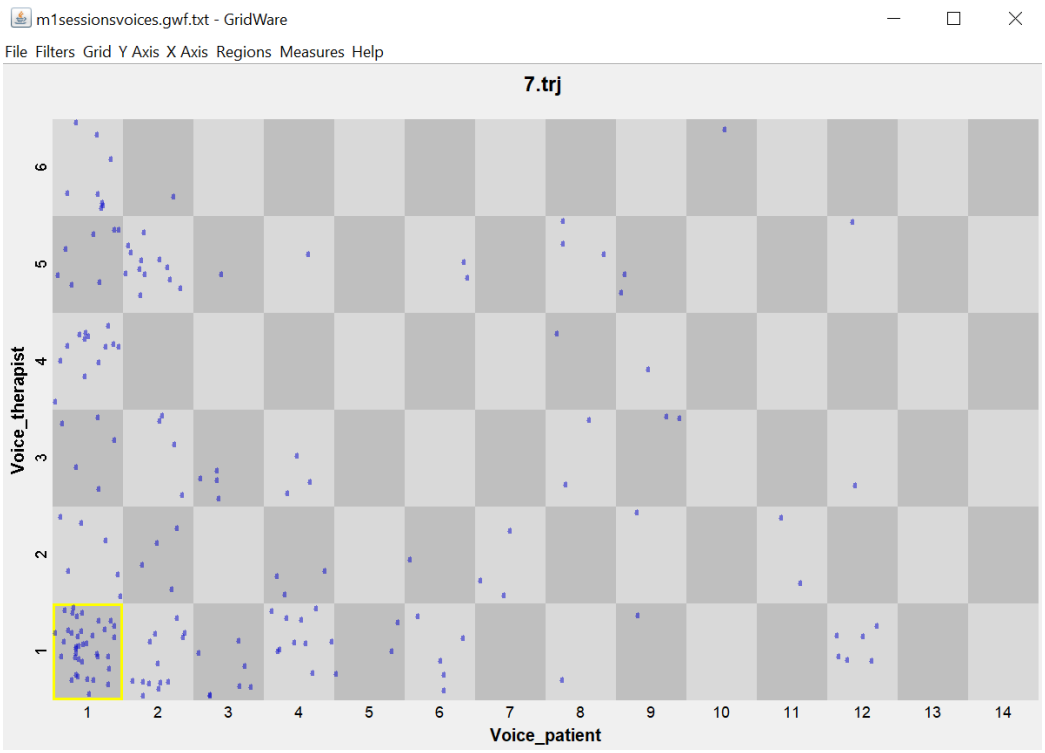
Session 7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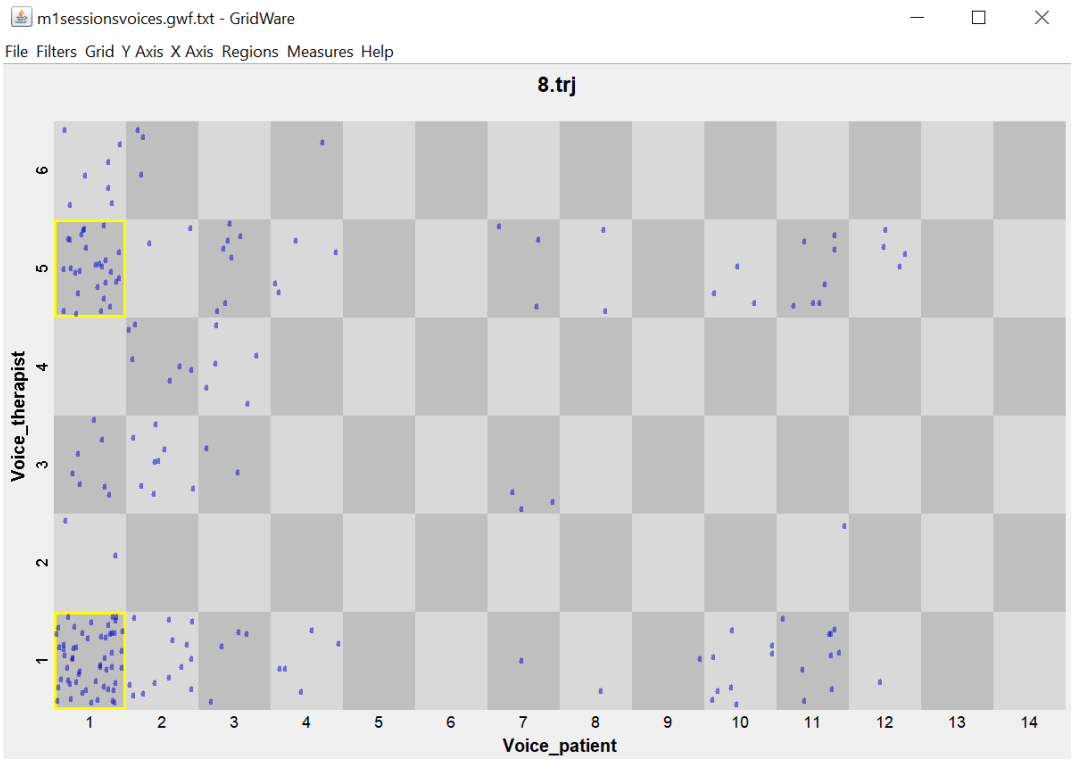
Session 8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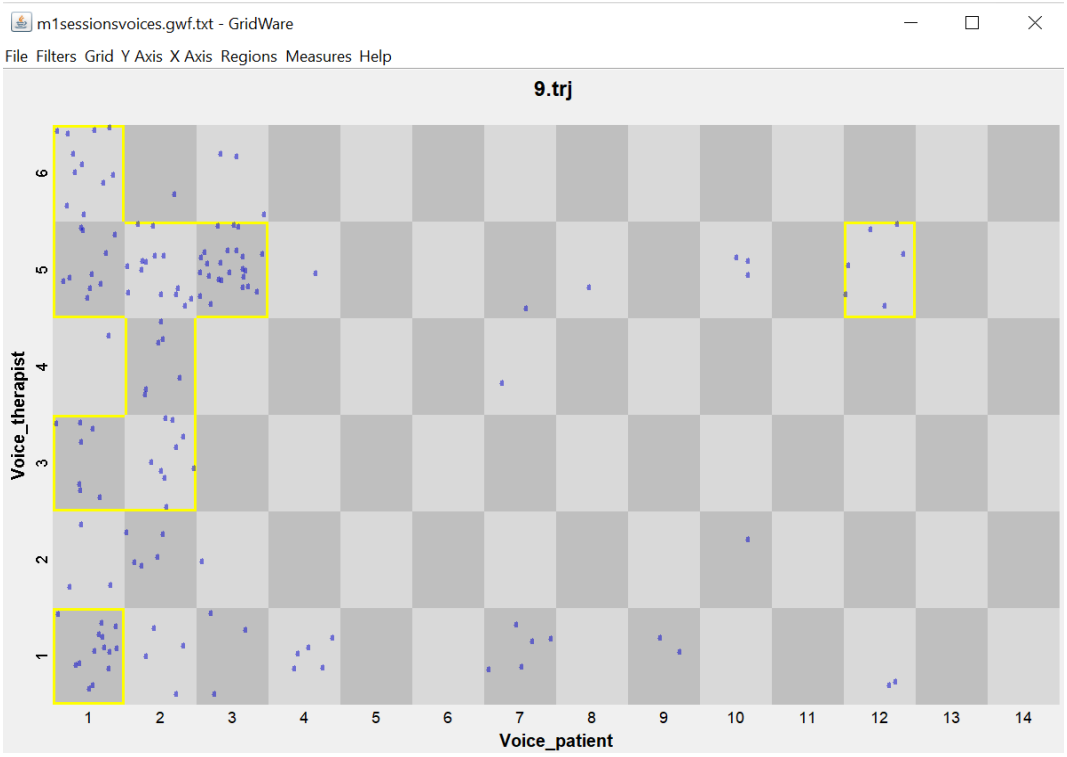
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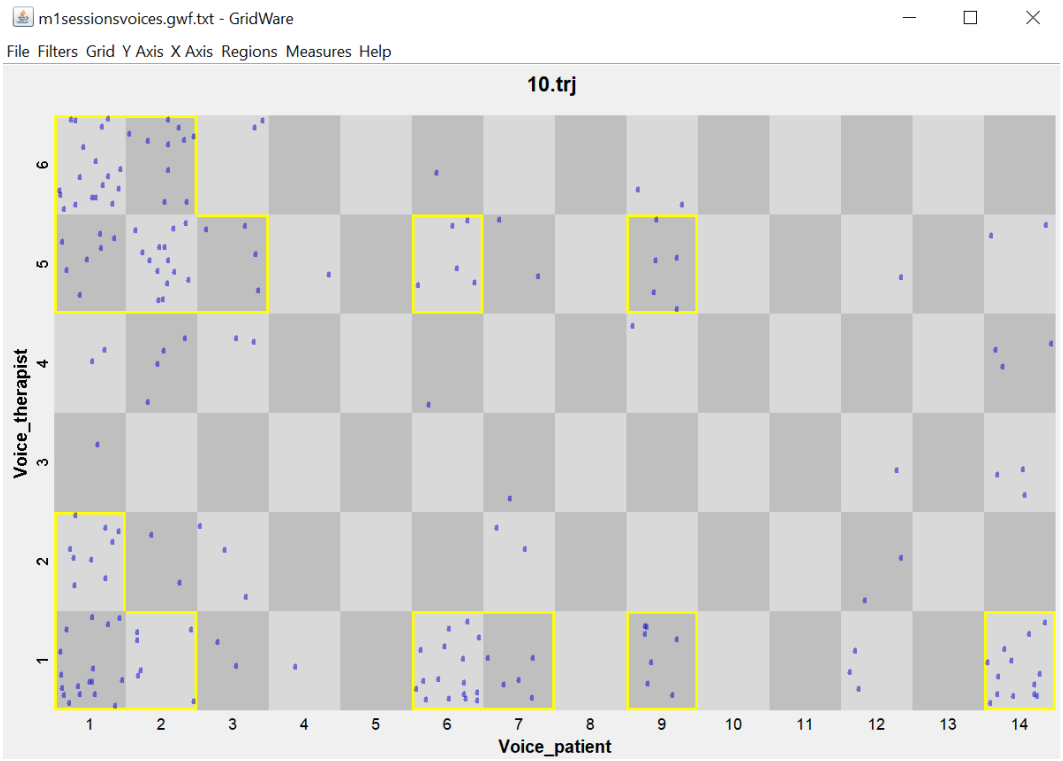
Session 10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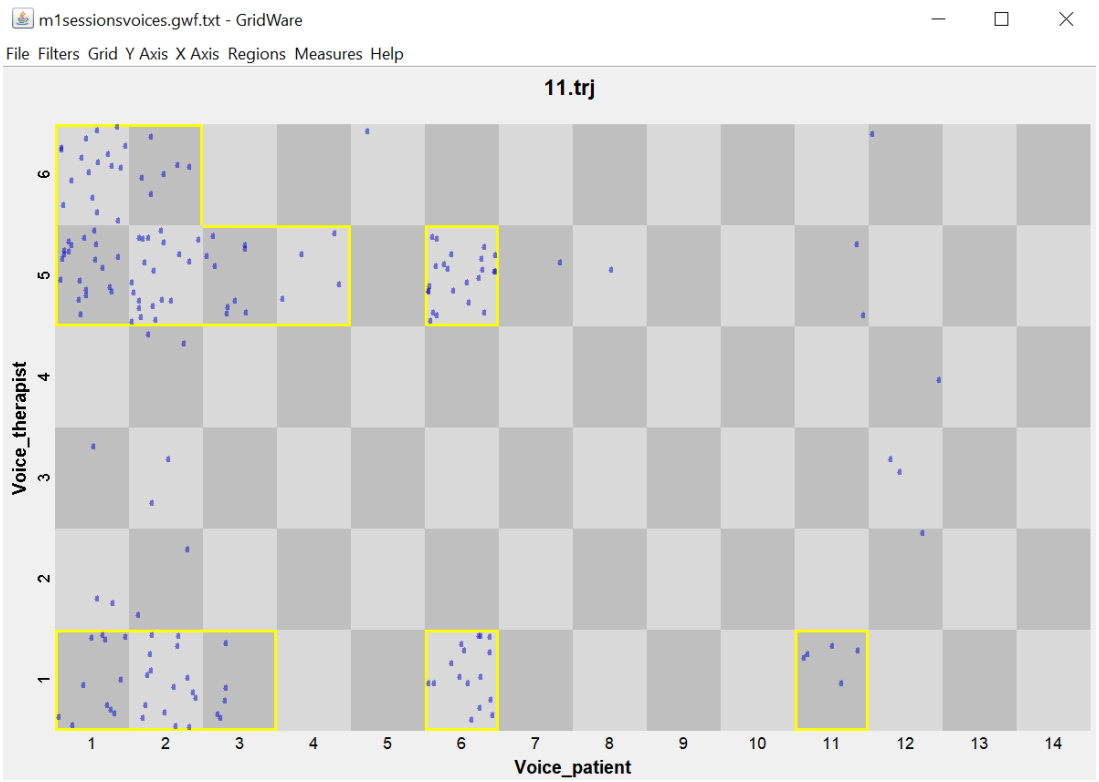
Session 11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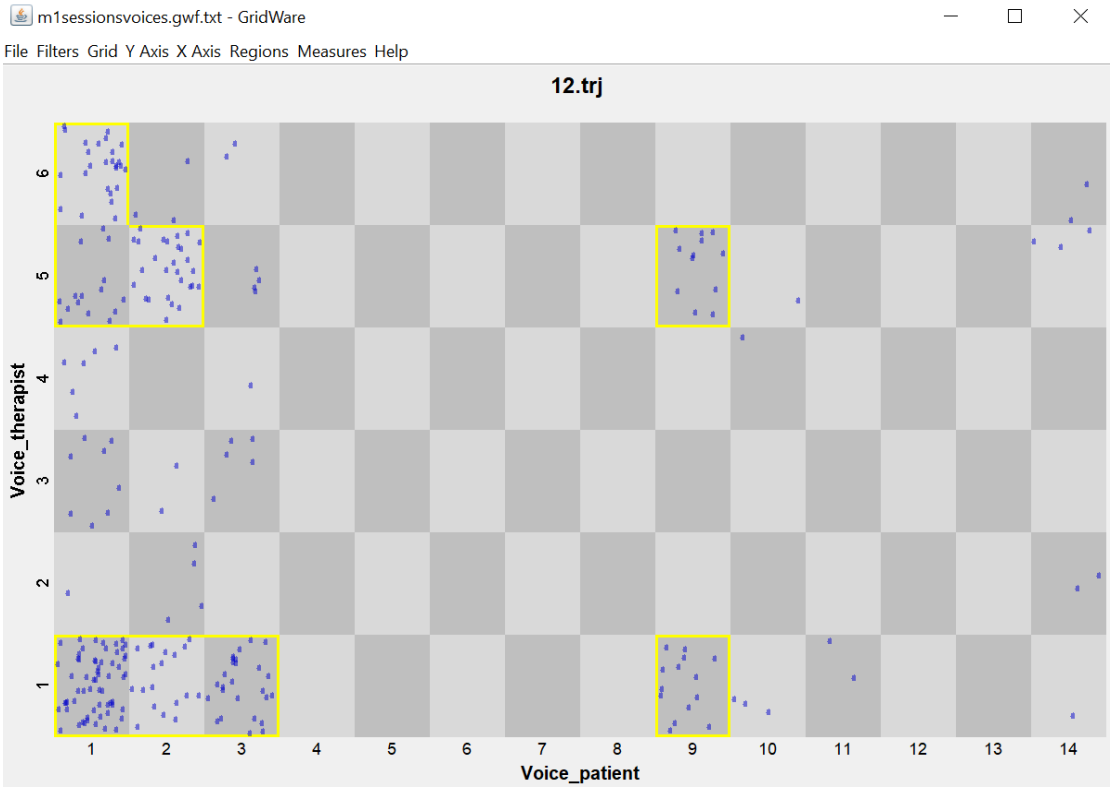
Session 12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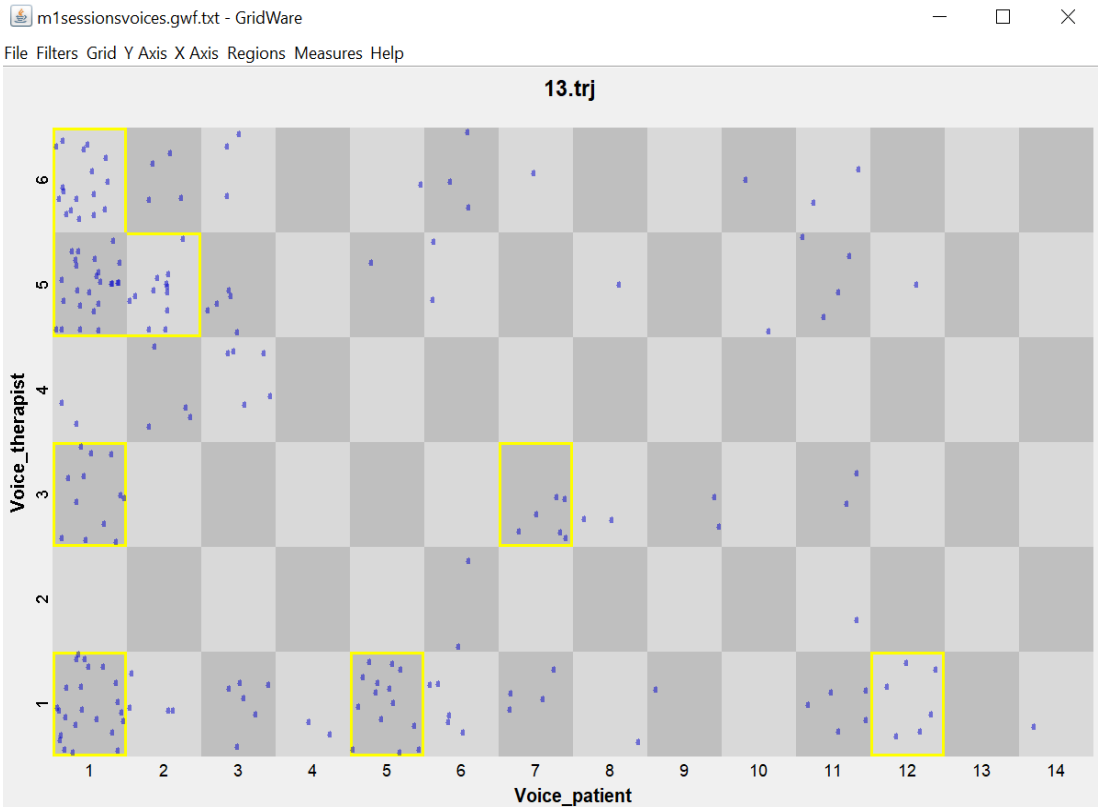
Session 13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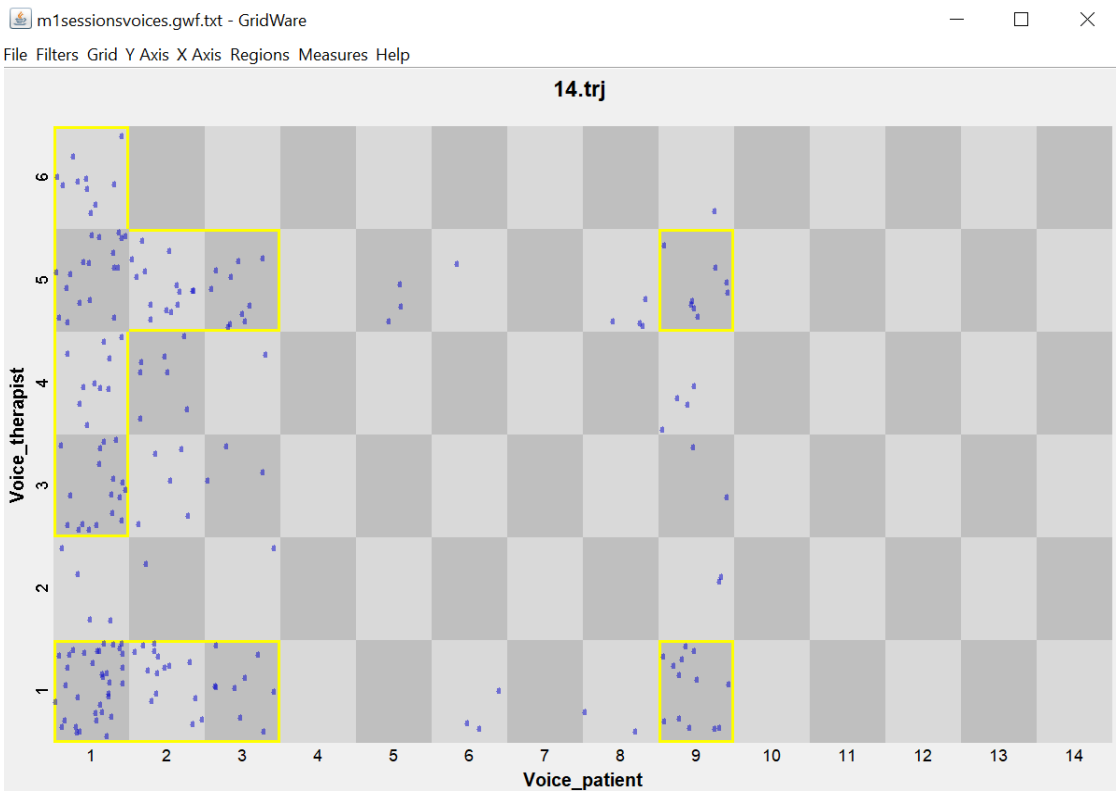
Session 14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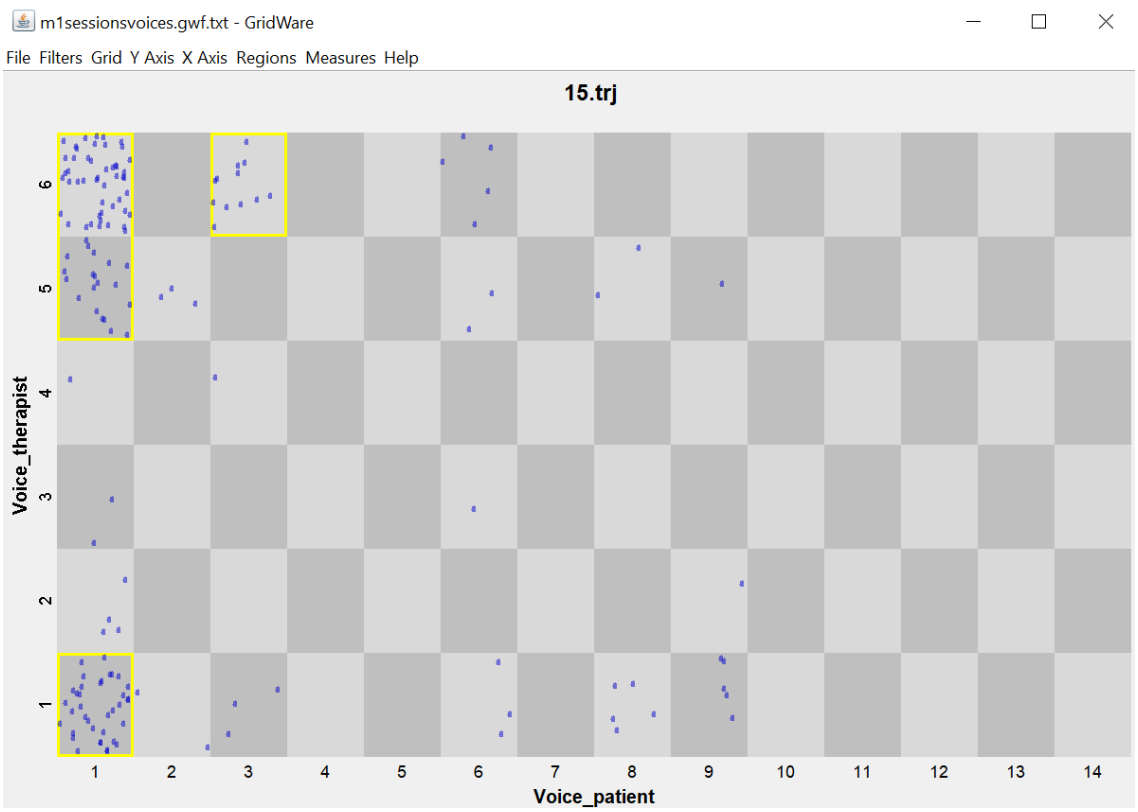
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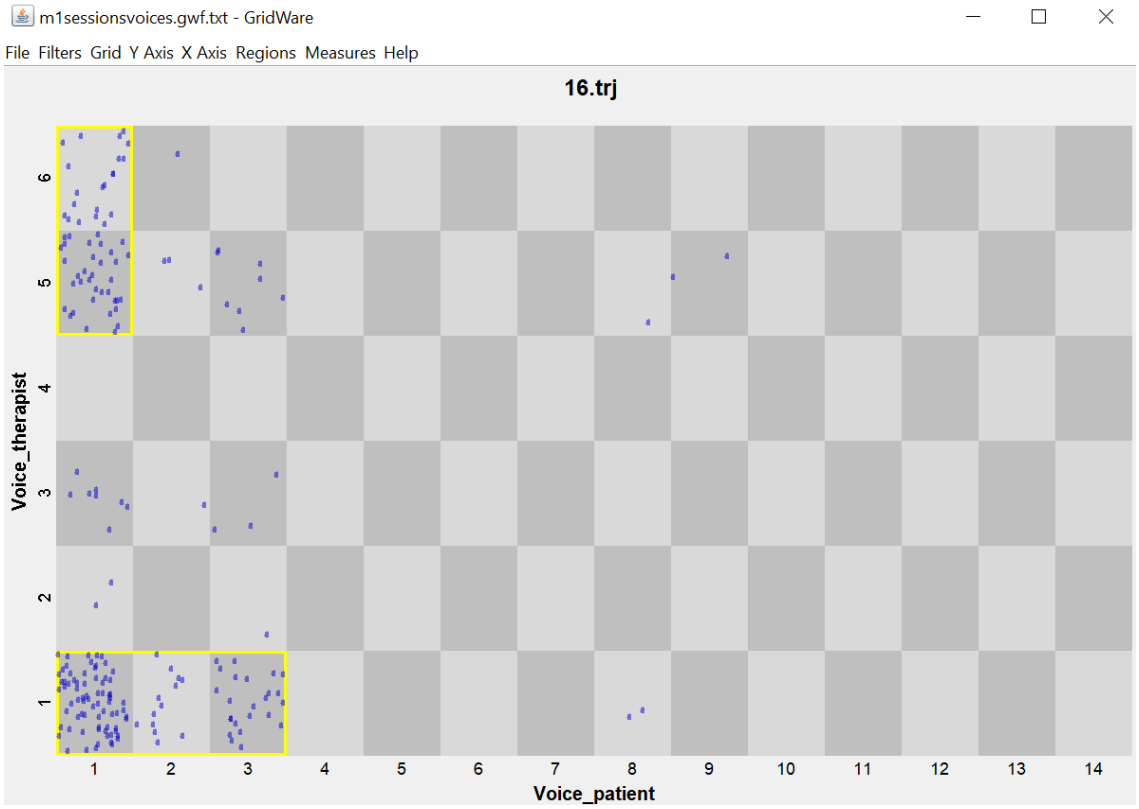
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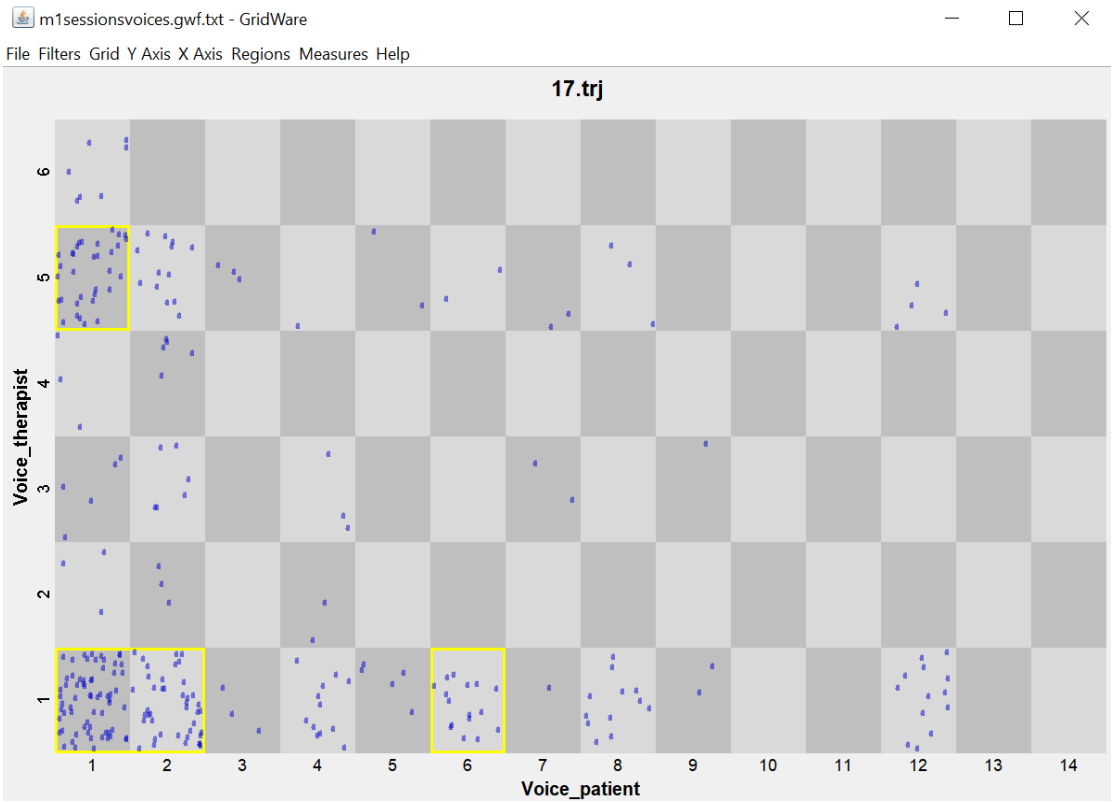
Session 17


