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Therapeutic interventions
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in a standard cognitive therapy

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LIST OF ABBREVIATIONS

AMDP	Arbeitsgemeinschaft für Methodik und Dokumentation in der Psychiatrie
AB	Abstraction
BPRS	Brief Psychiatric Rating Scale
CM	Cycles Model software
CPIRS	Comprehensive Psychotherapy Interventions Rating Scale
CT	Connecting Types
DSM-IV TR	Diagnostic and Statistical Manual of Mental Disorders, 4th ed., Text Revision
EAP	Emotion-Abstraction Patterns
ET	Emotional Tone
GAF	Global Assessment of Functioning
GJ	Global Judgment items
nET	Negative Emotional Tone
pET	Positive Emotional Tone
RET	Rational-Emotive Therapy
RMT	Resonating Minds Theory
TCM	Therapeutic Cycles Model
TMS	Textbank Management System
WB	Word Blocks

1.   INTRODUCTION

1.1   Psychotherapy research: Historical perspective

Psychotherapy research is mainly focused on the empirical investigation of why and how therapy leads to change, in order to increase our theoretical knowledge on the matter, to improve psychotherapy practice, and even to optimize the provision of mental health care (Howard, Krasner, Saunders, 2000). It can be still considered a relatively young science: The pioneers of the field were Karl Abraham in the 1920s, Edward Glover in the 1930s, and Carl Rogers in the 1940s, but usually the researchers date the birth of psychotherapy research in the 1950s, and more specifically in 1952, when Hans Eysenck published the results of his studies review on the efficacy of psychotherapy. In his paper, he claimed that there was no empirical evidence supporting the assumption that psychotherapy is truly effective. At the time, this provocative conclusion demonstrated the need for systematic research, and fostered a host of studies, mainly focused on the psychotherapy's efficacy evaluation: Many researchers took up Eysenck's challenge, and this marked the beginning of the first developmental phase in psychotherapy research (Migone, 2006). Between 1950 and 1970, the researchers' interest was above all to empirically evaluate outcome, and to demonstrate that psychotherapy works and actually provides good effects on the patients. This particular branch has been traditionally called "outcome research", and generally speaking it was devoted to measure the changes that occur between pre-therapy and post-therapy assessment (Hill, Corbett, 1993). Another relevant aspect is that, back then, many health care organizations were concerned about the quality and availability of treatments for the people. Important decisions had to be taken, regarding the coverage of mental health resources, but there was limited amount of research on the usefulness of psychotherapy (Bergin, Garfield, 1994).

The second phase in psychotherapy research is dated between 1960 and 1980. During these decades, the researchers' focus of interest gradually shifted from evaluating the outcome, to improving the understanding of the mechanisms by which change is brought about in psychotherapy treatments. This branch, as opposed to outcome research, was named "process research", because here the focus is on the process that leads to changes in a patient's way of thinking, feeling, and behaving (Migone, 2006).

The third and last phase, that lasts till now, is characterized by the growing attention towards the link between outcome and process data, in order to inquire what actually happens in psychotherapy, rather than merely illustrate what psychotherapy ought to be (Khodayarifard, 2012). Therefore, this kind of research deals mostly with the relationship between mediators and mechanisms of change, and the evaluation of outcome, that can be seen at a macro-level (thus concerning the entire treatment taken as a whole), or at a micro-level (considering only a specific session or phase of the treatment) (Timulak, 2008).

1.1.1 Outcome research

"Psychotherapy works. This has been demonstrated by a number of authors focusing on outcome research" (Mergenthaler, 2008, p. 109). In fact, nowadays in the literature it is possible to find remarkable consensus on the fact that psychotherapy is actually effective, and from a recent study we know that recovery and improvement rates are respectively of about 60% and 65% (Lambert, 2007). A great step forward in outcome research was made with the introduction of meta-analysis procedure (Glass, 1976). This statistical technique allowed the integration of research data, collected from many existing studies, through the analysis of the effect magnitude measures, or effect sizes (Smith, Glass, 1977). Migone (2006) states that the final answer to the long disputed debate of the psychotherapy efficacy came from two important meta-analytical studies: The one conducted by Smith, Glass, & Miller (1980), and the one

made by Shapiro & Shapiro (1982). According to the findings of these studies, psychotherapy is effective indeed, as it yields much better results than the placebo. This conclusion is now supported by a substantial body of evidence (Howard, Krasner, Saunders, 2000).

However, there is still a low level of agreement among the researchers on the extent to which psychotherapy works: It remains unclear under which specific conditions a treatment is effective, and which of its ingredients are responsible for change. Moreover, there is also another issue that constantly affects outcome research: According to a large amount of research data, a multitude of treatments have been demonstrated to be more effective than the wait-list control group, so that it seems like there is no significant difference among the various therapeutic orientations regarding the outcome. These findings led to the so-called "equivalency paradox" (Stiles, Shapiro, Elliott, 1986), that provided the ground for the "common factors" research: If all treatments are substantially equal, most of the positive effect caused by all the different psychotherapy schools is hypothesized to be related to factors that all the orientations have in common like, for example, establishing a good working alliance with the patient (Höfler, Gloster, Hoyer, 2010). This is the reason why nowadays researchers are less and less interested in carrying out comparative outcome studies. On the contrary, the contemporary psychotherapy research perspective is mainly focused on the struggle to develop specific treatments for specific disorders (Bergin, Garfield, 1994).

1.1.2 Process research

The most important goal of process research is to classify, describe and measure what a therapist and a patient actually do in session (Stiles et al., 1999). Initially, process research studies were conceived in order to explain the equivalency paradox: If the theoretical and procedural models of all the various psychotherapy orientations differ one from another, it is important to understand why the research findings

suggest that they are substantially equivalent regarding the general efficacy (Dazzi, 2006). Therefore, researchers became more and more interested in examining the process of change, and the underlying factors and mechanisms that go beyond the specific techniques. These common factors are hypothesized to be shared by every psychotherapy school, and some authors claim them to be actually responsible for change (for instance, Luborsky et al., 2002). However, given the fact that these common factors seem to be crucial for the outcome (Lambert, 2004), and that many forms of psychotherapy can lead to therapeutic change, multiple questions remain, including "the extent and indeed whether many treatments make a palpable difference in the lives of those treated, whether some treatments are more effective than others, and how we can harness the many factors that influence outcome" (Kazdin, 2009, p. 418).

Another strong impulse for process research came from the need to measure the extent to which a specific treatment was actually coherent with the theoretical principles and the procedural indications of that particular therapeutic orientation. This adherence between the manualized guidelines of a certain orientation and the actual treatment, was intended as the necessary precondition for comparative studies (Migone, 2006). From a methodological point of view, process research required also the development of standardized criteria for recording and transcribing the therapy sessions (Orlinsky et al., 2004). These procedures allowed the researchers to gather empirical data on the therapeutic process, in order to inquire how and through which mechanisms a person's affective experience, cognition, and behavior can be modified.

1.1.3 Process-outcome research

In the last few decades, many researchers have stressed the need to go beyond the usual differentiation between process and outcome research: In order to acquire empirical data, that may be really useful for clinical practice, it seems necessary to link process variables to therapy outcome (Orlinsky et al., 2004). This perspective has

been called "process-outcome research", to indicate that the focus is on the relationship between the two branches of research.

Generally speaking, these studies try to link the variables that are proven to influence the process of therapeutic change (such as pre-therapy conditions, patient's characteristics, therapist's techniques, common factors, and so on), to outcome data. Outcome can be assessed not only at the end of the treatment, or in the follow-up, thus providing its efficacy evaluation, but also within or after a specific session. However, process-outcome research deals primarily with the relationship between the patient's behavior outside the therapy sessions, usually assessed after the treatment has ended, and the process variables that are measured during the course of the treatment. The aim is to inquire what is actually therapeutic about psychotherapy, and to identify the active ingredients of all the effective treatments (Orlinsky, Grawe, Parks, 1994). To do so, several methods can be applied, but the most frequently used is the correlational approach: The researchers try to relate the occurrence frequency of a process variable to outcome measures. Some authors criticize these study designs, since they usually do not take into account the timing, appropriateness, quality, and the context of the process variables (Hill, Lambert, 1994). Moreover, Stiles (1988) noted that this kind of approach cannot account for the specific patient's needs: Some patients affected by severe mental disorders may end up with poor outcome not because the therapist's interventions are ineffective, but most likely because those particular patients could not make use of them effectively. Regarding this matter, McCullough et al. (1991) suggest that what makes a difference is not just the therapist's intervention, but rather the patient's ability to use it effectively in that particular moment.

Another important method in process-outcome research is sequential analysis, used to study the immediate effects of process variables and events (Bakeman, Gottman, 1986). This approach allows to preserve the temporal continuity of the interpersonal exchange between patient and therapist, by observing the impact of a specific variable in the ongoing process. It can be useful to inquire the relationship between the use of certain interventions by the therapist, and the reactions of the patient. Despite of its limitations, sequential analysis has been applied effectively to a

variety of contexts, and it is accounted to be one of the best methods in process-outcome research (Hill, Lambert, 1994; Lambert, 2004).

1.2   *The Resonating Minds Theory (RMT)*

The Resonating Minds Theory (*RMT*; Mergenthaler, 2008) is both a theory of the therapeutic process and change, and a model that can be useful for its empirical assessment. This model is based on a computer assisted analysis procedure that has been developed by Mergenthaler and his collaborators over the last 20 years, and that constitutes the core of the Therapeutic Cycles Model (*TCM*; Mergenthaler, 1996a, 1996b, 1998a, 1998b, 2000, 2002, 2003a, 2003b). Mergenthaler defines the Resonating Minds Theory as an approach that "maps the therapeutic process and enables the process researcher to identify clinical processes and significant clinical events, to analyze them in detail, and to relate them to concepts stemming from neuroscience, experimental, and cognitive psychology" (Mergenthaler, 2008, p. 109).

   In order to understand why and how therapeutic change takes place, it is necessary to analyze the process of meaning making that occurs between the patient and the therapist while they are speaking to each other. This particular interaction is what Mergenthaler calls the "resonating mind" process (Mergenthaler, 2008). Within this theoretical framework, it is possible to identify two different aspects, and both provide ground for psychotherapy process research: The interpersonal approach, and the intrapersonal approach. The first one is focused on what happens in the interaction between two or more people, and therefore regards concepts like the therapeutic alliance, the pathways of emotional communication (Bucci, 2001), and, for what concerns the biological level, the so-called "mirror neurons" (Rizzolatti, Fogassi, Gallese, 2001), which represent neurophysiologic mechanisms underlying the understanding and imitation of actions and experiences (Saarela et al., 2007). The second one regards the flow of information within a single person's mind, or activities between brain areas and hemispheres, which lead to asymmetries of the brain

(Hugdahl, Davidson, 2003). All these aspects are taken into account by RMT, in order to analyze the interactive system created by the therapist's interventions, and the patient's reaction and behavior. In other words, according to Mergenthaler, "the key concepts that are being used in RMT are therapeutic process and change, brain asymmetry, cognition and emotion, and therapeutic interventions understood as triggering different mental states or brain activities in the patient" (Mergenthaler, 2008, p. 110).

According to RMT, it is possible to identify three factors that are mostly involved in the process of therapeutic change: Affective experiencing, cognitive mastery, and behavior. The patients' maladaptive ways of functioning can always be addressed to these three basic areas, therefore it is reasonable to conclude that therapeutic change is a progress from a pathological to a more adaptive regulation of cognition, emotion, and behavior. Even though the exact mechanisms of therapeutic change are still unknown, the literature suggests that the role of the therapist consists in applying interventions that help the patient evolve from a pathological regulation system to a more adaptive one (Mergenthaler, 2008).

The theoretical approach described above represents a comprehensive theory to understand the psychotherapy process and the mechanisms which are responsible for change. The Therapeutic Cycles Model, or TCM (Mergenthaler, 1998a, 1998b, 2000, 2002, 2003b), instead, provides the appropriate tools to allow the assessment of the theory, by means of empirical research. It relies on computer-assisted content analysis, by means of which it is possible to analyze psychotherapy transcripts, in order to study the therapeutic process from a linguistic point of view.

1.3   The Therapeutic Cycles Model (TCM)

The Therapeutic Cycles Model (Mergenthaler, 1996a, 1996b, 1998a, 1998b, 2000, 2002, 2003a, 2003b) is usually considered as a process model (Casonato, Gallo, 2005), referring to the traditional distinction between process and outcome research.

However, even though the main goal of the TCM is to describe precisely what is going on within the therapeutic relationship, allowing an empirically based investigation of the process, providing evidence on the outcome is a relevant task in order to understand the therapeutic mechanisms. This is why it seems useful to remark that process and outcome measures are strictly bound to each other, and therefore they have to be taken together (Gril, Mergenthaler, 1998). The description of the therapeutic process, as it is provided by the Therapeutic Cycles Model, makes possible to explain outcome results.

Mergenthaler criticizes the frequent lack of consistency, in psychotherapy research, between the empirically based data, which are collected outside of the therapeutic context, and the clinical concepts. This leads to a gap between research and clinical practice. On the contrary, the researcher should always pay attention to the degree at which these two different levels of knowledge can fit together (Bucci, 1997). So it is very important to develop first a general theory of change, which is useful to clearly define the clinical concepts and to operationalize them. According to Mergenthaler (1998a), this is the basic rule of any empirical study: experimental psychotherapy research has to refer constantly to the clinical field, in order to produce hypotheses that are consistent with the phenomena that have to be observed and studied. To do so, we need to identify not only process-sensitive measures, but also a process model that is built on a general theory of change, which takes into account the variables that are closely correlated with change along with their interaction over time.