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
17.trj
Voice_therapist
Voice_patient
1
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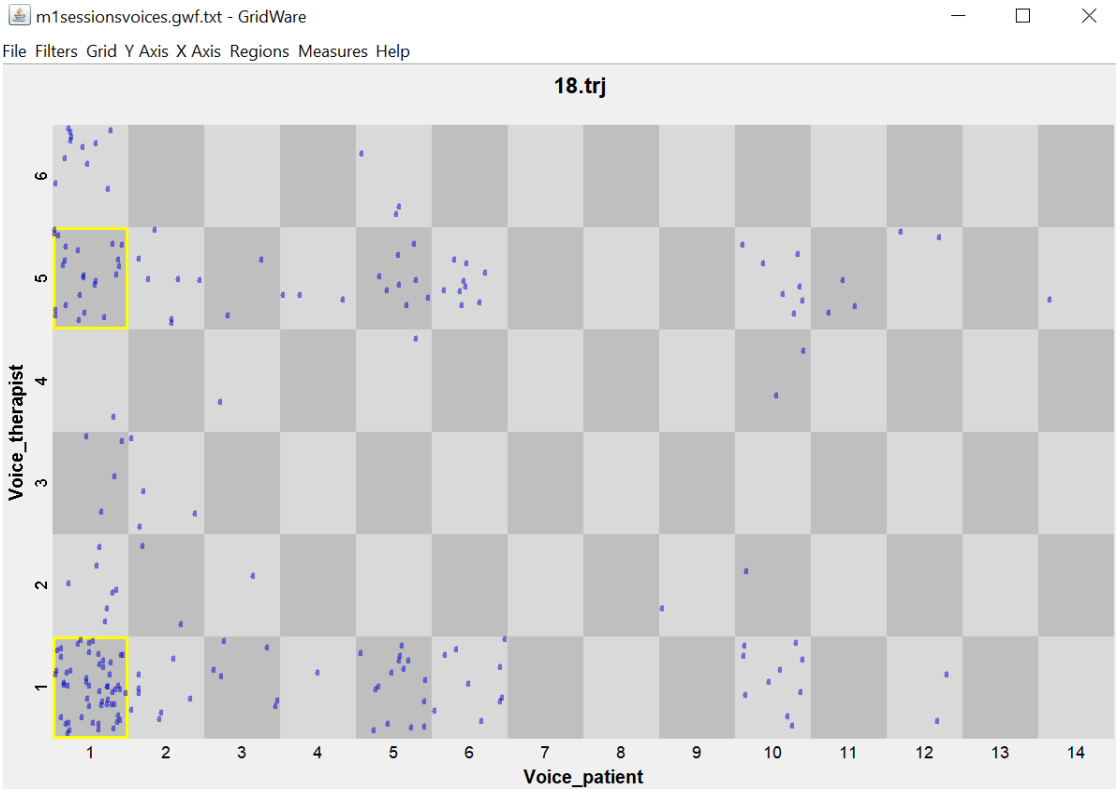
Session 18


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
18.trj
Voice_therapist
Voice_patient
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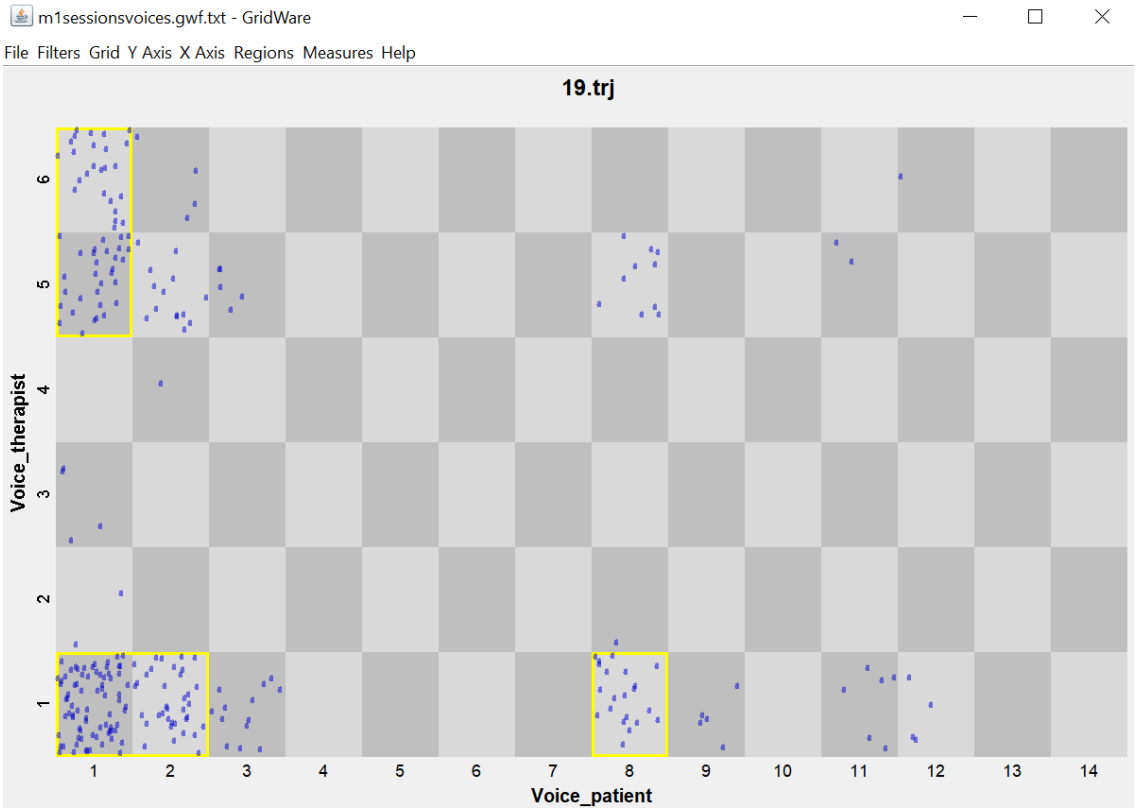
Session 19