The TCM is a psychotherapy process text-based research method (Lepper, Riding, 2006). It makes use of verbatim transcripts of psychotherapy sessions, focusing on the verbal communication between patient and therapist, without taking into account other aspects of their communicative interaction, like non-verbal and para-verbal aspects. The analysis is based on specific computer assisted text-analytic tools, which are helpful to find in the text the verbal markers related to the variables to be measured. The method can be applied to every kind of treatment, independently from the therapist's orientation. The only prerequisite for the therapy to be analyzed by the TCM is that it must make use of language as the main and primary clinical instrument (Mergenthaler, 2002a, 2002b).

Since the beginning of its development, the Therapeutic Cycles Model has been validated by a considerable number of studies (Nicolò et al., 2000; Fabi, Mergenthaler, 2004; Mergenthaler, 2003b; Kraemer, Lihl, Mergenthaler, 2007), and the findings always supported both the theoretical framework of the model and its notion of *Therapeutic Cycles* as markers of clinically significant moments of the treatment. Therefore, the TCM is nowadays considered to be one of the most reliable and powerful models of the therapeutic process, by means of which it was possible to make a significant step towards practice oriented research, and at the same time to improve the quality management of the clinical work with patients.

1.3.1 Theory of change

The change agents: Emotional Tone and Abstraction

Every therapeutic treatment makes use of a particular theoretical framework, in order to define the concepts of mental disorder, health, and change. The latter concept can be seen metaphorically as a bridge connecting the first one to the second one: Change represents all the processes which can lead to a clinical improvement in the patient. Each therapeutic approach has its own way to look at these phenomena and to interpret them. Nevertheless, research on common factors (Rosenzweig, 1936; Frank, 1961, 1971; Grawe, 1997; Wampold, 2001; Blasi, Casonato, 2005) clearly shows that, despite of the school-specific therapeutic interventions and techniques, it is possible to point out several therapeutic agents that were proven to be common to nearly all orientations. Moreover, these unspecific active ingredients are often considered as the most important actions or conditions that can lead to a clinically relevant modification of the patient's subjective state or behavior.

From this point of view, the Therapeutic Cycles Model refers to the work of Karasu (1986), who identifies three different change agents that seem to play a crucial role in every kind of psychotherapy treatment: *Affective experiencing*, *Cognitive mastery* and

Behavioral modification. Mergenthaler (1996a, 1996b, 1998a) chooses to focus on the first two change agents, that are seen as the most important common factors upon which his entire theory of change is constructed. In fact, the TCM describes the dynamic interaction between the emotional-affective and the cognitive state of the patient, either from a macroanalytical perspective – through the analysis of the emotional and cognitive regulation across the entire treatment – or a microanalytical perspective – identifying clinically significant moments within the patient/therapist interaction.

The emotional and affective experiences can be considered as the most relevant dimensions in every kind of psychotherapy (Frank, 1961, 1971; Karasu, 1986; Greenberg, Safran, 1987; Mergenthaler, 1996a, 1996b, 2003a; Grawe, 1997; Blasi, Casonato, 2005), and even the core subjects of psychotherapy itself. The main goal of the clinical work with the patient can also be related to the change of some disfunctional emotion schemas (Horowitz, 1991).

On the other side, the cognitive area concerns specifically the rational and reflective part, in terms of intellectual processes and functions that are used in order to build up knowledge and understanding about the Self, the world, and the relationship with the others. The term "cognition" refers to the phenomenon of information processing, and it can be conscious or unconscious. It has to do with the mental functioning and the reflective processes, and thus it includes the capacity for abstraction, generalization, and meta-reasoning, but also beliefs, desires and interpretations of facts, states or actions. The "reflecting abstraction" is a construction that leads to the development of understanding and perception (Piaget, 1977), and it was labeled by Schneider (1983) as the "central mechanism leading to the construction of new structures" (p. 81).

Within the theoretical framework of the Therapeutic Cycles Model, these two change agents are operationalized and measured respectively as *Emotional Tone* (ET) and *Abstraction* (AB), that coincide precisely with the two main variables taken into account by the model. Because of their status of fundamental change agents, they represent the basis upon which the entire theory of change of the model was constructed (Clementel-Jones, 1995).

The fluctuation of the amounts of Emotional Tone and Abstraction across the treatment is not randomly distributed, since it reflects the variations of the patient's emotional and cognitive state (Horowitz, 1999; Mergenthaler, 1996a, 1996b, 1998a, 1998b). It is therefore crucial, also from a clinical point of view, to develop a method that allows to empirically measure these two variables: This kind of analysis provides precious data that can be used to highlight the key moments in the treatment, both for macro- and microanalytical approach. This basic assumption refers to the notion of the *good analytical hour*, as it was first introduced by Kris (1956) and subsequently adopted by Mergenthaler (1996a, 1996b, 1998a, 1998b, 2000), who extended this concept to all the different psychotherapy orientations. The good hour, from this point of view, is directly connected to the presence of *Connecting*, that is the coincidence of emotional experience and cognitive mastery, which leads to insight. Actually, it is the occurrence of a Connecting phase that can reveal a key moment in the treatment or in the session: The patient has an insight when he[1] reaches a state of mind in which he is able to gain access to a deep emotional state, influenced by the emerging of the conflicting themes, but at the same time he is also able to reflect upon it. This event clinically marks a working-through phase, that is a crucial moment when the patient has a strong and enlightening experience which is the precondition for inner change.

Since the Therapeutic Cycles Model employs a computer-based text analysis, focused on the verbal exchange between patient and therapist, the amount of Emotional Tone and Abstraction is determined by computing the number of verbal markers that refer to the variables considered. These key-words represent the linguistic manifestations respectively of emotional and cognitive-reflective events, thus constituting reliable markers of the subject's inner state. In fact, this empirical method "is expected to allow one to operationalize and to measure the most important concept of psychoanalysis, emotional insight, in a transparent way" (Mergenthaler, 1996a, p. 1308).

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[1] Throughout this paper, when the discussion is about general matters and theoretical constructs, and not a specific person, the male gender will be used, although always both, male and female will be meant.

The Emotion-Abstraction Patterns

The levels of Emotional Tone and Abstraction flow continuously over time, in a way that it is supposed to be not randomly distributed. The Therapeutic Cycles Model offers an explanation of these fluctuations, which is based on its general theory of change. In particular, the different combinations of the two variables' proportions generate four specific process phases, called *Emotion-Abstraction Patterns* (Fig. 1).
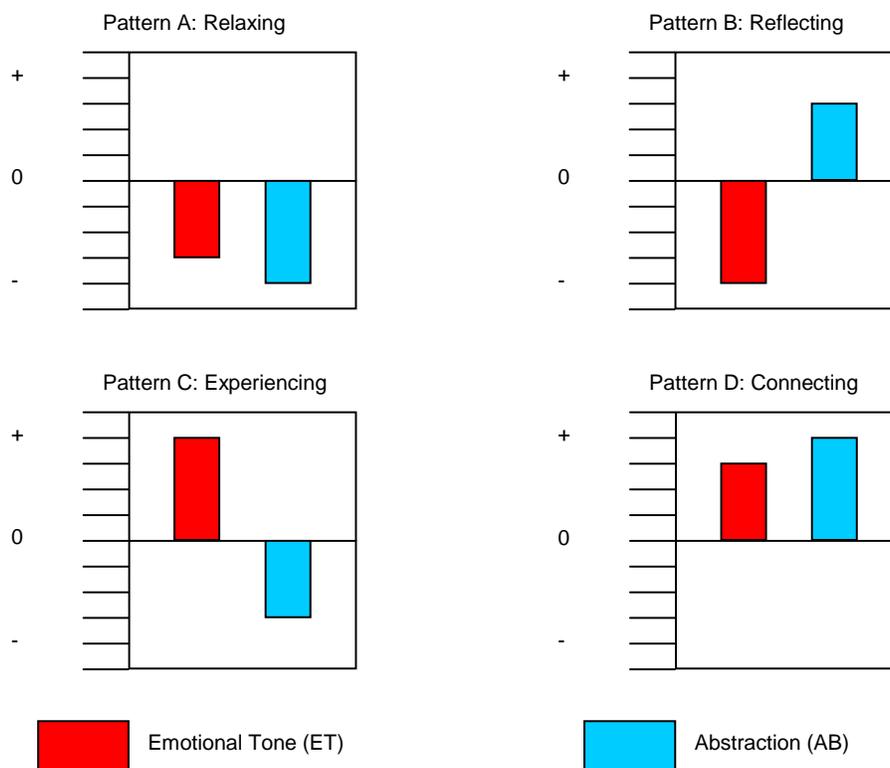
Fig. 1. The four Emotion-Abstraction Patterns.

- Pattern A, *Relaxing*: this pattern is characterized by a low level of Emotional Tone and Abstraction. The talk is a descriptive one, apparently without any direct association with the problematic topics and themes. It can be interpreted as a moment where narration or relaxation takes place.

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- Pattern B, *Reflecting*: this pattern is characterized by a low level of Emotional Tone, and a high level of Abstraction. Here there is a big amount of reflective activity, mostly without any reference to the emotional area. Sometimes the appearance of this pattern can be interpreted as a sign of a defense mechanism, like for example rationalization or intellectualization.

- Pattern C, *Experiencing*: this pattern is characterized by a high level of Emotional Tone, and a low level of Abstraction. Usually it is possible to find this pattern when conflict-related topics or problematic themes are verbally expressed, with no significant reflection upon them. It is a moment in which the subject experiences a highly affective state.

- Pattern D, *Connecting*: this pattern is characterized by a high level of Emotional Tone and Abstraction. This is the most important phase of the process, at least from a clinical point of view: In fact, this is the moment when the patient is having an insightful experience, because he is able to verbalize the positive and/or negative emotions, and at the same time he can reflect upon them in a new way. This pattern marks a working through episode, and so a key moment of the treatment, which is connected with inner change.

Through the analysis of the Emotion-Abstraction Patterns, which appear during the sessions and the entire treatment, it is possible to investigate the emotional-cognitive regulation between patient and therapist, and even within a single patient or subject.

The four patterns described above are supposed to follow a specific temporal sequence, composed by five different stages, that constitutes the so-called *Therapeutic Cycle*: Phase I (Relaxing) → Phase II (Experiencing) → Phase III (Connecting) → Phase IV (Reflecting) → Phase V (Relaxing) (Fig. 2).
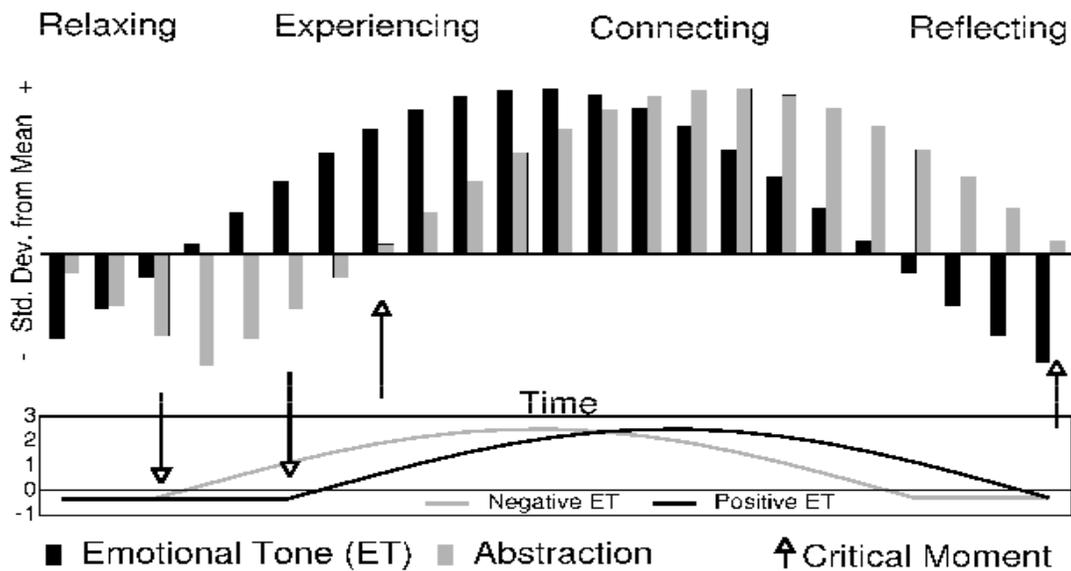
Fig. 2. The prototypical Therapeutic Cycle.

The Therapeutic Cycle prototypically describes the flow of Emotional Tone and Abstraction through time, and the patterns that are generated. The starting point of the cycle is the Relaxing pattern, when the patient is getting ready to dig deep into his own problematic areas. It may represent simply a transition phase or, if the therapy is a psychoanalytic one, it may appear when the patient is engaged in free association.

   Then, there is an increase of Emotional Tone, which leads to an Experiencing pattern. Usually in this moment the patient starts talking about his symptoms and problems, bringing in all the negative feelings that are associated with them.

   After this phase, the Abstraction level goes up too, generating a Connecting pattern. The cognitive and reflective processes – often promoted by the therapist's intervention – allow the patient to rethink his emotional experience in a new way, creating the necessary conditions for insight to show up. As a consequence, the emotional tension slowly flows away, and a Reflective pattern is now produced.