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
19.trj
Voice_therapist
Voice_patient
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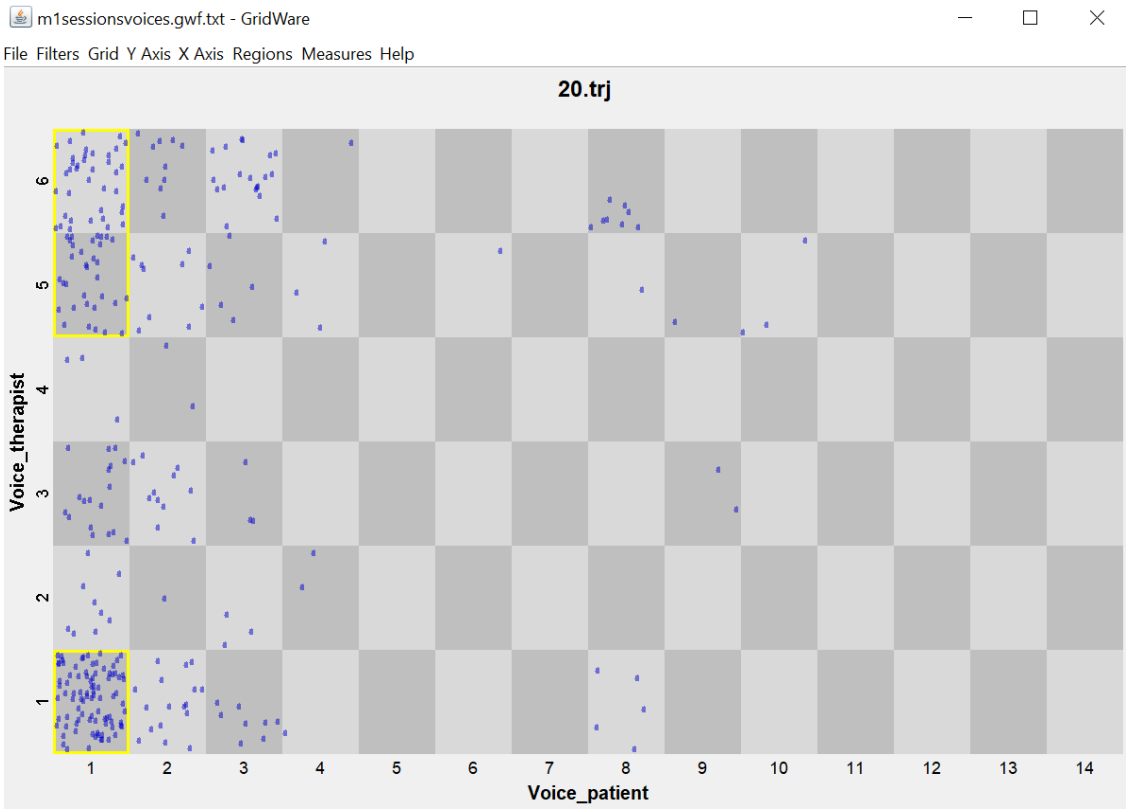
Session 20


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
20.trj
Voice_therapist
Voice_patient
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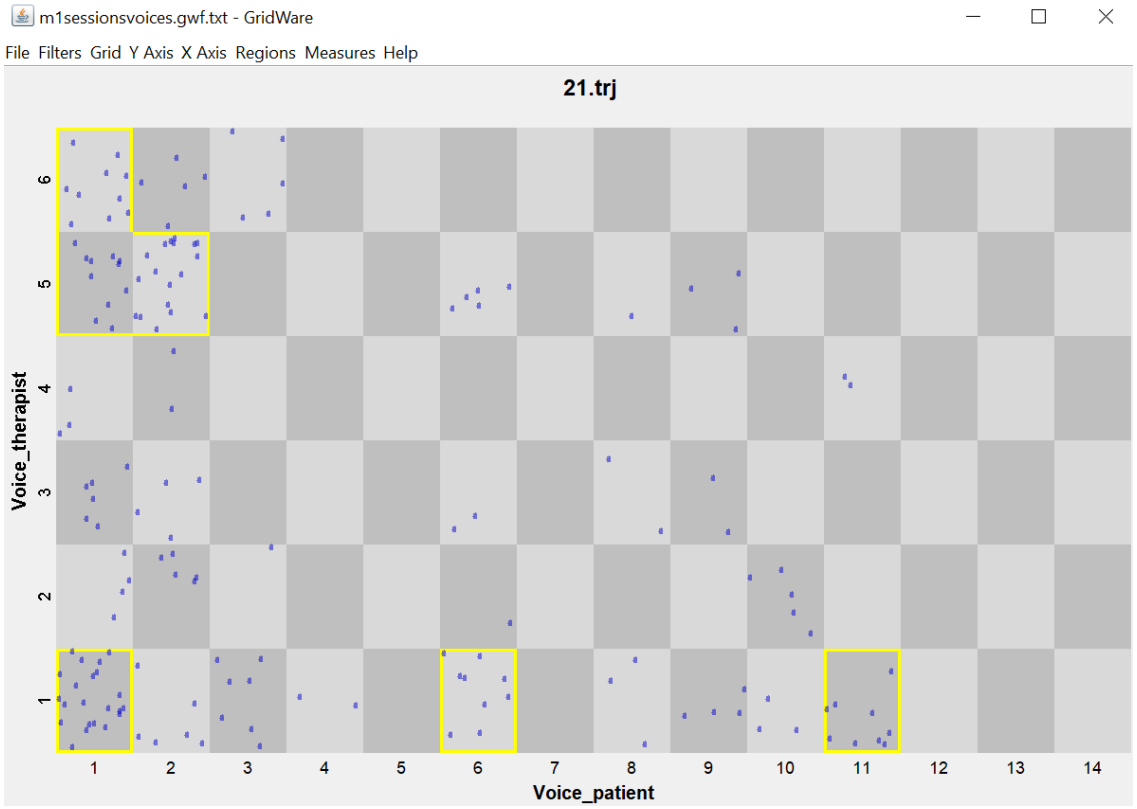
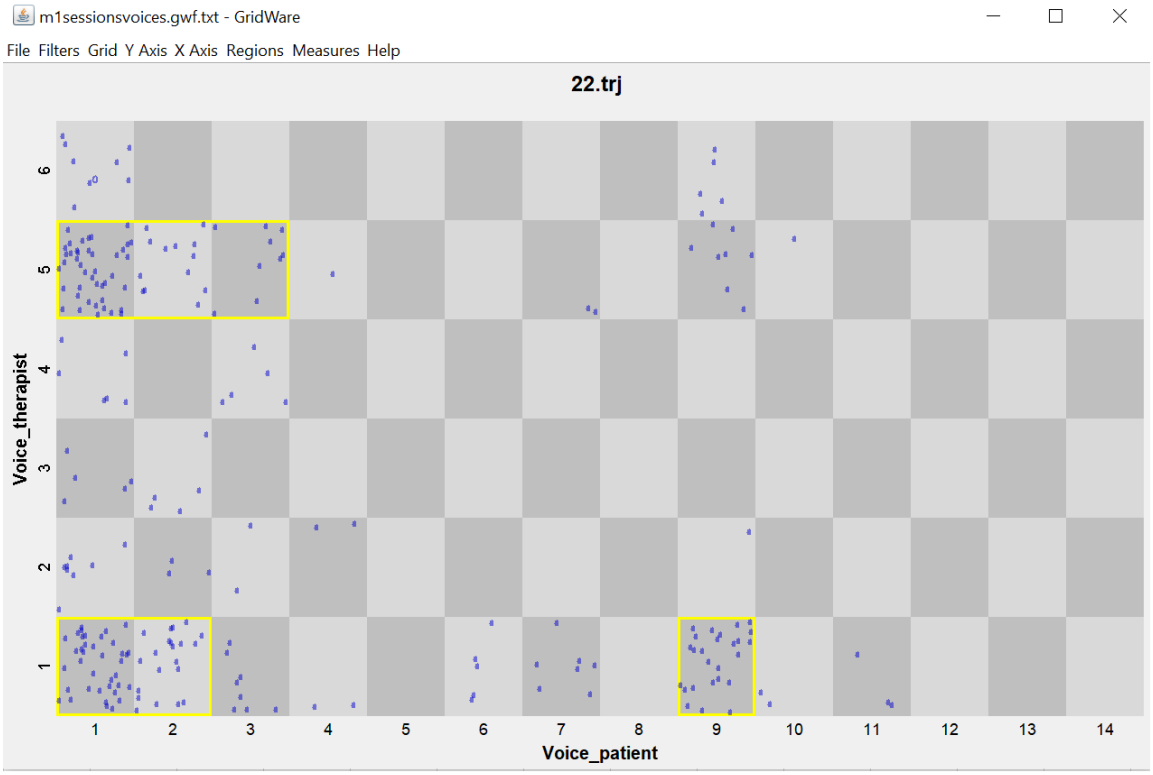
Session 21


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
21.trj
Voice_therapist
Voice_patient
1 2 3 4 5 6 7 8 9 10 11 12 13 14
1 2 3 4 5 6