Finally, even the Abstraction level goes down, causing the appearance of another Relaxing phase, which can be the first step for the beginning of another cycle.

Obviously this sequence represents an ideal condition: it is the prototype of a clinically productive work, a theoretical model. The main assumption is that, in order to gain a significant improvement, the patient has to go through these stages and reach a Connecting phase, which is supposed to be directly connected to change (Mergenthaler, 1996a, 1996b, 1998a, 1998b). Therefore, pattern D is hypothesized to be correlated with a good outcome: more Connecting means more improvement, thus facilitating the success of the treatment.

Negative and positive Emotional Tone

The Therapeutic Cycles Model provides also a tool to measure the positive or negative valence of the Emotional Tone variable. It is important to take into account this further distinction, because the role of positive and negative emotions is supposed to be different. Moreover, the shift from a negative to a positive emotional state seems to be clinically relevant, particularly with regard to the outcome (Mergenthaler, 2003b; Lepper, Mergenthaler, 2008).

According to findings derived by experimental psychology research (Isen, Daubmann, Nowicki, 1987; Isen, 1990; Fredrickson, 1998; Spering, Wagener, Funke, 2005), negative emotions have the power to focus the subject's cognitive organization, deepening the perspective, while positive emotions on the contrary widen the array of thoughts and mental representations, so that they "broaden and build" (Fredrickson, 1998).

Mergenthaler (2008) adopts these concepts and integrates them in his clinical approach. From his point of view, "negative emotions provide or prepare pathways to relationship episodes, autobiographical material, and closely related topics" (p. 111), and because of that they have the function to "deepen and provide".

On the other side, the positive emotions, with their widening and broadening power, may play a crucial role in the construction of new representations and cognitive schemas, thus making room for the emerging of insight. The assumption of RMT is that, in any psychotherapy process, therapists and patients "resonate" in such a way

that first a problem is brought in and activated, and then is followed by a problem solving phase (Mergenthaler, 2008).

There is some evidence showing that a change from a negative to a more positive emotional state in the patient may be a signal that something clinically relevant is going on (Mergenthaler, 2003b). Specifically, within this theoretical framework it is possible to pinpoint the appearance of a *Shift Event* when change occurs right before, or at the same time, as a Connecting phase. The Shift Events are "markers of a microprocess of affect regulatory events that, over time, result in change" (Lepper, Mergenthaler, 2008, p. 636). They can be triggered by certain therapeutic interventions, or they can also appear sometimes when an autobiographical story is told by the patient. Other phenomena may cause the appearing of a Shift Event, but at the moment they are still unclear. A recent study (Khodayarifard, 2012) inquired in more detail the concept of Shift Event, and defined five different types of shifts using a qualitative approach, and also confirming the correlation between Shift Events and the therapy outcome using a quantitative approach. More specifically, the findings show that Shift Events initiated in a positive emotional way are much more correlated with good outcome, than Shift Events initiated in a negative emotional way. These results allowed to better understand the nature of the shifts, and their relation to therapy outcome.

Other recent studies in the neuroscience research field have explored the relationship between verbal instructions and neural activity, using brain imaging techniques. The findings seem to be relevant for psychotherapy research, because they can be applied to the therapeutic process, in order to better understand the link between the therapist's interventions and the patient's reaction. For example, Perani et al. (1999) showed that concrete words are processed in the left hemisphere of the brain, and Yomogida et al. (2004) found that the same hemisphere is mainly active when the subject imagines how two objects can interact. Therefore, it may be concluded that all interventions that involve the internal imagery process, like for instance the narration of a specific episode or a dream, have the tendency to activate mainly the left part of the patient's brain. Moreover, a considerable amount of studies show that cognitive skills are highly lateralized: Different activities or stimuli have the

power to activate different hemispheres (Brown, Martinez, Parsons, 2006). This may lead to the conclusion that some psychotherapeutic interventions can cause an asymmetric activation of the patient's brain, or on the contrary they can even undo an existing asymmetric activation. Mergenthaler (2008) suggests that this could be one of the ways in which therapeutic interventions trigger changes in the patient's brain, thus facilitating the development of more adaptive responses. Moreover, Maier (2008) showed that a subject challenged with problem solving tasks is able to perform better if the formulation is expressed with negated positive terms (e.g., "no good"), instead of negative terms (e.g., "bad"). Another study, conducted by Pfeiffer (2006), provided evidence that a stimulation of the left hemisphere results in more positive emotion and, consequently, in an increased capacity to solve problems. These findings support the idea that positive emotions have a broaden-and-build effect on the subject, increasing his cognitive mastery and his problem solving ability.

Although it is reasonable to suppose that positive Emotional Tone promotes a good outcome, and it is therefore to be considered the most relevant aspect, Mergenthaler (2003b) stresses also the importance of a negative Experiencing, which enables the patient to focus on the conflict-related themes. He suggests that the most productive result would be a shift from an emotional state characterized by a high amount of negative and a low amount of positive Emotional Tone, to a Connecting phase in which the patient at the same time experiences a positive and a negative emotional state (Mergenthaler, 2003b). In other words, both the values – positive and negative Emotional Tone – must be above the average, together with a high Abstraction level. This situation would indicate that the patient benefits simultaneously from the "broaden and build" and the "deepen and provide" qualities of the positive and the negative emotions, making a sort of integration of these two opposite tendencies, and furthermore activating the cognitive resources needed in order to reflect upon them.

These theoretical assumptions represent the core of the concept of Shift Event. In psychotherapy research literature, it is possible to find empirical data that supports this notion. In a study including twelve different cases taken from the York I Depression Study (Greenberg, Watson, 1998), six characterized by good outcome and six by poor outcome, Mergenthaler has shown that Connecting word blocks,

made up of both positive and negative Emotional Tone, and generating from a Shift Event phase, tend to occur more frequently within good outcome cases. On the contrary, Connecting word blocks, made up of only negative Emotional Tone, which are considered to be failed shifts, tend to be more frequent within poor outcome cases (Mergenthaler, 2003b).

   Within the scope of this work, we will take into account the emotional regulation of the patient, and the fluctuation of positive and negative Emotional Tone, together with the associated interventions of the therapist, in order to gather some preliminary data that may reveal useful for a better understanding of the relationship between these two clinically significant phenomena.

Narrative Style

Mergenthaler (2005) proposes to analyze the patient's behavioral modification considering the role of *narration*. During a psychotherapy treatment, the patient very often makes use of *narratives* in order to convey inner emotional states. A narrative is an "action translated into words" (Mergenthaler, 1999a, 2005), that is an interpersonal storytelling which describes a sequence of events within a precise and clearly defined time and space framework (Fleischman, 1990; Labov, 1972).

   When the patient is telling a story, the language becomes less abstract and more concrete. It is therefore possible to operationalize the concept of narration, and to measure a third variable which is related to it: The *Narrative Style* (Mergenthaler, 1998a). This variable is totally independent from Emotional Tone and Abstraction, and it is also measured using a computer-aided procedure (see 1.2.2). The Narrative Style is considered to play a crucial role in facilitating the switch from a negative to a positive Experiencing phase. In other words, it is strictly connected to Shift Events (Fig. 3).
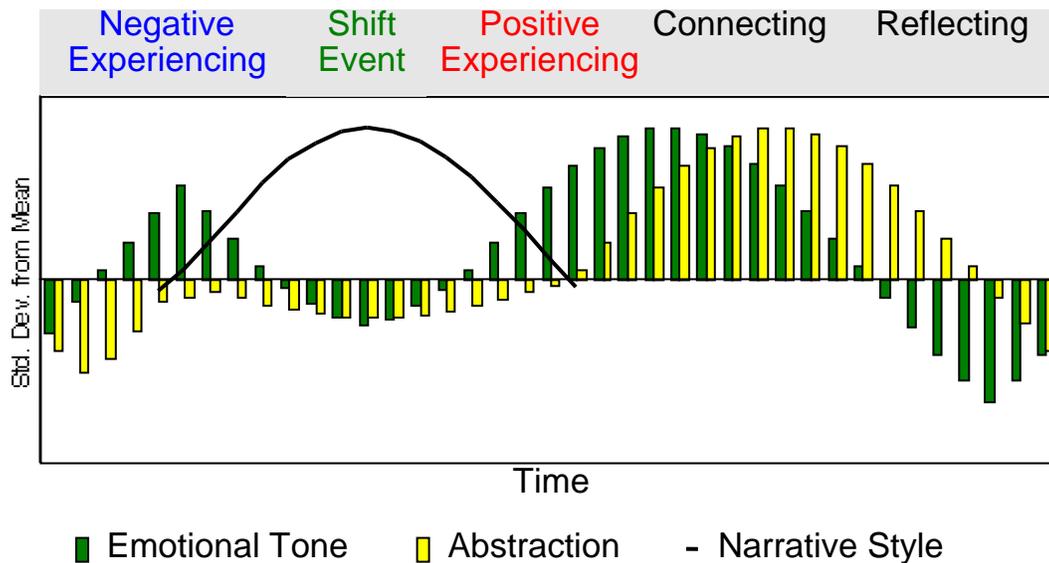
Fig. 3. Narrative Style as Shift Event.

In the prototypical case considered, the negative Experiencing phase causes the patient to tell a narrative, for instance a dream or an autobiographical story. The level of Narrative Style increases, whereas Emotional Tone and Abstraction go down together.

   After the narrative has been told, we have another Experiencing pattern, but this time a positive one: In facts, as neuroscience research suggests, the cognitive process of evoking a narration is likely to activate the left hemisphere, facilitating the emerging of more positive emotional states by means of the "activation spreading" principle (Mergenthaler, 2008). Thus it is possible to conclude that the narrative may produce a Shift Event, which enables the cycle process to continue and reach the Connecting phase.

1.3.2 The computer-aided text analysis procedure

The TCM adopts a computerized method to measure the variables that originates from the classic technique called "Content Analysis". This procedure can be defined as a research tool, especially constructed for making inferences by identifying specified characteristics within a text, in a systematic and objective way (Stone et al., 1966). The two basic assumption of Content Analysis are: (1) The manifest text represents a reliable correlate of the context, so it is possible to make inferences from text to context, and (2) the more a theme is prominent in a text, the more references can be found to it (Mergenthaler, 1996c).

Unlike the classic computer assisted content analysis techniques, in which the object of the measurement is the text itself, the TCM determines operational indicators which allow the mapping of underlying cognitive and emotional states, as they are expressed by the linguistic appearance of the text. Therefore, words are considered to be markers that indicate the presence of a thematic construct (Mergenthaler, 1996a).

This specific computer-aided text analysis procedure is particularly useful for the evaluation of the therapeutic process, because it helps to understand it in two ways: (1) It may pinpoint outstanding sessions and turning points, which can also be closely analyzed afterwards by using either qualitative and quantitative techniques, and (2) it may reveal shifts over time, thus contributing to the understanding of psychological change from a multifaceted perspective (Mergenthaler, Kächele, 1996). Furthermore, this approach has inherent properties that make psychotherapy research easier: it enables high reliability values, it is greatly time-saving, and it also may be helpful to perform tasks that go beyond human raters' conscious cognitive capabilities (Mergenthaler, Kächele, 1996).

To make this kind of methodology possible, researchers must have access to a remarkable number of verbatim transcripts of psychotherapy sessions, in a way that is both efficient and cost-effective. The verbal exchange between patient and therapist, obtained from transcriptions of audio or video tapes, represents what Luborsky and Spence (1971) call "primary data". Process research needs specifically

this type of data, in order to analyze the therapeutic situation and perform a quality management of the process while the patient is still in treatment (Mergenthaler, 1998a). This is why, since the 1968, a major project at the University of Ulm was the development of a substantial computerized databank for psychotherapy transcripts (Mergenthaler, Kächele, 1991). The Ulm Textbank Management System (TMS), created in 1980, represented for many years one of the most important source for primary data, including among others full recordings of long-term psychoanalytic treatments, systemic, behavioral and cognitive-behavioral therapies, and even group therapies.

1.4   The CPIRS scoring system

Nowadays, in psychotherapy research literature, it is possible to find quite a number of instruments that can be useful to rate and measure therapeutic interventions. Some of them simply consist of item lists, with more or less precise definitions, from which the clinician has to select the one that is suitable in a particular case (e.g., McNeilly, Howard, 1991). Other instruments, like the Collaborative Study Psychotherapy Rating Scale (Evans, Piasecki, Kriss, Hollon, 1984), provide the rater with definitions of the items and examples, to clarify the relationship between a theoretical definition and the therapist's actual behavior it intends to measure. Such instruments are particularly useful in efficacy studies, where the items to be scored must be operationally defined. Nevertheless, it seems important to remark that these rating scales generally present two disadvantages: (1) The measures are restricted to a specific manualized treatment, meaning the scoring can be performed only by psychotherapists who are trained in that particular orientation, and applied only on the same kind of material, and (2) the number of items is very large.

Trying to overcome these disadvantages, Trijsburg and colleagues composed the Comprehensive Psychotherapeutic Interventions Rating Scale (CPIRS), which is mainly based on the already existing measures, but collected in a way that provides the tools required in order to study nearly all the different psychotherapies, as they are actually conducted in clinical practice (Trijsburg et al., 2002; Trijsburg et al., 2004).