Session 22


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
22.trj
Voice_therapist
Voice_patient
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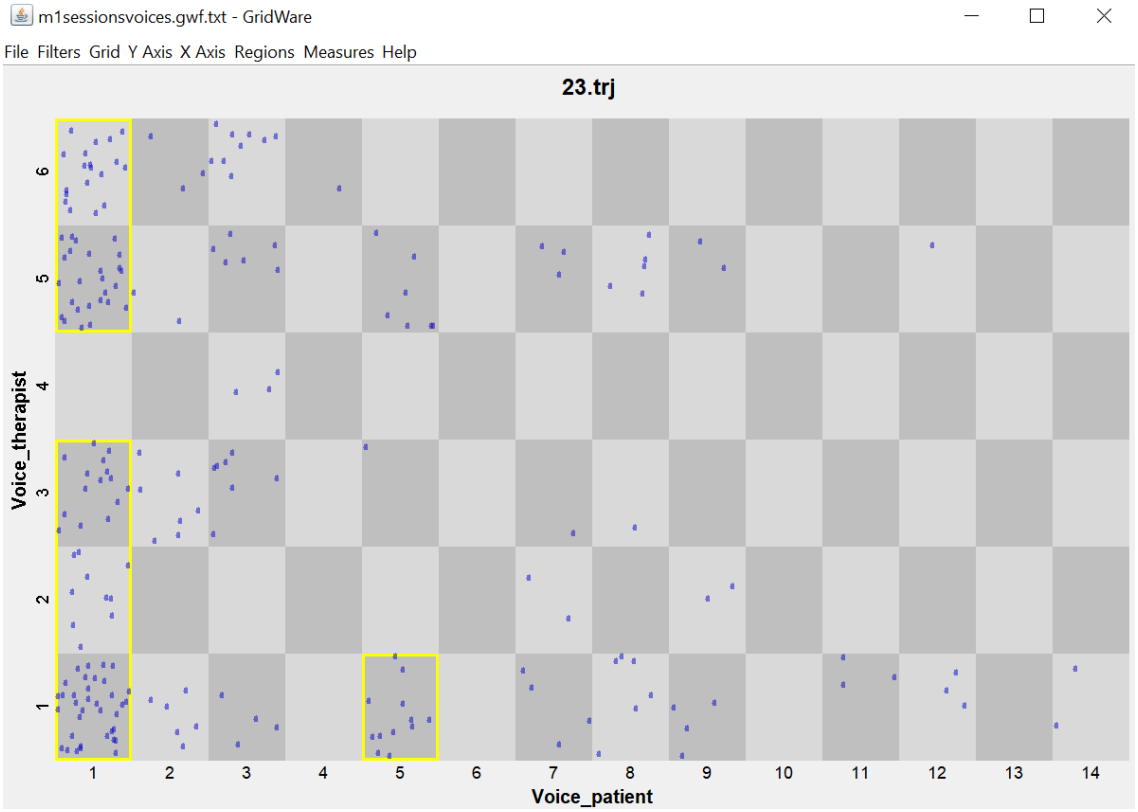
Session 23


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
23.trj
Voice_therapist
Voice_patient
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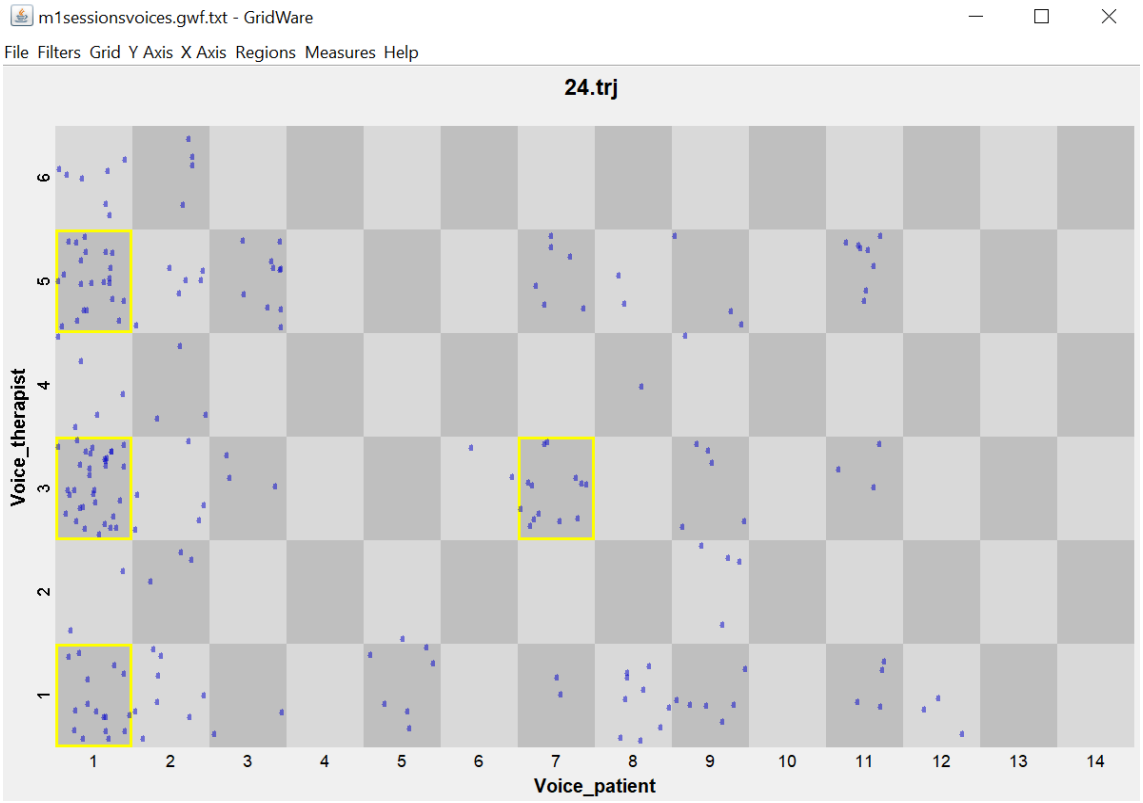
Session 24


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
24.trj
Voice_therapist
Voice_patient
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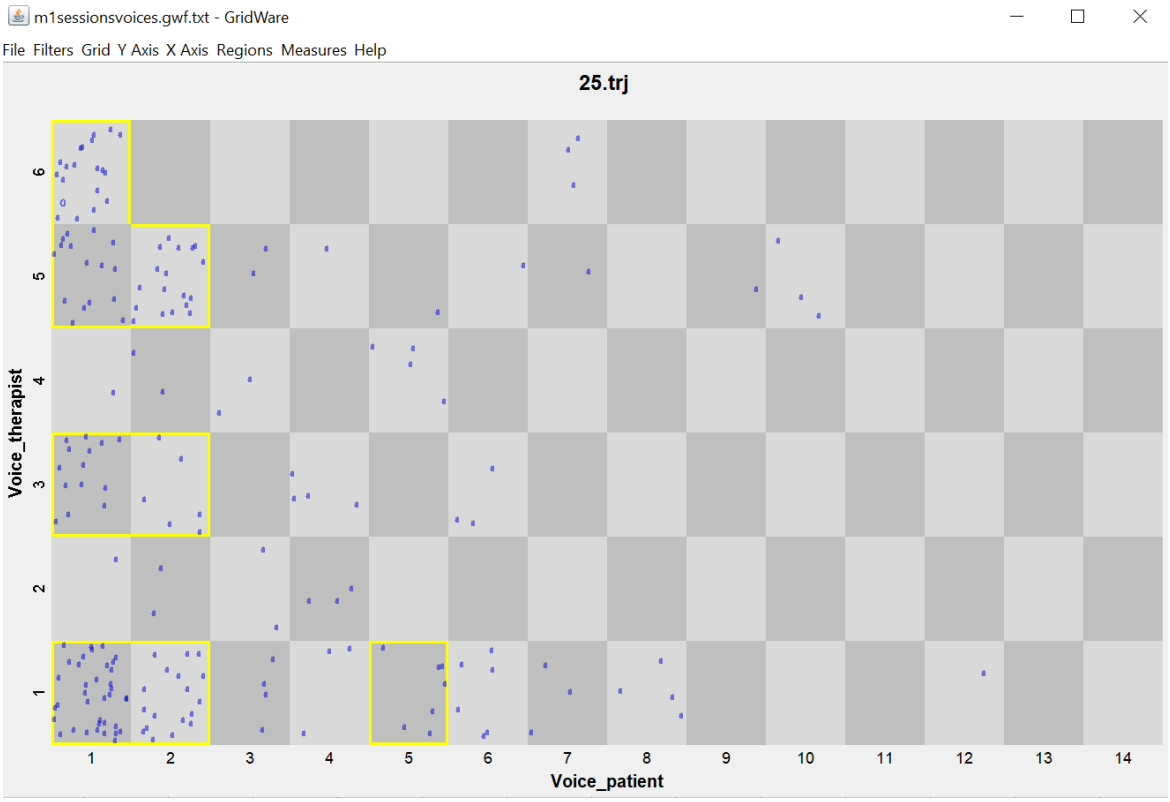
Session 25


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
25.trj
Voice_therapist
Voice_patient
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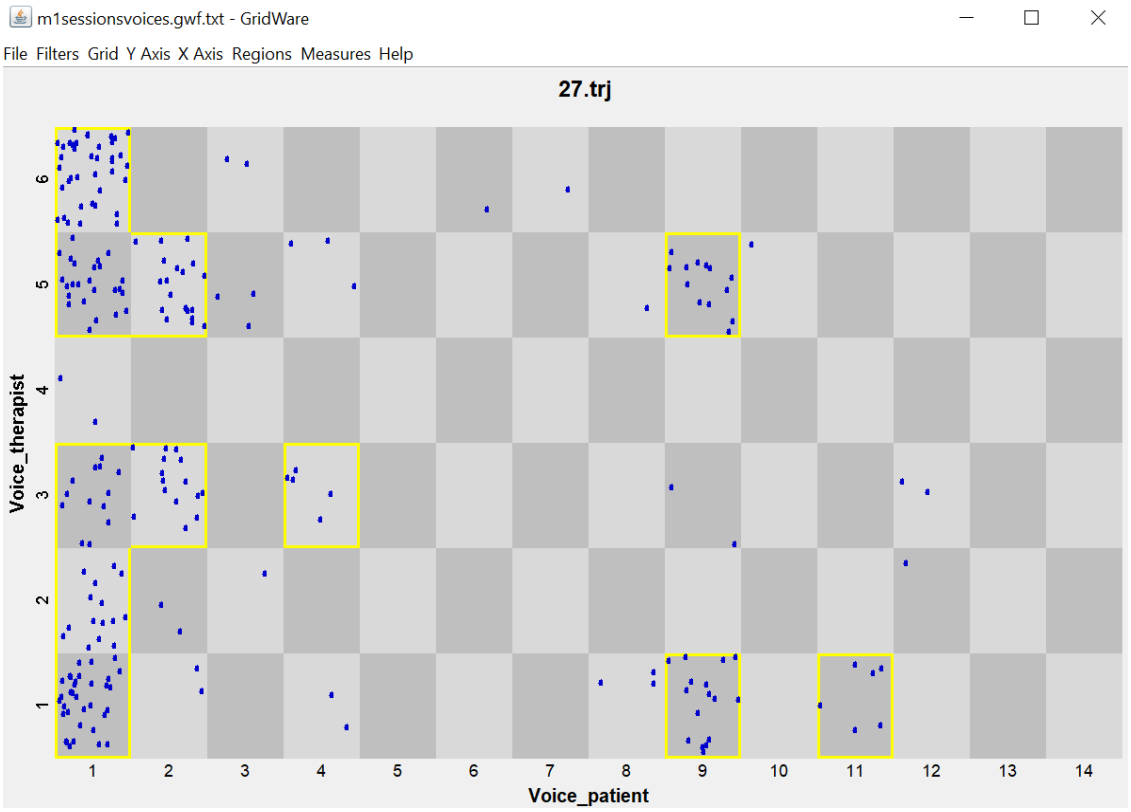
Session 27


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
27.trj
Voice_therapist
Voice_patient
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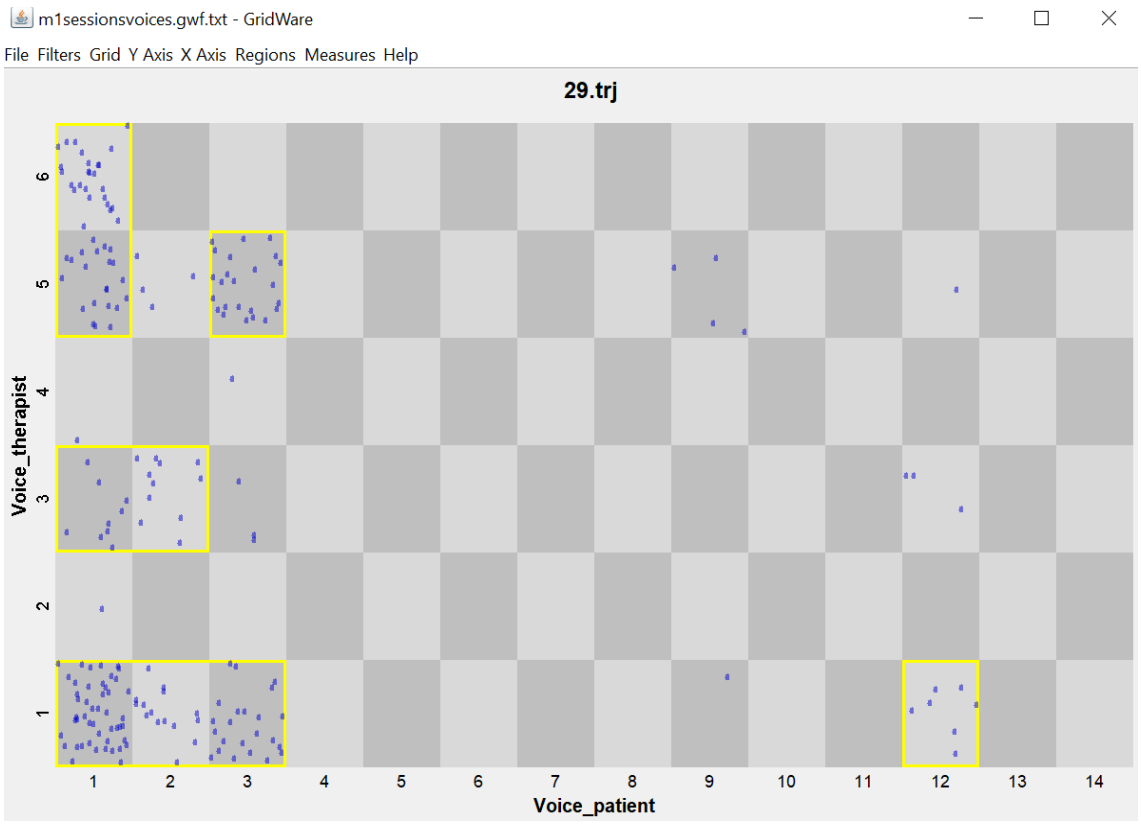
Session 29


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
29.trj
Voice_therapist
Voice_patient
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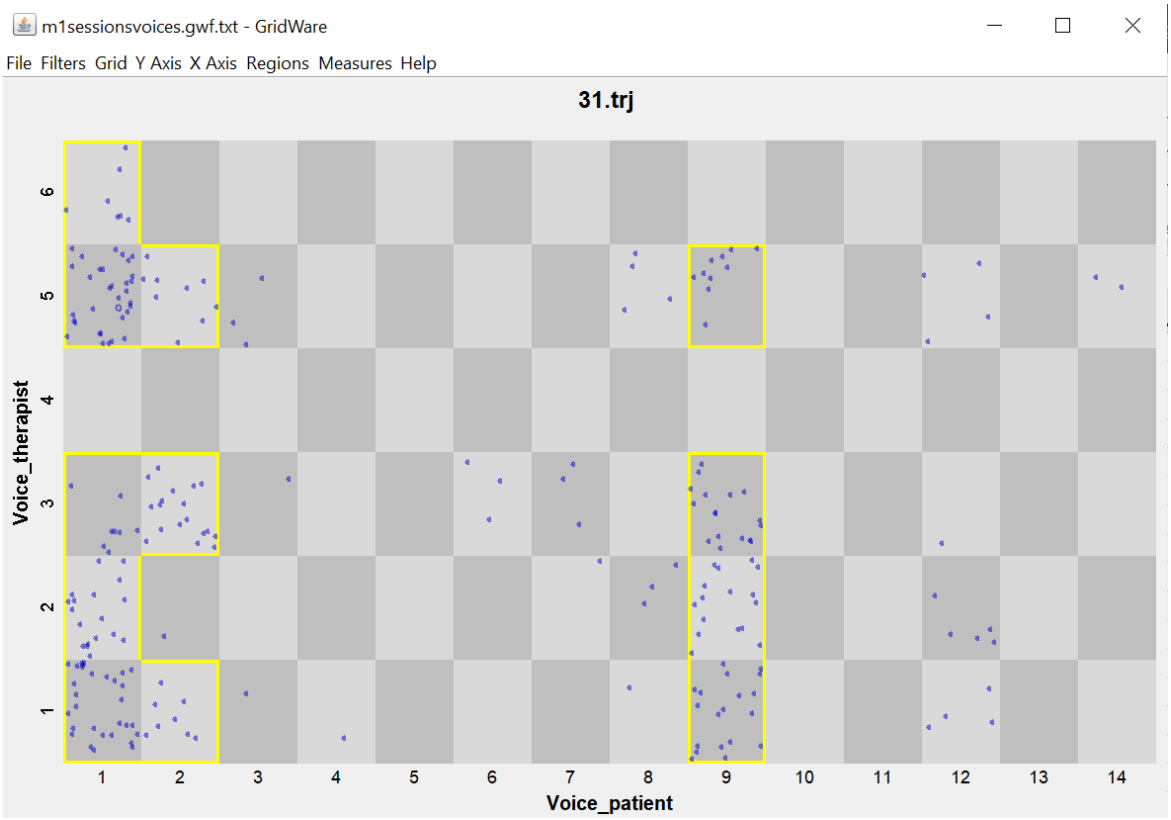
Session 31


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
31.trj
Voice_therapist
Voice_patient
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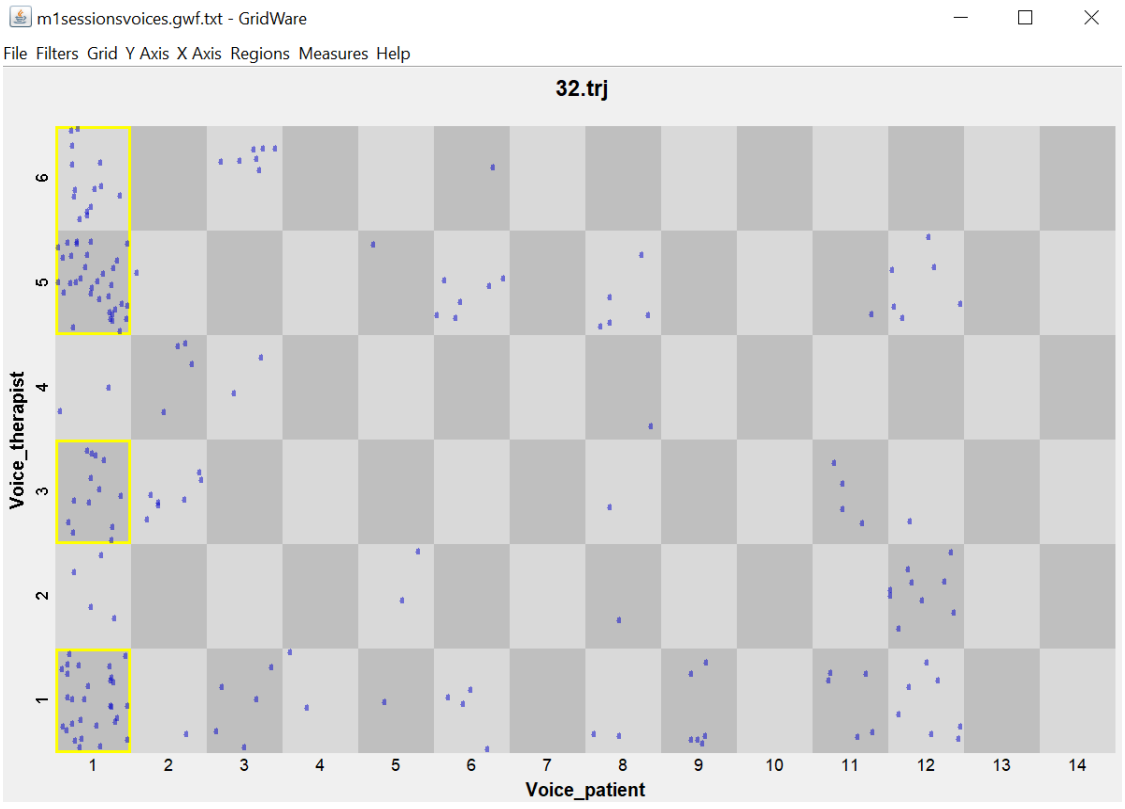
Session 32


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
32.trj
Voice_therapist
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Voice_patient
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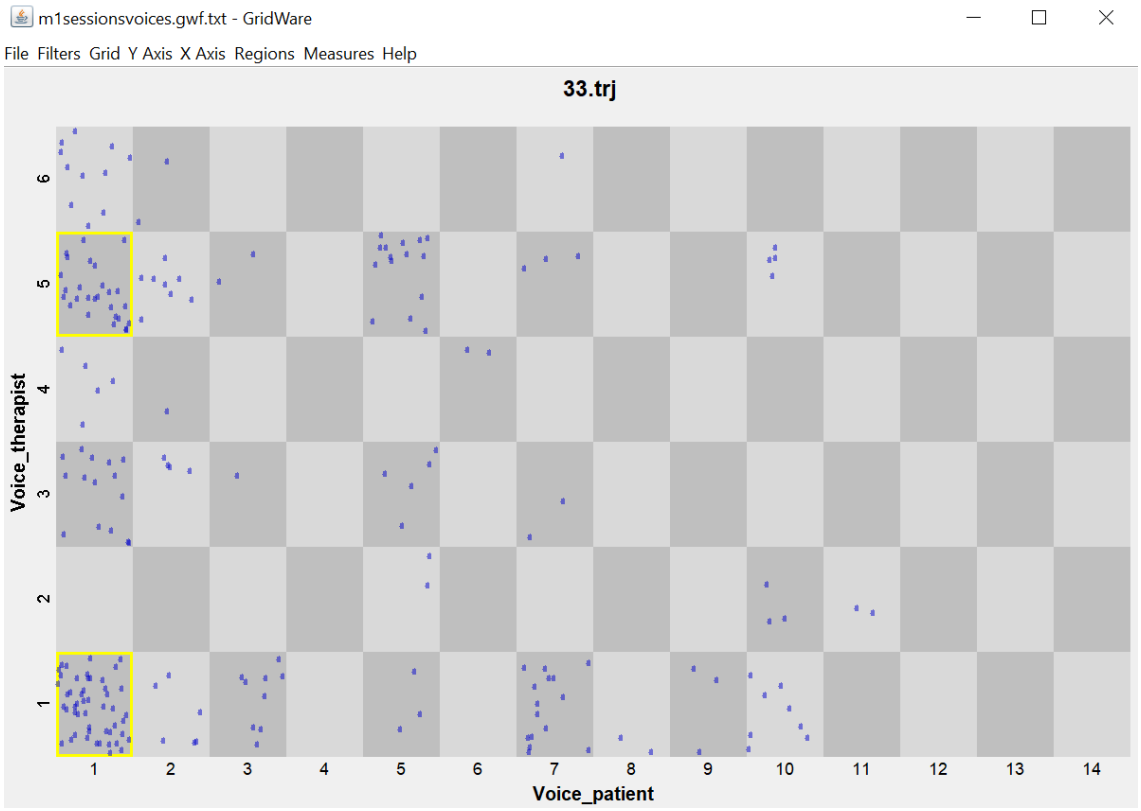
Session 33