As the authors describe it, the CPIRS was designed "to cover several orientations and to do so efficiently by using a smaller number of items than typically used in adherence studies. The CPIRS consists of interventions derived from the main psychotherapy orientations, including the client-centered, psychodynamic, behavioral, cognitive, group psychodynamic, and systemic orientations. Apart from these orientations, interventions and attitudes derived from the concept of common factors were included" (Trijsburg et al., 2002, p. 289).

1.4.1 Development of the rating scale

The authors decided to select the items by screening the literature published after 1980, searching for questionnaires and rating scales. After having checked all the empirical studies conducted with the instruments found, they finally ended up with 81 items, which were taken from several adherence measures (Table 1).

Table 1. Adherence measures used for the item selection of the CPIRS (Trijsburg et al., 2002).

Measure	Studies
Adherence Measures for Process-Experiential Psychotherapy	Greenberg et al., 1994; Greenberg, Watson, 1998
Collaborative Study Psychotherapy Rating Scale	Carroll, Nich, Rounsaville, 1998; DeRubeis, Feeley, 1990; Evans et al., 1984; Hill, Ogrady, Elkin, 1992; Hollon et al., 1998; Startup, Shapiro, 1993a, 1993b
Groepstherapie Interventie Stijl-Vragenlijst	Lietaer, Dierick, 1994, 1998
Group Sessions Rating Scale	Kaminer, Blitz, Burleson, Kadden, Rounsaville, 1998
Interpretive and Supportive Technique Scale	Ogrodniczuk, Piper, 1999a, 1999b
Methodiekenlijst	Trijsburg et al., 1999
Minnesota Therapy Rating Scale	DeRubeis et al., 1982
Psychotherapy Process Q-set	Ablon, Jones, 1998; Heaton, Hill, Edwards, 1995; Jones, 1985; Jones, Cumming, Horowitz, 1988; Jones, Parke, Pulos, 1992; Jones, Pulos, 1993
Sheffield Psychotherapy Rating Scale	Shapiro, Startup, 1990, 1992; Startup, Shapiro, 1993a, 1993b
Therapeutic Procedures Inventory-R	DeRubeis, Feeley, 1990; Heaton et al., 1995; Jones et al., 1988; McNeilly, Howard, 1991; Orlinsky, Lundy, Howard, Davidson, O'Mahoney, 1987; Shapiro, Firth, 1985; Startup, Shapiro, 1993a
Therapist Behavior Rating Scale	Hogue et al., 1998; Hogue, Rowe, Liddle, Turner, 1994
Verbal Response Mode	Startup, Shapiro, 1993b; Stiles, Shapiro, 1995; Stiles, Shapiro, Firth-Cozens, 1988

It is possible to observe that, in the considered literature, therapist's interventions are often grouped. In the CPIRS, the items were sorted on the basis of their specificity for all the main psychotherapy approaches, thus generating 15 different categories of intervention (Table 2).

Table 2. Categories of interventions.

Category of interventions	Number of items
Facilitating (1)	5
Authoritative Support (2)	4
Coaching (3)	7
Directive Process (4)	5
Structuring (5)	5
Behavioral (6)	4
Cognitive (7)	13
Experiential (8)	8
Experiential Procedures (9)	2
Psychoanalytic Interventions (10)	7
Psychodynamic (11)	4
Strategic (12)	3
Group Dynamic Interventions (13)	5
Systemic Interventions (14)	4
Other Interventions (15)	5

To choose whether an intervention was highly characteristic of a specific orientation or not, the authors applied different criteria, depending on the statistical analyzes

used. For example, by factor analytic studies it was possible to select items that showed a high loading on the relevant factor or component and no substantial loading on the other ones, whereas by comparative studies they could choose the items which yielded the largest differences between treatments (Trijsburg et al., 2002).

Then, all the collected items were written down on cards. The ones that presented a very similar content were merged together. If different studies described different aspects of the same intervention, these aspects were combined in the definition of the item. A great effort was made in order to clarify ambiguous and idiosyncratic items, through the reformulation of the definitions and the introduction of specific examples.

Although the first version of the scoring manual was written in Dutch, an English version was prepared and it is currently available for research purpose (Trijsburg, 2005). It consists of an introduction, where general rules for rating are specified, and a larger section containing all items definitions, descriptive characteristics of interventions, similarities and differences with other relevant items, positive and negative examples, and anchor points for scoring. The definition and the descriptive characteristics of every item were taken from the respective rating scale's scoring manual. If no manual was available, they were extracted from the literature and adapted so that they could be understood unambiguously.

The interventions usually classified as "common factors", which may be found in any psychotherapy, were grouped as Facilitating. Experiential interventions are focused on affect-based elaboration of the content and on emotional experiencing. The Psychodynamic category includes interventions focusing on the management of resistance and on hidden content. Directive Process is based on the therapist's active role in structuring the treatment, whereas Behavioral includes interventions derived from learning theory. Cognitive is the category for interventions belonging to the standard cognitive therapy. Group Dynamic includes interventions related to group processes in general, and Systemic interventions focus on the relational system as a whole.

As the author specified in the manual (Trijsburg, 2005), the scoring of all the interventions is concerned with the therapist's behavior. The rater should only take into account what the therapist is trying to do, regardless of the success or failure of

his action. In facts, from this point of view, the patient's reaction to a specific intervention is irrelevant. It should also be pointed out that not every intervention needs to be rated: Only the therapist's interventions which are included in the manual have to be scored. Nevertheless, the basic rule is to rate all of them, if possible. Some interventions are very unlikely to appear within certain kinds of treatment (e.g. Group Dynamic or Systemic interventions in an individual therapy), although all the 81 items, that constitute the CPIRS, should always be judged.

1.4.2 Reliability and validity of the rating scale

The first study conducted by Trijsburg and colleagues showed that the inter-rater reliability of the CPIRS is good. In facts, they report an overall mean Kappa value of .50, both among psychotherapists (.50, median = .53) and student raters (.49, median = .49) (Trijsburg et al., 2002). The same study showed also that, in order to gain sufficiently high reliability values, the raters need to be trained. More precisely, the authors recommend at least a 3 hours session for any group of interventions (i.e. Facilitating, Experiential, Psychodynamic, Directive Behavioral, Cognitive, Group Dynamic, and Systemic Interventions). The scoring manual (Trijsburg, 2005), with all the included definitions and practical examples, is intended to be the primary tool to learn how to rate all the therapist's interventions that one can find in a transcript.

The second study (Trijsburg et al., 2004), focused more on the construct validity of the CPIRS. It was shown that the scale can discriminate between different psychotherapeutic orientations. In fact, given the study's findings, it was possible to conclude that Behavioral and Cognitive interventions were characteristic of the behavioral and cognitive orientations, Experiential interventions of the client-centered and experiential ones, whereas Psychoanalytic and Psychodynamic interventions were characteristic of the psychoanalytic-psychodynamic orientations. Regarding the *Facilitating* interventions, which from the authors' point of view represent properly the so-called "common factors", the findings seem to suggest that they may appear to a

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more or less equal degree in all types of treatments (Trijsburg et al., 2002), even though it also emerged from further study that this kind of interventions is more related to the client-centered and experiential orientations than to the other ones (Trijsburg et al., 2004).

The authors conclude that all the interventions belonging to the following categories: Behavioral, Cognitive, Experiential, Psychoanalytic, Psychodynamic, Strategic, and Experiential Procedures, can be viewed as specific factors, thus based on psychotherapy's theories and assumed to be effective ingredients of the treatment (Karasu, 1986). The other ones may be viewed as common factors (Arkowitz, 1992; Lambert, Bergin, 1994), which have the power to facilitate the therapeutic process, especially contributing to a positive working alliance. Nonetheless, it is interesting to point out that Facilitating interventions seem to be more typical of open-explorative and person-oriented treatments, while Authoritative Support, Coaching, Directive Process, and Structuring interventions seem to be more related to prescriptive and symptom-oriented therapies (Trijsburg et al., 2004).

1.5   The Cognitive therapy

Cognitive therapy is a psychotherapy approach, founded by Aaron Beck in the 1960s. It can be seen as a subtype of Cognitive-behavioral therapy, like Albert Ellis's Rational-emotive therapy (RET, 1955), Kelly's personal construct therapy (1955), Guidano's constructivist cognitive therapy (1984), and Safran and Segal's cognitive-interpersonal therapy (1990). Generally speaking, the label "cognitive-behavioral" was proposed for all approaches that tried to integrate both Freud's assumption, that behavior is determined primarily internally, and Skinner's idea, that behavior is determined primarily externally (Ford, Urban, 1998).

The main assumptions of all cognitive approaches are: (1) Cognitive processes play a mediational role; (2) cognitive appraisals of events can affect people's responses to those events; (3) cognitive activity can be monitored and changed; and (4) changes in

people's assumptions, interpretations, and thoughts can lead to changes in their emotions and actions (Dobson, Block, 1988; Kazdin, 1978).

Cognitive therapies have always advocated the use of empirical investigations to evaluate theories and methods, and today in psychotherapy research literature it is possible to find many studies that prove the efficacy of cognitive treatments (Chambless et al., 1998; Chambless, Ollendick, 2001; DeRubeis, Crits-Christoph, 1998; Dobson, 1989; Jiménez-Murcia et al., 2007).

1.5.1 The conceptual model

Beck's Cognitive therapy, like Ellis's Rational-emotive therapy, proceeds from a dualist ontology, a realist epistemology, and a rationalist view of knowledge: Body and mind exist, and they are seen as two different entities; reality is independent from our perceptions of it, and the environment is reliably given to the senses; knowledge is valid by mean of reason, and the higher cognitive and rational processes exercise supremacy over feelings and actions. Therefore, within this theoretical framework, cognition is the key concept, because human functioning is conceived as organized and regulated primarily by cognitive processes (Dobson, Block, 1998). Even though Beck identifies the person as the main focus and the primary unit of concern, and conceives it as a complex organization of biological, psychological, and behavioral components, in defining the cognitive therapy's conceptual model, he explicitly emphasize the role of cognitive-affective functioning in determining the interaction between person and environment (Beck, 1967). Beck and Ellis agree on the idea that cognitions, like beliefs, and cognitive processes, like reasoning, problem solving, and decision making determine people's emotional responses and actions. Among them, belief is the most important concept of the model (Ford, Urban, 1998). Beliefs and schemas are seen as the primary determinants of emotions and actions. They represent hypotheses or models, adopted or created by the person over his life course, that can be challenged and are potentially testable. Since they are descriptive, anticipatory self-evaluative propositions, as for instance "I am a bad person", or "If I

let my mother down, she won't love me anymore", perform cognitive regulatory functions, thus generating emotional and behavioral consequences, both in beneficial (self-helping) or detrimental ways (self-defeating). So, according to Beck's and Ellis's theoretical approach, different kinds of evaluative thoughts arouse different emotional states.

The cognitive conceptual model takes also into account the role of emotions and affective experience as regulatory mechanisms. Beck and Ellis consider emotions to be distinctive and identifiable events, or processes. They divide them into two different groups, positive and negative, assuming that hedonistic principles govern human functioning. Positive emotions refer to subjective states such as pleasure, relief, or satisfaction, whereas the negative ones refer to displeasure or dissatisfaction. However, emotions are considered to be rarely pure, as they are seen as part of the biological, cognitive, and behavioral patterns (Ellis, 1986). Emotions, thoughts, and behaviors are not separate categories of events, but rather interwoven patterns, continually interacting and affecting one another.

Cognitive therapy's focus of interest is the content of consciousness, that includes beliefs, thoughts, and emotions. Nevertheless, the underlying schemas are often unconscious (Beck, Freeman, 1990). So, in order to allow the change processes, habitual beliefs and schemas must be first consciously verbalized through introspective analysis. Affective experiences can reveal those unconscious cognitions, allowing one person to analyze and modify them (Ford, Urban, 1998).

1.5.2 The procedural model

The main assumption of all rationalist cognitive therapies is that human beings have the tendency to adopt coherent intra-person and person-context patterns of functioning. Beliefs and schemas function to integrate perceptions, emotions, and actions into coherent patterns. Therefore, accurate perceptions and logical thinking produce effective behavior, adaptive emotions, and appropriate feelings. On the other hand, deviations from the principles of careful empirical observation and rationality

may lead to distorted, irrational, and absolutistic beliefs about the person himself, other people, or the future. Both Ellis and Beck agree on the idea that these cognitive errors are the primary source of patients' dysfunctional behavior. More specifically, habitual irrational evaluative thoughts, along with the emotions they activate, are considered the basis for all psychopathology (Ellis, Dryden, 1987). Consequently, a key strategy in cognitive therapy is to teach patients to recognize, monitor, and evaluate their schemas and beliefs, and to help them modify the maladaptive ones.

According to the principles of the conceptual model, in order to change the dysfunctional cognitive patterns two conditions must be present: (1) The person must become aware of the schemas and beliefs that need to be changed; and (2) the cognitive pattern must be perturbed by an encounter with discrepant information or experience (Ford, Urban, 1998). The role of the therapist is to guide the patient through this process, using specific interventions and techniques. The goal is to change the patient's personal conceptual and propositional models, that produce maladaptive patterns and dysfunctional ways of processing information.