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
33.trj
Voice_therapist
Voice_patient
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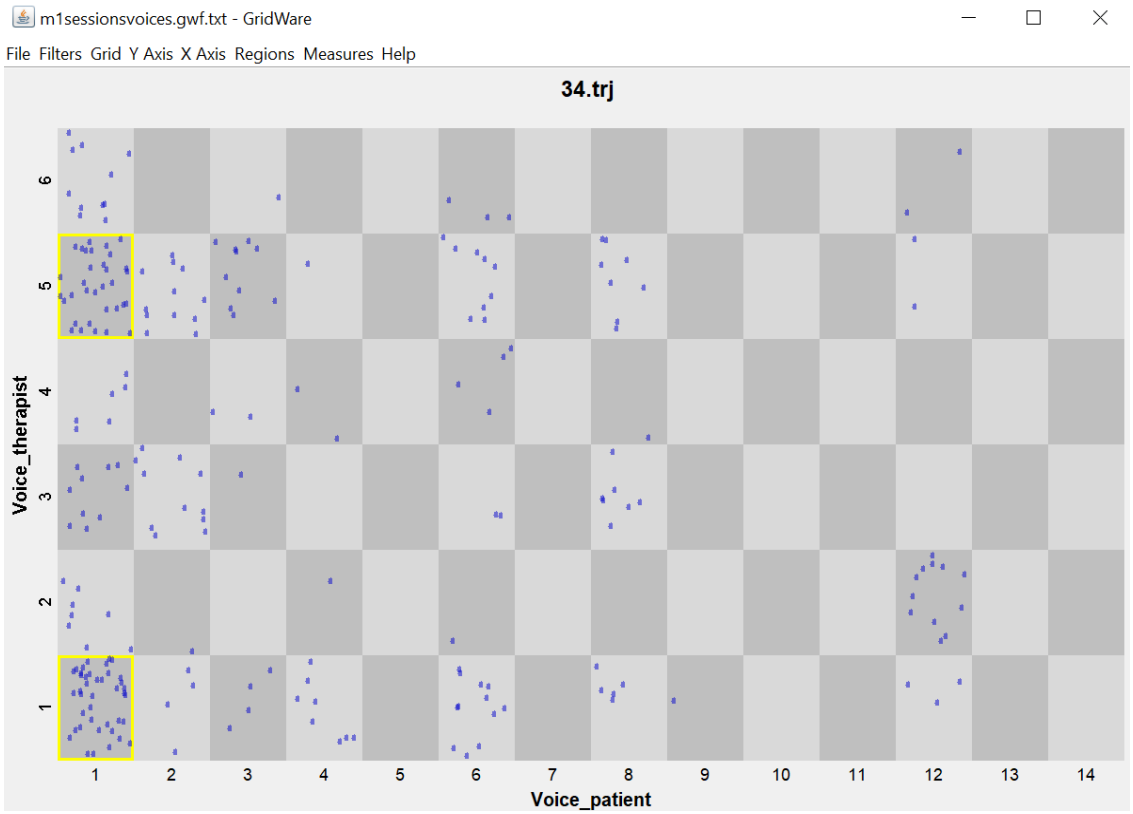
Session 34


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
34.trj
Voice_therapist
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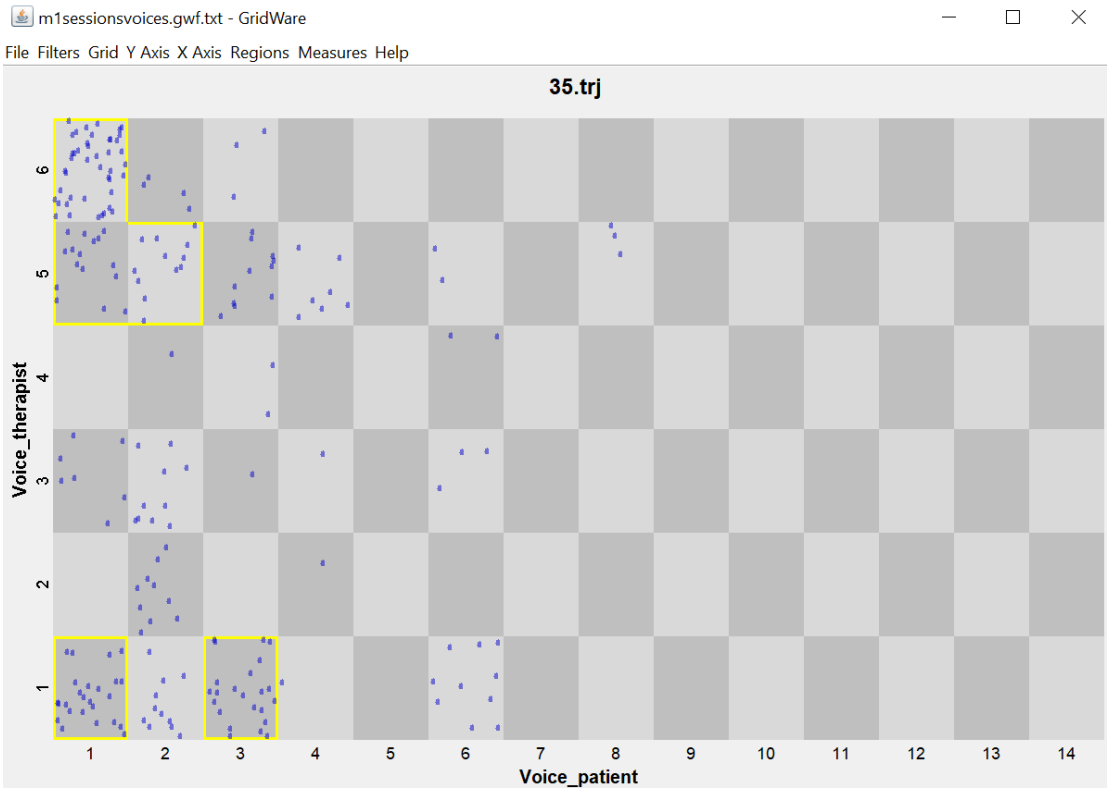
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Voice_patient

Session 35


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
35.trj
Voice_therapist
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Voice_patient
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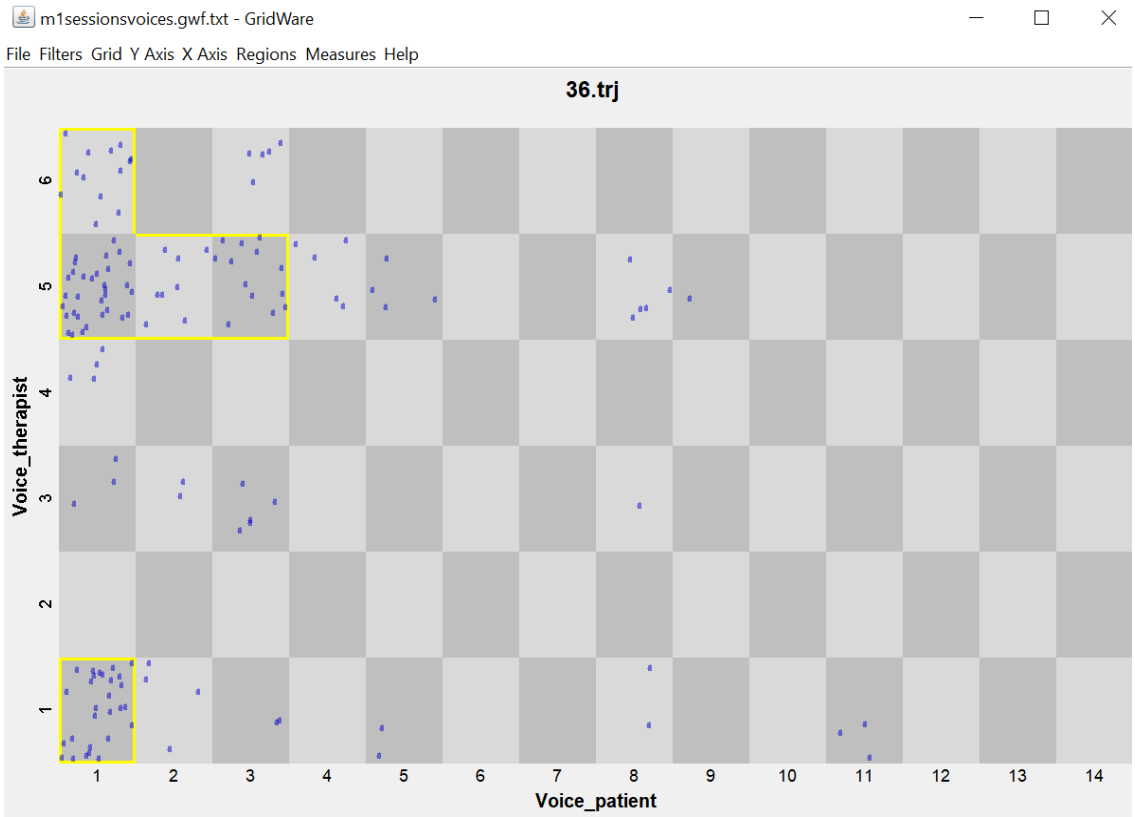
Session 36


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
36.trj
Voice_therapist
Voice_patient
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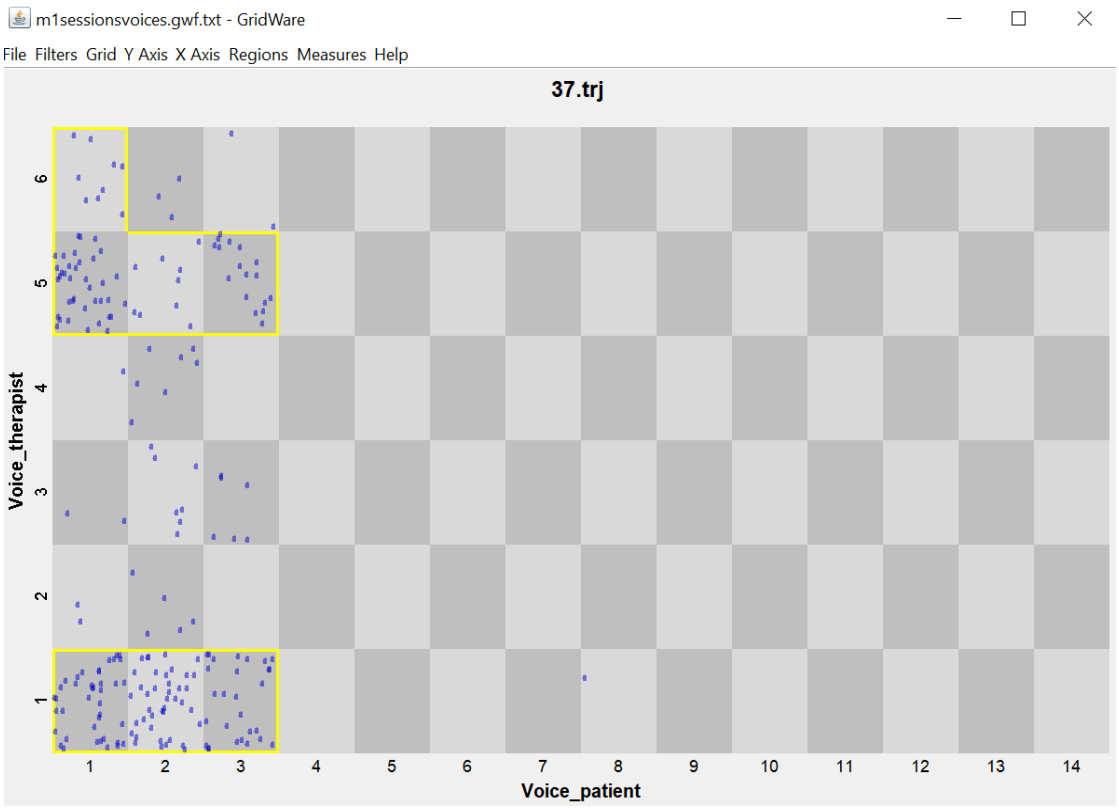
Session 37