Another important ingredient of psychotherapy change concerns the affective experiencing. Ellis and Beck assume that emotions are aroused by schemas and beliefs: For instance, depressed people have a constant negative view of the world, of themselves and their future, and this dysfunctional cognitive pattern generates negative emotions, such as sadness, and even physiological states like anergia. Changing this maladaptive pattern of functioning produces immediate effects on the affective experience of the person, and these emotional consequences play a key role in acquiring and maintaining the changed patterns. If the person becomes able to process information accurately, after having tested his dysfunctional schemas and beliefs, he can adapt effectively to the environment, because he is able to generate cognitive-affective-behavioral patterns that have maximal functional utility. So, even though cognitions are the main focus of cognitive therapy, a treatment is successful only when the change of the cognitive patterns corresponds to a desired change in the patient's affective experience and behavior (Freeman et al., 1990).

Cognitive therapy has always been labeled as an eclectic and multimodal approach: Some of the techniques applied by the cognitive therapist have been borrowed from

other approaches, and used when needed during the treatment (Ellis, Dryden, 1987). The emphasis is on the therapy's strategy tasks, rather than on the specific techniques: A high level of procedural flexibility is desirable, because the therapist's interventions have to be adapted to patients' life circumstances. This is why Beck and Ellis argue that specifying a standardized treatment is a mistake: The design of treatment has to be specifically made for the patient's unique situation and his personal ways of integrating and using information (Ford, Urban, 1998).

1.6   Therapist's interventions and psychotherapy change

Despite the fact that, in psychotherapy research, the equivalency paradox still holds true (Luborsky et al., 2002; Wampold, 2001), it is not possible to conclude that common factors alone determine psychotherapy change. A review of outcome research shows that specific therapeutic techniques seem to account for from 5% to 10% of the outcome variance, whereas common factors, such as the quality of the working alliance established with the patient, account for from 7% to 30% (Dazzi, 2006). These results suggest that both specific and unspecific factors, along with their mutual interaction, contribute to psychotherapy outcome. The role played by the therapist's techniques, and the impact that those interventions have on the patient's cognitive-emotional state are still to be clarified. It is also important to notice that, even though clinicians frequently consider the creation of a good working alliance with the patient as an important therapeutic task, and possibly a prerequisite of the treatment, "when training young therapists, most instructors do not ask trainees to focus only on the alliance, and most also train their students in the skillful implementation of therapeutic techniques" (Barber, 2009, p. 3). This fact stresses the idea that most clinicians rely mainly on the power of specific techniques in bringing about therapeutic change, even if looking at psychotherapy research literature, the role of specific factors is still unclear and somehow controversial. As Kazdin clearly states, "after decades of psychotherapy research and thousands of studies, there is

no evidence-based explanation of how or why even the most well-studied interventions produce change, that is, the mechanisms though which treatments operate" (Kazdin, 2009, p. 418).

According to RMT, therapeutic interventions have the power to directly influence the patient's cognitive, emotional, and behavioral regulation, so that a pathological regulation system can turn into a more adaptive one (Mergenthaler, 2008). This statement appears to be coherent with the principles of cognitive therapy (see §1.5.2), and also with recent evidence coming from neuroscience research (see §1.3.1). Mergenthaler (2008) suggests that the therapist's interventions activate certain pathways in the patient's brain, changing its ways of functioning. This process leads to changes in the cognitive-affective-behavioral patterns of the patient, replacing a pathological pattern with a more adaptive one. Moreover, given the empirical findings on the asymmetry of the brain, and the lateralization of positive and negative emotions (Wagner, Phan, Liberzon, Taylor, 2003), one can conclude that the therapist naturally tend to choose interventions to be used in a way that right hemisphere activation will be followed by left hemisphere activation (Mergenthaler, 2008). It is also possible to find some evidence supporting the idea that psychotherapeutic interventions are correlated with Connecting patterns (Nicolò et al., 2000; Fabi, Mergenthaler, 2004; Mergenthaler, 2003b). Walter (2007) investigated the relationship between four types of therapeutic interventions and the patient's emotion-abstraction patterns: Coherent with the theoretical assumptions, challenge to facts triggered a Relaxing pattern, challenge to cognition triggered a Reflecting pattern, challenge to emotion triggered an Experiencing pattern, and challenge to integration of both emotion and cognition triggered a Connecting pattern. Another study conducted by Limberg (2008) showed that "encouraging patient to reflect" was an intervention that occurred significantly more often before a Connecting phase, whereas "asking patient for facts" was significantly more frequent after a Connecting phase.

1.7   Aims of the study

The main assumptions of RMT are coherent with the principles of cognitive therapy, as developed by Beck and Ellis: The therapist has an active role in the process of changing the patient's maladaptive ways of functioning, and this process is activated by specific techniques. The role of common factors, such as the patient's motivation for therapy or the therapeutic alliance is not ignored: Therapeutic interventions and unspecific factors are considered as mutually co-determined (Lepper, Mergenthaler, 2008). Both RMT and cognitive therapy's theoretical models emphasize the concept of cognitive-emotional regulation, by stating that it constitutes the main focus of the treatment. Cognitive mastery and affective experiencing are seen as parts of the same complex organization, that represents the basis of a person's way of functioning. The most important goal of the therapy is to help the patient turn his pathological patterns into more adaptive ones, and this change allows him to experience less disruptive and painful emotions (Ellis, 1986). The therapist's typical strategy is first to elicit patients' descriptions of specific day-to-day behavior episodes, when unpleasant emotions and maladaptive behaviors occur (Ford, Urban, 1998). This phase seems to correspond to what RMT calls the deepen-and-provide state, when the narration of negative autobiographical memories activate the right hemisphere of the patient's brain, and negative emotions arise (Mergenthaler, 2008). Then, the therapist actively encourages the patient to examine accurately his cognitive patterns, schemas, and beliefs, and to test them in order to find irrational ways of considering his life facts. This is also the moment in which the therapist renders explicit the links between the dysfunctional cognitions and the unwanted affective experience (Ford, Urban, 1998). Coherent with RMT assumptions, it is possible to argue that this is a key moment of the treatment: Not only is the patient engaged in a highly emotional state and the reflective processes are activated, thus implying the presence of a Connecting pattern, but also one could expect that both negative and positive emotions are present, due to the therapist's cognitive interventions. The patient gains access to the broaden-and-build phase, assured by the increased amount of positive emotions, and this condition facilitates the problem solving tasks. Gradually, negative emotions should

go down, as the patient becomes more and more able to accommodate the new information, and to formulate more effective patterns of functioning (Beck, 1995).

The present study was conceived and conducted in order to provide some preliminary data for the aforementioned assumptions. Although some authors recently tried to inquire the relationship between the therapist style and the patient's emotion-cognitive regulation (see §1.6), and it is also possible to find some empirical evidence on the relation between the use of cognitive therapy's techniques and psychotherapy outcome (DeRubeis, Feeley, 1990), there is still a lack in psychotherapy research on the role of specific interventions: Generally speaking, it is still unclear how the peculiar techniques of a psychotherapy school can be related to the patient's response, especially with regards to the reflective processes, the affective experiencing, and the emerging of positive and negative emotions.

Another aim of the present study is to empirically test the specific theoretical functions of cognitive interventions, as they were defined by Beck and Ellis: Using TCM's methodological approach, it is possible to analyze the emotion-cognitive status of the patient in every moment of the treatment, allowing the researcher to inquire the emotional and cognitive impact that a particular category of therapeutic interventions has on the patient. Moreover, RMT's approach, with its emphasis on the role of positive and negative emotions, suggested the identification of three kinds of Connecting Types, each defined by a particular configuration of positive and negative Emotional Tone. The associations between these patterns and the categories of interventions were measured too.

2. MATERIAL AND METHOD

2.1 Clinical sample

The present study makes use of a single-case design. The clinical material is composed of an entire psychotherapy treatment, made of 24 sessions. All the sessions were fully recorded and transcribed. This clinical material was provided by courtesy of the colleagues at the *III Centro di Terapia Cognitiva* (Rome).

The patient, whose name has been coded as "Mag", is a 38 year old Italian woman. The diagnosis, according to DSM IV-TR, is Borderline Personality Disorder (APA, 2000). The therapy, a standard cognitive treatment conducted by an expert clinician, lasted 10 months (Nicolò et al., 2000).

At the beginning and at the end of the treatment several assessment scales were applied in order to confirm the DSM IV-TR diagnosis, and to test the outcome: Particularly, the researchers of the *III Centro di Terapia Cognitiva* used the GAF (Global Assessment of Functioning; APA, 2000), and also two symptoms rating scales: the BPRS scale (Brief Psychiatric Rating Scale; Overall, Gorham, 1962), and the AMDP scoring system (Arbeitsgemeinschaft für Methodik und Dokumentation in der Psychiatrie, 1979). Moreover, to examine the therapeutic process, two additional scales were applied: The Grid of Problematic Conditions (Semerari et al., 2003a), and the Metacognition Assessment Scale (Semerari et al., 2003b).

Given the data provided by the aforementioned measures, the treatment was classified as a good outcome case (Nicolò et al., 2000). Table 3 shows the GAF, BPRS, and AMDP scores obtained by the patient before and after the treatment.

Table 3. Scores obtained using several assessment scales before and after the treatment.

Moment	GAF	BPRS	AMDP
Before treatment	65	45	35
After treatment	80	31	10

These data confirm that the treatment was effective for the patient: The GAF score is higher at the end of the treatment, thus indicating a significant improvement in her overall level of functioning. Both the symptoms rating scales show lower levels after the treatment, which is considered to be proof of the symptoms improvement. Furthermore, the data provided by the two process scales demonstrate the efficacy of the considered treatment. More specifically, the analysis conducted by using the Grid of Problematic Conditions showed, starting from session n. 15, a stable shift from negative to positive of the item "Mastery", whereas the items "Anger" and "Guilt" shifted from positive to negative. The analysis of the patient's metacognitive functioning, conducted by using the Metacognition Assessment Scale, yielded findings showing a remarkable increase at the end of the treatment of the patient's metacognitive resources, and in particular of the "Differentiation", "Integration", and "II and III Level Strategies" constructs.

The follow-up interview, performed 4 years later, confirmed the improvement of the patient's global level of functioning (Nicolò, 2000).

2.2   Text data

All the recordings of the 24 sessions, which constitute the corpus of the treatment, were transcribed following the transcription standards developed by Mergenthaler and Stinson (1992), as they were adapted to the Italian language (Mergenthaler, 1999b).

Using these transcription rules it is possible to obtain verbatim transcriptions of the original audio or video recording, taking into account interruptions, pauses, speech overlappings, and also para-verbal and non-verbal aspects. Due to privacy reasons, all proper names and words referring to actual places were replaced with other ones, chosen randomly.

2.3   Instruments and measures

All the transcribed material was analyzed with two different methods. Regarding the therapeutic interventions, the CPIRS rating scale (Trijsburg et al., 2002; Trijsburg et al., 2004; Trijsburg, 2005) was used, in order to identify and categorize the verbal interventions made by the therapist. It was decided to score each and every intervention, following the rules contained in the English version of the manual (Trijsburg, 2005).

Regarding the emotional and cognitive regulation of the patient, the Therapeutic Cycles Model (*TCM*; Mergenthaler, 1996a, 2008) was applied, in order to study the transcripts from a linguistic point of view. The TCM provides the tools to perform a computer-assisted analysis of the transcripts, so that it is possible to pinpoint the clinically relevant moments within the sessions that need to be examined. All the transcribed material was analyzed using CM software. The scoring unit for all quantitative analyses is the standard CM word block, made of 150 words.

2.3.1 The CPIRS scoring system

The CPIRS is made of 81 different items, each of them corresponding to a precise therapeutic intervention. The items are grouped into 15 different categories, based on the specific kind of approach in which they are typically used (see Appendix A).

The rules and the directions for rating are listed in the English version of the manual (Trijsburg, 2005). Every item is clearly defined, and the definition should be always checked before scoring an intervention. The manual is also provided with coding examples, especially for items that could be difficult to distinguish.

The main rule of the scoring procedure is to rate each and every therapeutic intervention. However, there are very rare cases in which scoring is not possible (e.g., when the therapist greets the patient, or when he says that he is going to stop the recording device). In such occurrences, the rater simply has to leave the item blank on the scoring sheet.

The focus of the scoring is always the therapist's behavior, which has to be clearly separated from the patient's reaction. The success or the failure of the intervention should not be taken into account, since the goal of the rating procedure is to identify what the therapist is trying to do. When two different kinds of intervention occur within the same speaking turn, the most important one should be considered and rated.

Double scoring is generally not supported. An exception regards the so-called "Global Judgments" interventions, or "GJ" (number 1, Empathy; number 2, Acceptance; number 3, Involvement; number 4, Warmth; number 5, Rapport; number 6, Collaboration; number 14, Active Control; number 16, Didactic Approach). These items can be scored alone, or additionally to any kind of other item. However, given the purpose of the present study, and the fact that the double scoring system was suggested in the manual as an optional procedure, it seemed reasonable to skip this step and use the regular rating system.

All the scoring of the 24 sessions was performed by the author of the present work, a psychologist with some experience in both clinical practice and research. The items were coded directly on paper, in the transcript, and then also marked in the electronic version of the transcripts.

Within the scope of this work, the coding was performed using the CPIRS macro-categories classification, thus indicating for each therapeutic intervention its category (i.e. from 1 to 15) rather than its item number (i.e., from 1 to 81). This procedure allowed the classification of all the therapist's utterances into homogeneous groups,

based on the specific nature and purpose of the intervention (i.e., Facilitating, Behavioral, Cognitive, Experiential, Strategic interventions, etc.).