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
37.trj
Voice_therapist
Voice_patient
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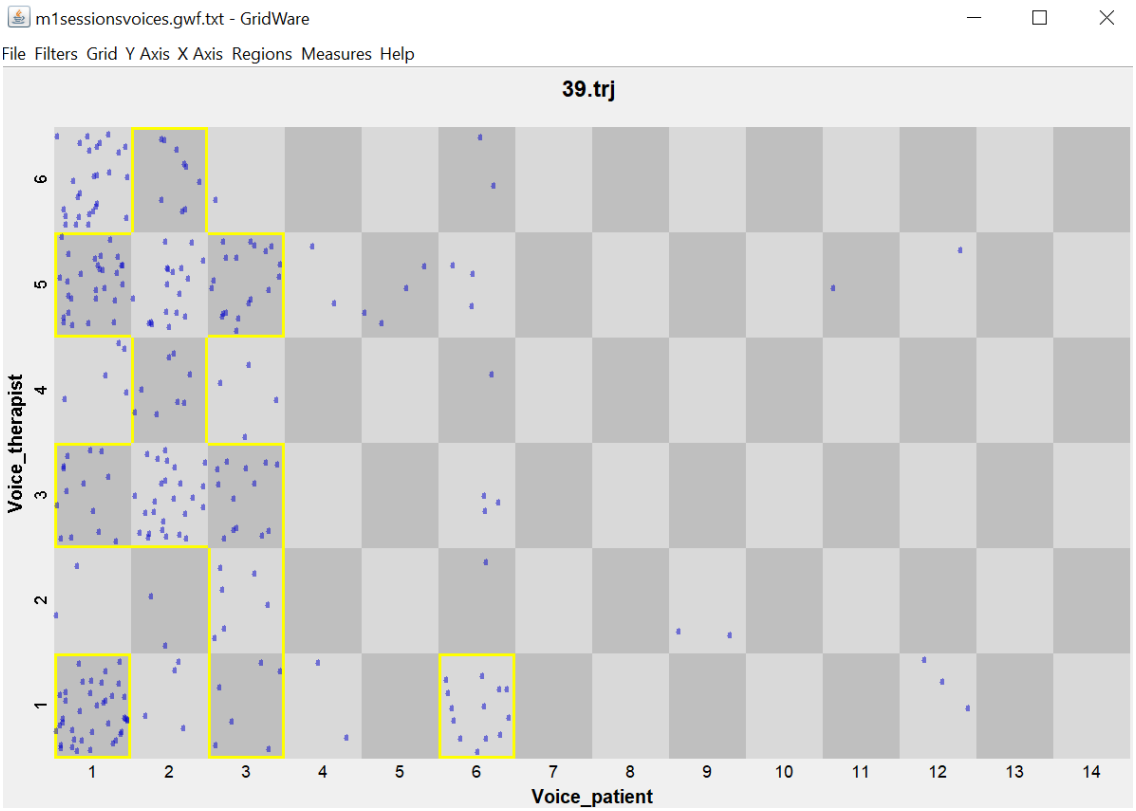
Session 39


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
39.trj
Voice_therapist
Voice_patient
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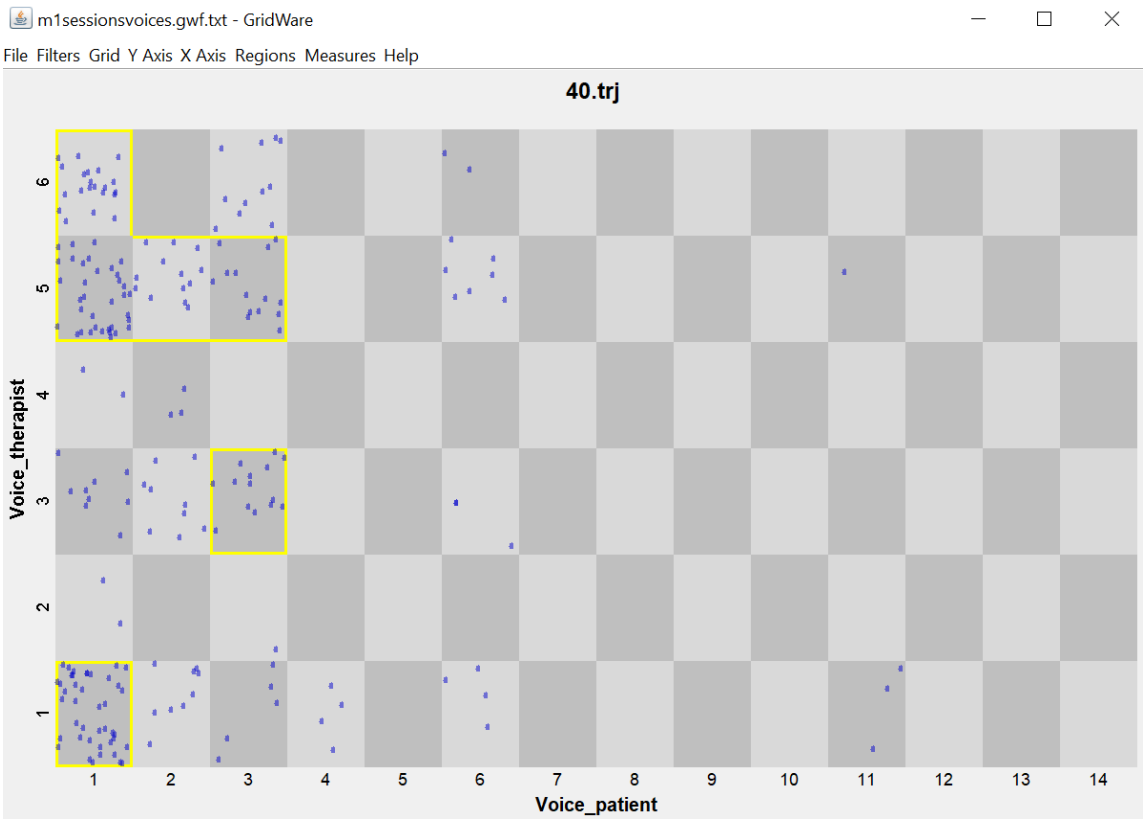
Session 40


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
40.trj
Voice_therapist
Voice_patient
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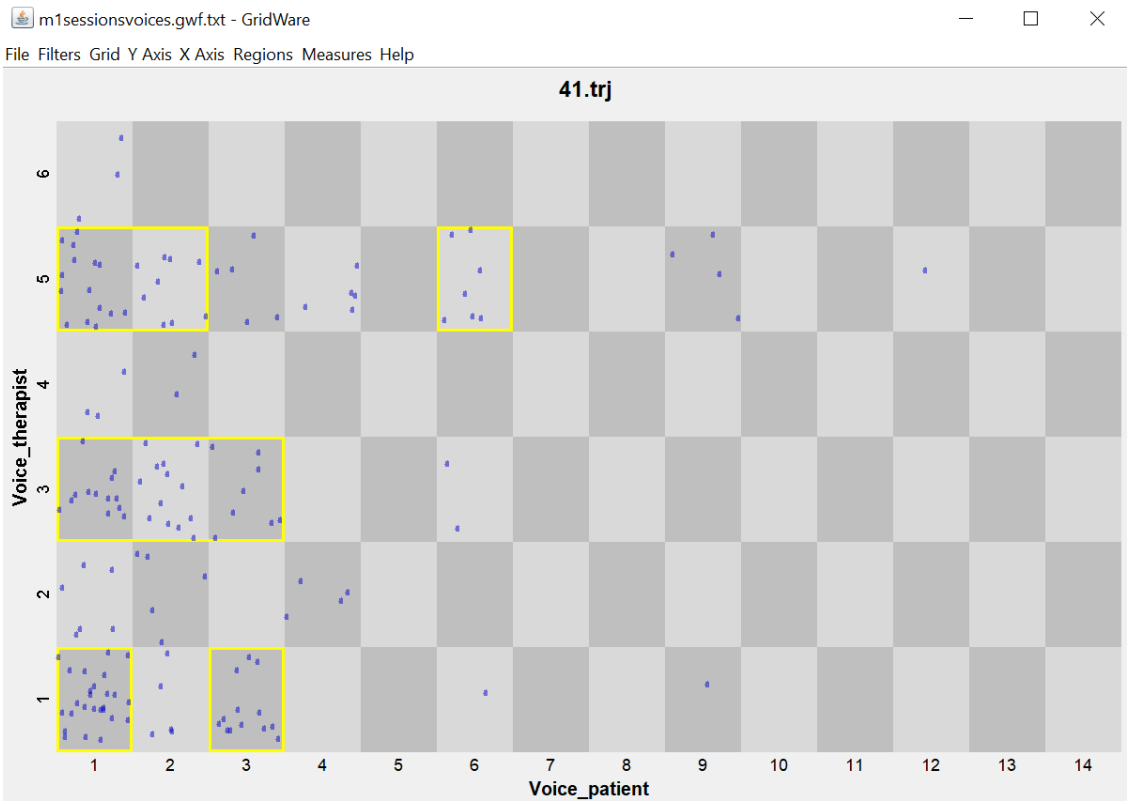
Session 41


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
41.trj
Voice_therapist
Voice_patient
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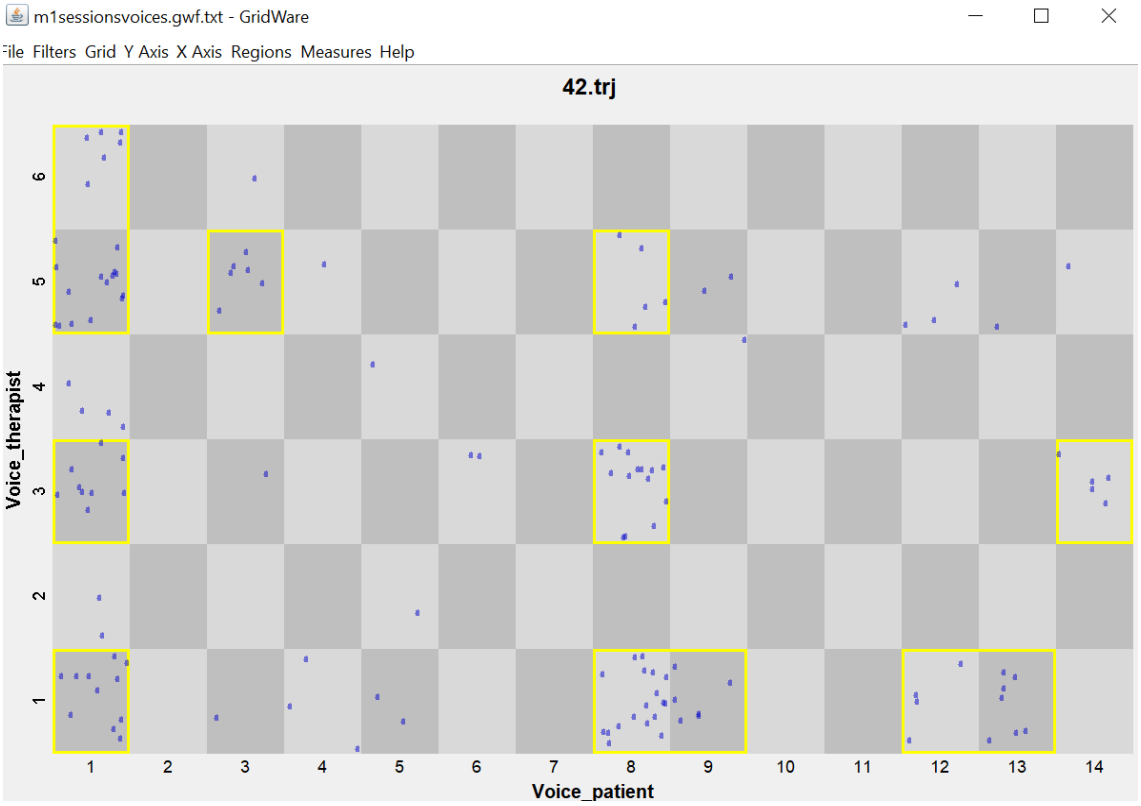
Session 42


m1sessionsvoices.gwf.txt - GridWare
File Filters Grid Y Axis X Axis Regions Measures Help
42.trj
Voice_therapist
Voice_patient
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