Rater training and inter-rater reliability

In order to determine whether the author of the present study is a reliable judge for CPIRS, an inter-rater reliability test was performed. A total number of three raters took part at the training as well as at the test: The author, and two other clinical psychologists. Each judge had some experience with clinical work and empirical research. All the judges are Italian native speakers, so it was possible to rate the material avoiding any kind of language problems.

The first phase of the training, for all of the three judges, was accomplished by carefully reading and studying the English version of the scoring manual (Trijsburg, 2005). Then, each rater applied independently the CPIRS to the first session of the treatment. Eventually, the three raters made a comparison of their work, discussing similarities and differences, and trying to reach a formal consensus about the chosen items, especially the unclear ones.

After this training session was completed, every judge assessed independently a total sample of 12 sessions (1, 2, 3; 6, 7, 8; 12, 13, 14; 19, 20, 21), taken from the entire therapy. It should be noted that session 1 was scored once again independently by the judges, after having reached the formal consensus during the first part of the training. The sample was chosen picking up sessions which covered different phases of the treatment, in order to minimize the selection bias. A total number of 1217 interventions were scored independently by each rater. For the purpose of the consensus test, it was decided to focus on the higher-level categorization of interventions included in the CPIRS (e.g., Facilitating, Cognitive, Psychodynamic, etc.), rather than on the single item. In other words, every judge scored the interventions indicating only their specific category.

Among the three raters, two of them decided to perform the scoring using the computer, putting the code in the electronic text document right after every

intervention of the therapist. The third judge decided instead to work directly on paper, writing the code manually.

The inter-rater agreement was measured using Cohen's Kappa Coefficient (Cohen, 1960). The results are shown in Table 4.

Table 4. Measures of agreement among the three raters: F, S, and V.

Raters	Kappa value	N
F * S	.741	1217
F * V	.711	1217
S * V	.681	1217

The Kappa values ranged from .681 to .741, which is considered to be good. Moreover, rater F, namely the author of the present study, reached the highest Kappa value with the other raters. Given these data, one could assume that F is a reliable judge using the CPIRS. Thus the remaining sessions of the treatment were scored by him.

2.3.2 The Therapeutic Cycles Model

The TCM is a model of the psychotherapy process that allows a comprehensive interpretation of clinically relevant phenomena based on empirical data. Because of that, it provides the researcher with a methodological procedure that makes use of a computerized analysis of the transcripts. This kind of analysis relies on the concept of "marker".

The marker approach, as it was implemented in the Therapeutic Cycles Model, assumes that words represent linguistic indicators of underlying psychological states,

thus revealing the presence of a thematic construct in a specific moment (Mergenthaler, 1998a). As a consequence, the method makes use of word lists that are thematically ordered into theoretically grounded categories. These lists are called "dictionaries". The computer's task is mainly to scan the text under analysis, searching for the words contained into the dictionaries, counting them, and consequently yielding the frequency distribution of the associated categories. So, a particular word in the analyzed text that matches an entry of the dictionary is seen as a marker, identifying the presence of a specific thematic aspect.

Since the TCM considers basically two different variables, Emotional Tone (ET) and Abstraction (AB), the dictionaries included in the aforementioned method are respectively a list of words with a highly emotional valence, constituting the Emotional Tone dictionary, and a list of words referring to abstract concepts and categories, constituting the Abstraction dictionary.

It is useful to notice that in psychologically oriented research the construct of emotion has very often been dealt with in relation to the construct of concreteness. In fact, a wealth of findings supports the correlation between these two concepts. As a consequence, the two dictionaries need to be statistically independent from each other: A word is allowed to be either in the Emotional Tone or in the Abstraction dictionary, but not in both of them. So, if the non-coded words are also considered as a third category, full text coverage should be achieved, in order to make the statistical analysis of the text easier and more transparent (Mergenthaler, 1998a).

In some instances, it is possible to observe a coincidence of Emotional Tone and Abstraction in the same specific word form. Since Abstraction was shown in a pilot study to have less text coverage than Emotional Tone, this kind of word has to be included in the Abstraction dictionary, but using a special scoring label that allows it to be identified as an "abstract-emotional" word.

The dictionaries have been developed in many languages, so that it is now possible to analyze English as well as German, Italian and Spanish texts. For the purpose of this study, only the Italian version of the dictionaries was used.

Emotional Tone dictionary

The investigation of the patient's inner emotional state is one of the most relevant topics in psychotherapy. The Therapeutic Cycles Model is especially concerned about the verbal expression of the emotion, which may also not completely overlap with the actual experienced emotion (Mergenthaler, 1998b). Within this theoretical framework, emotion is understood as the "emotional tone of a text", a concept that was taken from literary and linguistic research (Anderson, McMaster, 1986).

The first version of the dictionary was compiled using various word lists, which were taken from the literature, like the Regressive Imagery Dictionary (Martindale, 1975). Then a host of English texts stored in the Ulm Textbank was examined, searching for words with an emotional valence.

To be included in the Emotional Tone dictionary, a word has to meet certain criteria (Mergenthaler, 1998a):

- The word must be classified into at least one of the following dimensions: (1) Pleasure-Displeasure; (2) Approval-Disapproval; (3) Attachment-Disattachment; (4) Surprise (Sandhöfer-Sixel, 1988).
- The word is excluded from the dictionary if it is concerned with concrete aspects of sensory reference (e.g. "heart", "warm", "cold", etc.). This way it is possible to exclude concrete words, which are often used for the metaphorical expression of emotions. Moreover, it is possible to avoid the indirect creation of a negative correlation between the Emotional Tone and the Abstraction dictionaries.
- The word is excluded if it has multiple meanings and occurs frequently. More generally, if a word needs to be disambiguated, it can be done by inserting an appropriate marker.

The Therapeutic Cycles Model takes into account the density of emotional words within a given text unit, in order to make assumptions on the underlying emotional state of the subject who is verbally expressing it. The method allows the

differentiation between the positive or negative valence of the emotion words, thus providing further information about the quality of the emotional experience.

The current version of the Italian Emotional Tone dictionary is made of 6473 entries, including inflected forms, classified as positive (N = 2244) or negative (N = 4229), depending on the emotional valence. According to the scoring rules, a word classified as emotionally positive is code-numbered in the dictionary as 1, whereas a word classified as negative is code-numbered as 2.

Abstraction dictionary

As for Emotional Tone, Abstraction is assumed to vary in intensity over time, and its flow is measured by the TCM. It measures the amount of cognitive-reflective processes, as they are identified in the text by the presence of verbal markers. These specific markers are abstract nouns, indicating abstract concepts.

Originally the Abstraction dictionary was compiled through the use of a suffix analysis of all the English words contained in the Ulm Texbank's material. It was shown by Gillie (1957) that, for what concerns the English language, there are specific word endings (e.g., "-ness" and "-ity") which constitutes a reliable index of abstraction, since they appear to be typical for abstract word forms.

The act of thinking and reflecting about the experience is a psychotherapeutically relevant skill, and the Therapeutic Cycles Model assumes that it is possible to evaluate it by computing the number of abstract words: "When we experience something, we might, for example, speak of *being tender*. When we think about the experience, we speak about *tenderness*. Linguistic abstraction is a process by which new word forms are created by adding a limited number of endings like *–ness* or *– ment*, thereby expressing thought processes" (Buchheim, Mergenthaler, 2000).

Abstract-emotional words (like "love", "friendship", "ugliness") are also included in this dictionary.

The current version of the Italian Abstraction dictionary includes 2793 words. The above mentioned abstract-emotional words are also classified with regard to the

emotional valence as positive (code-numbered as 4 in the dictionary), or negative (code-numbered as 5), while the neutral abstract words are code-numbered as 3.

Positive and negative Emotional Tone

Since the emotionally relevant words in the Emotional Tone dictionary, as well as in the Abstraction dictionary, are classified from the point of view of the valence, that is positive or negative, one can also measure and observe the fluctuation of the emotional state of the subject. Therefore, the Emotional Tone variable can be split into two different categories: positive ET (pET) and negative ET (nET). This procedure is particularly useful when the researcher is interested in the identification of the emotional state of the patient.

The CM software

In order to perform the computerized analysis of the transcript, according to the TCM model, a dedicated software was created. This program is called "CM", and it was developed by Mergenthaler and his colleagues at the Department of Informatics in Psychotherapy, of the University of Ulm.

  The CM software, basically a user-friendly and updated version of the TAS/C program, takes as an input the electronic version of the transcript, typically a .txt or a .doc file. It performs a scan of the text, searching for the words that match the entries contained in the inbuilt dictionaries, and computing them. Depending on the nature of the source material, namely if the text is an entire treatment or a single session, CM divides automatically the text into text units, that can represent sessions, or word blocks made of 150 words. This segmentation process allows the researcher to measure the proportions of the considered variables for each text unit, in the form of z-scores. For the aims of this study, a micro-process approach was adopted, so the entire treatment was analyzed session by session. This means that every session of the therapy was first split into word blocks of 150 words each, and then analyzed with CM.

As an output, the software yields a graphic representation of the therapy or the session, based on the fluctuation of the variables over time. This generally leads to four different graphs: the first one regards only the patient, and shows the amount of Emotional Tone and Abstraction for every text unit. This graph also allows the researcher to identify the Emotion-Abstraction Patterns. The second one shows the speech proportion of the two subjects, for each text unit. The third one is similar to the first one, but this time it is about patient and therapist, taken together. The fourth and last one shows the fluctuation of the emotional state of the patient through time, thus indicating the level of positive and negative Emotional Tone for each text unit.

In addition to these graphs, CM produces a file containing all the data required to perform the statistical analyses.

Within the scope of this work, CM was used intensively to analyze the transcripts of the sessions, identifying the Emotion-Abstraction patterns in the patient and monitoring his emotional state. This procedure also identified the key moments in which one could infer that something clinically important was going on.

The specific version that was used to analyze the text is CM 4.3, provided with its Italian ET and AB dictionaries.

Connecting Types

Using TCM's computerized analysis procedure, it was possible to define three "Connecting Types", that are different kinds of Connecting patterns, based on specific configurations of negative and positive Emotional Tone showed by the patient:

- *Positive Connecting*: It is a Connecting pattern, characterized by a high value of positive Emotional Tone (pET above the mean), and a low value of negative Emotional Tone (nET below or equal the mean). Formally, a Positive Connecting word block can be identified with the following conditions:

    AB > mean(AB)
    ET > mean(ET)

$$pET > mean(pET)$$
$$nET \leq mean(nET)$$

- *Negative Connecting*: It is a Connecting pattern, characterized by a high level of negative Emotional Tone (nET above the mean), and a low value of positive Emotional Tone (pET below or equal the mean). Formally, a Negative Connecting word block can be identified with the following conditions:

$$AB > mean(AB)$$
$$ET > mean(ET)$$
$$nET > mean(nET)$$
$$pET \leq mean(pET)$$

- *Integrated Connecting*: It is a Connecting pattern, characterized by high levels of both positive and negative Emotional Tone (pET and nET above the mean). Formally, an Integrated Connecting word block can be identified with the following conditions:

$$AB > mean(AB)$$
$$ET > mean(ET)$$
$$pET > mean(pET)$$
$$nET > mean(nET)$$

In order to point out these patterns, the data provided by CM software were used. In facts, it seemed more reasonable to rely on a computerized analysis, rather than on the results of a manual check of the graphs.

Following RMT's assumptions, it seems reasonable to argue that all the three pattern indicate clinically important moments of the treatment: since both Abstraction and Emotional Tone are high above the mean, the patient is experiencing a deep emotional state, and at the same time he is able to reflect upon it. This is the ideal condition that allows a patient to reach the working-through phase, which typically

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leads to therapeutic change (Mergenthaler, 2008). What is different in the three Connecting Types is the emotional state of the patient, that can be significantly positive, negative, or "integrated", meaning that both positive and negative emotions are significantly present, at the same time, in that particular moment. These different conditions may be related to the broaden-and-build and deepen-and-provide phases, activated respectively when a Positive Connecting or a Negative Connecting is showing up. In the case of Integrated Connecting, the assumption is that both processes have been activated simultaneously: The patient is linking the two parts, because he can focus deeply on the problematic affective experience, given the highly negative activation, and also widen the array of thoughts and actions, thus increasing his problem solving capacity, given the concurrent highly positive activation.

2.4   Linking CM data with CPIRS scoring system

The CM software automatically splits the sessions transcripts into standard word blocks, each made of 150 words, and these blocks constitute TCM's units of analysis. Because of this peculiar procedure, after having scored all the therapist's interventions with the CPIRS, it was necessary to check the text near the boundaries of all the word blocks, in order to prevent some biases that could affect the statistical analyses. Since the focus of the present study is the relationship between specific therapist's interventions and the patient's response towards them, it was important to link every patient's verbal utterance to the proper therapist's intervention.

Generally speaking, a patient's response was linked to a therapist's intervention by means of a proximity principle: Usually the therapist's intervention is followed by the patient's answer, that constitutes the response to that intervention. Consider the following example, taken from the transcript:

> T.: Don't you get angry anyway when you have this belief that friends don't think about you and so on?
>
> P.: No, it makes me feel sad.[2]

In this case, the patient's utterance was considered as the response to that particular therapeutic intervention, and the same principle was applied within any word block, in order to compute the patient's emotional and cognitive states, and their association with the concurrent therapeutic interventions.

When the segmentation of the transcript made the boundaries of two word blocks fall right in the middle of a therapeutic intervention, so that the patient's response was contained in the second word block, the intervention too was considered to be included in the second one.

> T.: Or maybe you remember yourself imagining they would never *[End WB 21; Start WB 22]* talk to you anymore, that…
>
> P.: Well, no, at the conservatory there's this very… Certain things are very terrible. I already had to face my problems with my mum, she didn't want me to be a simple office worker…[3]

Here the therapist's intervention was included in word block number 22, because the patient's answer came afterwards.

Differently, when a word block's boundary cut a patient's response in two chunks, the decision was taken by means of a conventional rule: If the first chunk was made by at least one third of the entire word block, that is 50 words or more, the therapist's intervention was included in the previous word block. Otherwise, the intervention was included in the following one.

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[2] Session 3, word block number 34 *(note: all the clinical examples taken from the transcript were translated in English from the original Italian by the author of the present study).*

[3] Session 4, word block number 21-22.

2.5 Queries and hypotheses

The main goal of the present work is to provide empirical data for the clinically relevant notion that the patient's emotional-cognitive regulation, in terms of affective experiencing, cognitive mastery, and positive and negative emotional state, is associated with specific categories of intervention used by the therapist. This assumption is shared in both RMT and cognitive therapy's theory of change, and within the scope of the present work the following hypotheses were tested:

1. The amounts of ET and AB, and the amounts of pET and nET, are statistically associated with the presence of specific categories of therapeutic interventions in the considered word block.

    1.a.   The proportions of Cognitive interventions (cat. 7) are expected to be significantly higher in the word blocks that present a high amount of AB, in comparison to the other word blocks. This is based on the assumption that Cognitive interventions should be remarkably associated with a strong activation of the patient's cognitive resources.

    1.b.   The proportions of Cognitive interventions (cat. 7), and also the proportions of Experiential interventions (cat. 8), are both expected to be significantly higher in the word blocks that present a high amount of ET, in comparison to the other word blocks. The underlying assumption is that both Cognitive and Experiential interventions are usually used by the therapist in order to stimulate a highly emotional response in the patient.

    1.c.   The proportions of Cognitive interventions (cat. 7), Authoritative Support (cat. 2), and Facilitating interventions (cat. 1), taken separately, are expected to be significantly higher in the word blocks that present a high amount of pET, in comparison to the other word blocks. Cognitive interventions are often used to

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interpret the patient's negative and maladaptive feelings in a more positive way, by modifying the dysfunctional meanings and thoughts, thus allowing the patient to reach the broaden-and-build phase. Authoritative Support interventions are used when the patient needs to be strongly reassured, so the therapist makes a direct attempt to help him overcome his fears. The aim of Facilitating interventions is to turn the patient's emotionally negative status into a more positive one, by showing empathy, warmth, and sincere care and attention towards his problems.

1.d.   The proportions of Experiential interventions (cat. 8) are expected to be significantly higher in the word blocks that present a high amount of nET, in comparison to the other word blocks. The therapist uses this category of intervention when the patient needs to be encouraged to focus on his problematic emotional experience, so it facilitates the arousal of strong negative feelings, that provide the ground for the deepen-and-provide process.

2. Some categories of intervention are statistically associated with specific Emotion-Abstraction patterns in the patient's response.

2.a.   The proportions of Structuring interventions (cat. 5), and also the proportions of Other interventions (cat. 15) are both expected to be significantly higher in the word blocks that show a Relaxing pattern, in comparison to the other word blocks. Both these categories of intervention are not meant to deal with cognitive mastery nor the emotional experiencing of the patient: Structuring interventions are used when the therapist needs to set the agenda with the patient, or when he plans the activities to be carried out in the next sessions. The interventions classified as Other, instead, are essentially the ones that are involved with the request for information and facts.

2.b.   The proportions of Coaching interventions (cat. 3) are expected to be significantly higher in the word blocks that show a Reflecting pattern in the patient, in comparison to the other word blocks. The therapist uses Coaching interventions when he explains the therapy rationale and the therapeutic goals to the patient, or when he explicitly guides the content of the conversation, focusing on some theoretical aspects and thus enhancing the patient's reflective processes, without bringing in high emotional arousal.

2.c.   The proportion of Experiential interventions (cat. 8) are expected to be significantly higher in the word blocks that show an Experiencing pattern, in comparison to the other word blocks. Experiential interventions focus on the patient's feelings, in order to help him get in touch with his emotions, and trigger the process of "problem activation".

2.d.   The proportions of Cognitive interventions (cat. 7) are expected to be significantly higher in the word blocks that show a Connecting pattern, in comparison to the other word blocks. Interventions of this kind, that are distinctive of standard cognitive treatments, deal with the integration of emotional and cognitive areas, thus helping the patient experience a highly emotional state and, at the same time, to gain access to the cognitive resources required in order to reflect upon his problems.

3. Some categories of intervention are statistically associated with specific Connecting Types in the patient's response.

3.a.   The proportions of Cognitive interventions (cat. 7) are expected to be significantly higher in the word blocks that present an Integrated Connecting, in comparison to the word blocks that present other kinds of CT. This hypothesis is based on the clinical notion that Cognitive interventions may be useful to help the

patient bridge emotions and cognitions, and also positive and negative emotions, thus yielding therapeutic change.

3.b.   The proportions of Authoritative Support (cat. 2), and also the proportions of Facilitating interventions (cat. 1), are both expected to be significantly higher in the word blocks that present a Positive Connecting, in comparison to the word blocks that present other kinds of CT. These kinds of interventions are in fact intended to be highly supportive, so one could expect them to be positively associated with a Positive Connecting in the patient's response.

3.c.   The proportions of Experiential interventions (cat. 8) are expected to be significantly higher in the word blocks that present a Negative Connecting, in comparison to the word blocks that present other kinds of CT. This hypothesis is based on the fact that these interventions are specifically focused on the patient's maladaptive emotions and feelings, thus it seems reasonable to expect them to be positively associated with a Negative Connecting in the patient's response.

2.6   Data analysis

In order to test the aforementioned hypotheses, SPSS for Windows (version 18) was used throughout the study, to statistically compare the CM data with the categories of interventions. More precisely, the procedure required first the operationalization of the concepts of Integrated, Positive, and Negative Connecting Type, as described above (see §2.3.2). Once those conditions had been formalized, a data sheet was prepared with all the required data taken from CM output file (AB, ET, pET, nET, and the Emotion-Abstraction Pattern configuration for each word block of the sessions), and

the list of all the therapeutic interventions scored with the CPIRS system and divided by the number of words in each word block, in order to obtain relative frequencies.

The statistical software allowed the identification of the Connecting Types, using scripts especially made for this purpose that included all the criteria.

The relationships between the categories of therapeutic intervention, and the patient's categorical characteristics given by the CM analyses were investigated by means of a contingency tables approach. First, the global hypotheses on associations between the various kinds of intervention and the patient's variables were tested using the generalized Fisher's test procedure for 11x2 or 11x4 contingency tables. Because of the time complexity of the generalized procedure, the Monte Carlo approach with up to 10,000,000 random simulations was used. As a second post-hoc step, adjusted standardized residuals for each table cell were investigated. The Bonferroni procedure of simultaneous inference was used for the correction of critical values of the adjusted standardized residuals, with respect to the number of the cells in the table.

Spearman's rank correlation coefficient Rho was used to test the time trends of the absolute frequencies of the therapeutic interventions.

3.   RESULTS

3.1   Frequencies and distributions

The frequencies of all therapeutic interventions, that were found in the whole text material, are shown in Figure 4. The entire treatment included a total number of 2324 different interventions, corresponding to all the therapist's utterances.

   Of all the 15 categories, only 11 were found in the text material. Category numbers 9, 12, 13, and 14 were not identified by the rater in the considered treatment. In fact, those interventions (i.e., Experiential Procedures - Chair Work, Strategic, Group Dynamic, and Systemic interventions) are very specific, since they represent particular techniques which belong to other kinds of therapeutic orientation, and therefore it is very unlikely to find them in a standard cognitive therapy, like the one that was used for the present study.
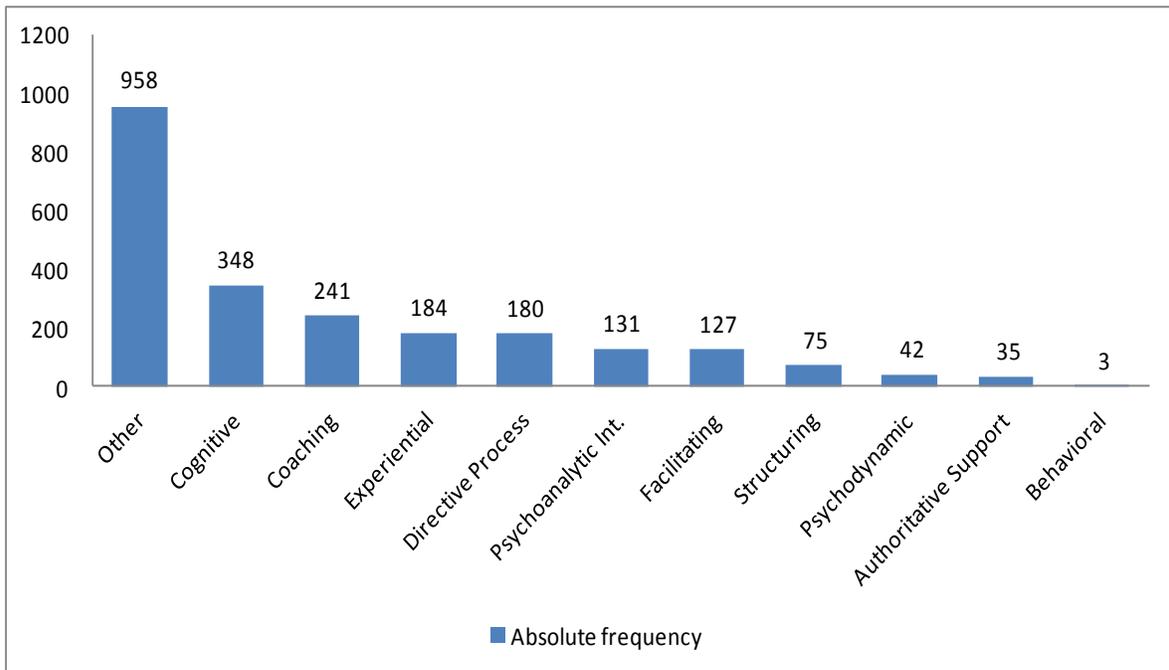
Fig. 4. Absolute frequencies of the therapeutic interventions.

Regarding the therapeutic interventions, a Spearman Rho was performed, in order to check if it was possible to point out some significant correlations between the frequency of every specific category within any session, and the progression of the sessions over time (Table 5).

Table 5. Correlations between category of interventions and session number.

Category of intervention	Spearman's Rho
Experiential	-.730**
Other	-.277
Cognitive	-.232
Behavioral	-.196
Psychodynamic	.035
Psychoanalytic Interventions	.067
Authoritative Support	.146
Structuring	.242
Directive Process	.480*
Coaching	.513*
Facilitating	.706**

Note: *$p < .05$; **$p < .01$ (two-tailed). $N = 24$.

These data suggest that three categories, namely category number 1 (Facilitating), category number 3 (Coaching), and category number 4 (Directive Process) are positively correlated with session number, indicating that these intervention types are being used more and more frequently as the treatment proceeds. Category number 8 (Experiential Interventions), is on the contrary negatively correlated with session number, and this result indicates that these interventions are less often used by the therapist as the treatment proceeds.

Figure 5 shows the amount of Experiential interventions per session, whereas Figure 6 shows the amount of Facilitating interventions per session.
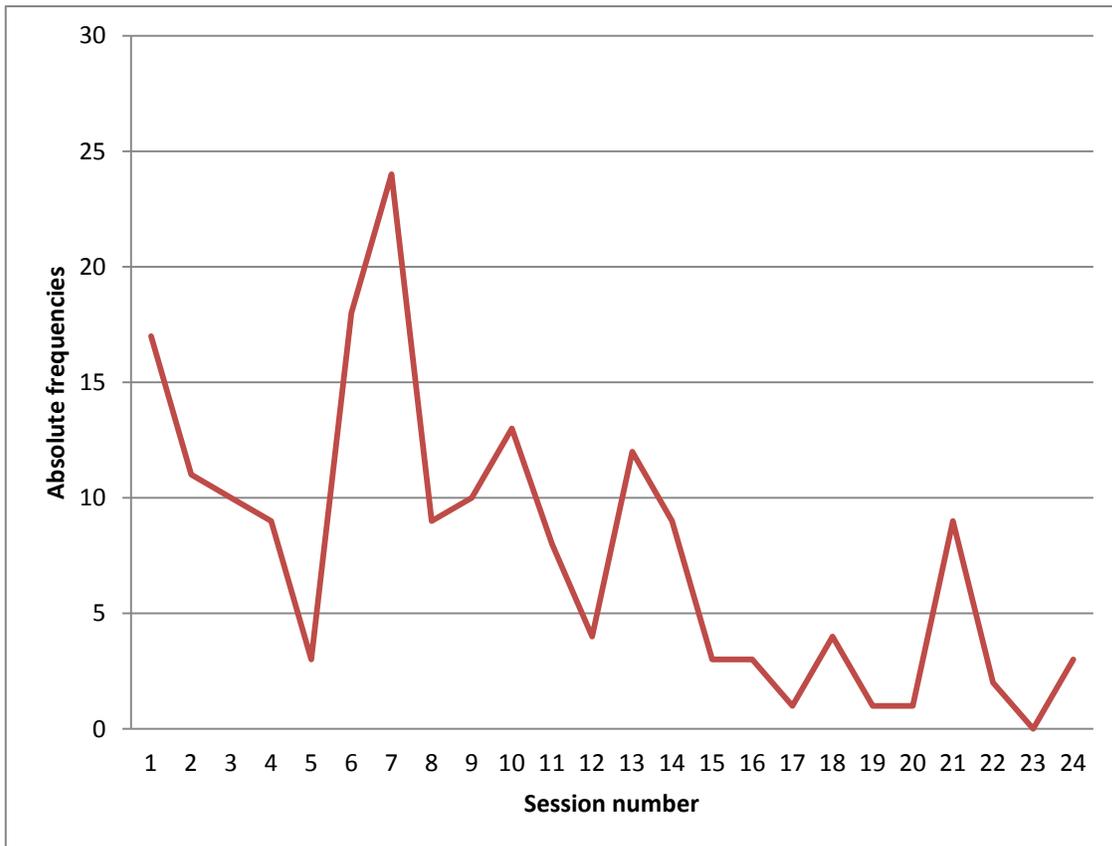
Fig. 5. Frequency distribution of Experiential interventions in the "Mag" case.
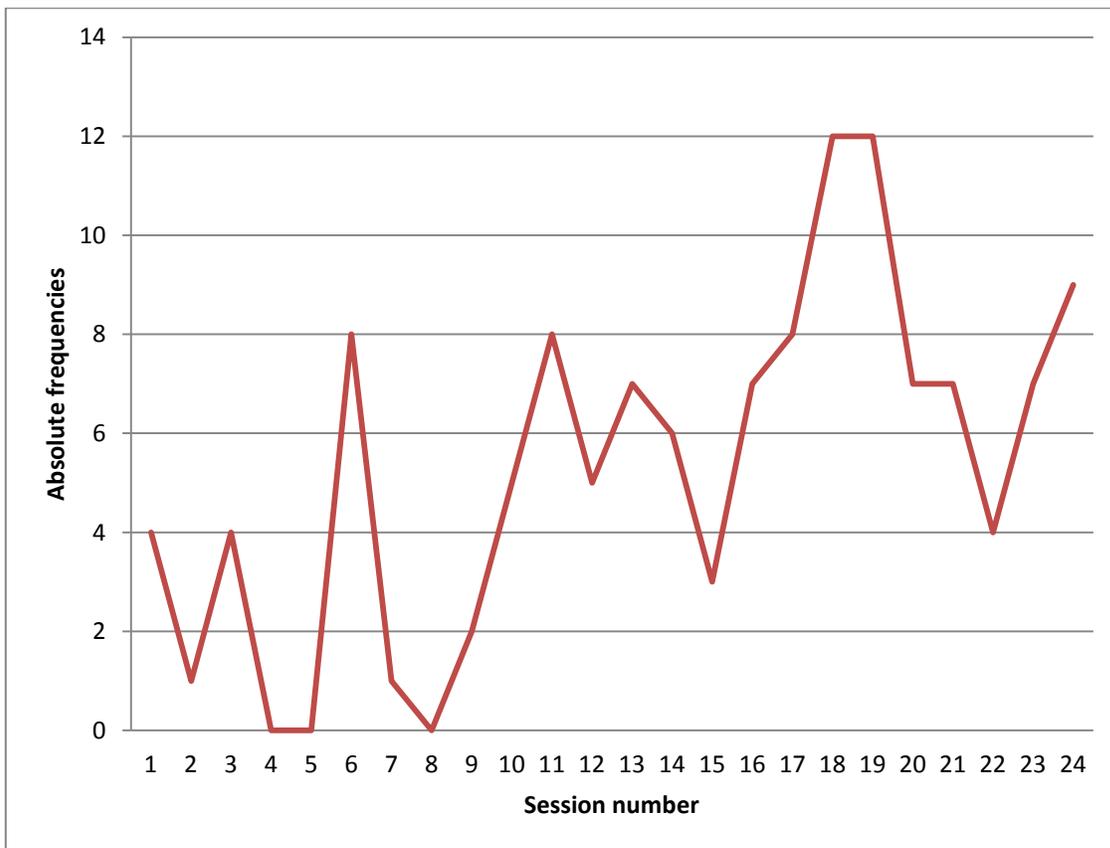
Fig. 6. Frequency distribution of Facilitating interventions in the "Mag" case.

As the correlations indicate, and the graphs clearly show, these two categories of interventions show an opposite behavior: Facilitating interventions increase as the treatment proceeds, while Experiential interventions decrease progressively.

With regard to the Connecting Types, Table 6 shows the occurrences of all the different kinds of CT (i.e., Integrated, Positive, and Negative CT), in every session.

Table 6. Absolute frequencies of the three Connecting Types by session.

Session	Integrated Connecting	Positive Connecting	Negative Connecting	Total Connecting	Number of WB
1	3	1	6	10	54
2	7	4	3	14	54
3	6	7	3	16	55
4	6	3	5	14	46
5	7	3	4	14	43
6	3	3	7	13	53
7	7	4	3	14	57
8	4	3	1	8	44
9	0	4	4	8	46
10	7	3	5	15	43
11	5	2	3	10	52
12	4	6	4	14	53
13	2	4	6	12	46
14	2	5	2	9	42
15	3	2	6	11	40
16	4	0	4	8	42
17	3	2	4	9	36
18	3	4	5	12	38
19	8	4	2	14	46
20	6	1	3	10	51
21	5	7	3	15	52
22	3	4	3	10	42
23	5	2	1	8	46
24	5	2	1	8	44
Total	108	80	88	276	1125

3.2 Therapeutic interventions and patient's emotional-cognitive regulation

3.2.1 Therapeutic interventions and Abstraction levels

According to Hypothesis 1.a, Cognitive interventions (cat. 7) are expected to be positively associated with high levels of Abstraction in the patient's response. A positive association between the two variables supports the notion that Cognitive interventions have the tendency to enhance and stimulate the patient's cognitive processes. This hypothesis was statistically tested. Table 7 shows the association levels between all the categories of therapeutic interventions, and the amount of Abstraction.

Table 7. Absolute frequencies and adjusted standardized residuals for therapeutic interventions and Abstraction levels in the patient's response.

Category of intervention	Abstraction (AB)	
	> mean	≤ mean
Facilitating	55 -.9	72 .9
Authoritative Support	23 2.2	12 -2.2
Coaching	112 -.2	129 .2
Directive Process	78 -1.1	102 1.1
Structuring	41 1.3	34 -1.3
Behavioral	3 1.8	0 -1.8
Cognitive	203 4.5 [***]	145 -4.5 [***]
Experiential	87 .0	97 .0
Psychoanalytic Interventions	49 -2.3	82 2.3
Psychodynamic	20 .1	22 -.1
Other	426 -2.2	532 2.2

Note: [*] $p < .05$; [**] $p < .01$; [***] $p < .001$ (two-tailed).
Significance levels of adjusted residuals Bonferroni corrected for the number of table cells. Generalized Fisher's test, Monte Carlo, 1,000,000 simulations: $p < .001$.

The proportion of the patient's abstract words, that constitutes the Abstraction variable (AB), was calculated for all the word blocks of the treatment. According to

Hypothesis 1.a, one would expect to find a higher density of Cognitive interventions within the word blocks characterized by a high amount of Abstraction than in the other ones.

The findings support the hypothesis: the category Cognitive is highly significantly positively associated with the variable Abstraction (adj. res. = 4.5; *p* < *.001*). Thus, it is possible to conclude that Cognitive interventions are positively associated with a high level of Abstraction in the linguistic response of the patient.

3.2.2 Therapeutic interventions and Emotional Tone levels

Hypothesis 1.b was tested using a similar procedure, in order to check if both Cognitive interventions (cat. 7), and Experiential interventions (cat. 8) are positively associated with high levels of Emotional Tone in the patient's response. The levels of association between the ET variable and every other category of interventions were also calculated (Table 8).

Table 8. Absolute frequencies and adjusted standardized residuals for therapeutic interventions and Emotional Tone levels in the patient's response.

	Emotional Tone (ET)	
Category of intervention	> mean	≤ mean
Facilitating	56 -.8	71 .8
Authoritative Support	22 1.8	13 -1.8
Coaching	88** -3.6	153** 3.6
Directive Process	87 .3	93 -.3
Structuring	23* -2.9	52* 2.9
Behavioral	3 1.8	0 -1.8
Cognitive	219*** 6.3	129*** -6.3
Experiential	122*** 5.4	62*** -5.4
Psychoanalytic Interventions	59 -.6	72 .6
Psychodynamic	22 .6	20 -.6
Other	400*** -4.5	558*** 4.5

Note: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$ (two-tailed).
Significance levels of adjusted residuals Bonferroni corrected for the number of table cells. Generalized Fisher's test, Monte Carlo, 1,000,000 simulations: $p < .001$.

The values reported in the table indicate a positive association between the category Cognitive interventions and the variable Emotional Tone (adj. res. = 6.3; $p < .001$), meaning that this particular kind of therapeutic interventions is associated with significantly high values of Emotional Tone in the patient's response. As hypothesized, the category Experiential interventions is also positively associated with high ET values (adj. res. = 5.4; $p < .001$).

Moreover, the table shows that Coaching (adj. res. = -3.6; $p < .01$), Structuring (adj. res. = -2.9; $p < .05$), and Other interventions (adj. res. = -4.5; $p < .001$) are negatively associated with high ET values, meaning that these kinds of therapeutic interventions tend to be associated with low levels of ET.

3.2.3 Therapeutic interventions and positive ET levels

According to Hypothesis 1.c, Cognitive, Authoritative Support, and Facilitating interventions are all expected to be positively associated with high levels of positive Emotional Tone in the patient's response. The findings are given in Table 9.

Table 9. Absolute frequencies and adjusted standardized residuals for therapeutic interventions and positive Emotional Tone levels in the patient's response.

Category of intervention	positive Emotional Tone (pET)	
	> mean	≤ mean
Facilitating	58 .2	68 -.2
Authoritative Support	24 2.9[*]	11 -2.9[*]
Coaching	81 -3.7[**]	160 3.7[**]
Directive Process	83 .4	97 -.4
Structuring	31 -.6	44 .6
Behavioral	3 1.9	0 -1.9
Cognitive	219 7.4[***]	129 -7.4[***]
Experiential	96 2.1	88 -2.1
Psychoanalytic Interventions	60 .2	71 -.2
Psychodynamic	14 -1.5	28 1.5
Other	372 -4.8[***]	586 4.8[***]

Note: [*] $p < .05$; [**] $p < .01$; [***] $p < .001$ (two-tailed).
Significance levels of adjusted residuals Bonferroni corrected for the number of table cells. Generalized Fisher's test, Monte Carlo, 1,000,000 simulations: $p < .001$.

The findings support only partially the hypothesis: Authoritative Support interventions are positively associated with high values of pET (adj. res. = 2.9; *p < .05*), and also

Cognitive interventions (adj. res. = 7.4; *p < .001*), but Facilitating interventions do not reach significance level in their association with the variable positive Emotional Tone (adj. res. = .2; *n.s.*).

Additionally and not predicted, the analysis reveals a negative association between the considered variable and the presence of Coaching (adj. res. = -3.7; *p < .01*), and Other interventions (adj. res. = -4.8; *p < .001*).

3.2.4 Therapeutic interventions and negative ET levels

According to Hypothesis 1.d, Experiential interventions are expected to be positively associated with high levels of negative Emotional Tone in the patient's response. The results are given in Table 10.

Table 10. Absolute frequencies and adjusted standardized residuals for therapeutic interventions and negative Emotional Tone levels in the patient's response.

Category of intervention	negative Emotional Tone (nET)	
	> mean	≤ mean
Facilitating	60 -.2	67 .2
Authoritative Support	21 1.4	14 -1.4
Coaching	94 -3.0[*]	147 3.0[*]
Directive Process	84 -.4	96 .4
Structuring	21 -3.6[**]	54 3.6[**]
Behavioral	0 -1.7	3 1.7
Cognitive	170 .3	178 -.3
Experiential	117 4.4[***]	67 -4.4[***]
Psychoanalytic Interventions	67 .7	64 -.7
Psychodynamic	25 1.5	17 -1.5
Other	461 .1	497 -.1

Note: [*]$p < .05$; [**]$p < .01$; [***]$p < .001$ (two-tailed).
Significance levels of adjusted residuals Bonferroni corrected for the number of table cells. Generalized Fisher's test, Monte Carlo, 1,000,000 simulations: $p < .001$.

These findings support the hypothesis: Experiential interventions are positively associated with high levels of negative ET (adj. res. = 4.4; *p < .001*).

Additionally and not predicted, a negative association is found between high values of nET and the presence of Coaching (adj. res. = -3.0; $p < .05$), and Structuring (adj. res. = -3.6; $p < .01$), meaning that these categories of interventions tend to be present in the word blocks characterized by low levels of nET in the patient's response.

3.3   Therapeutic interventions and Emotion-Abstraction patterns

According to Hypotheses 2.a - 2.d, some categories of therapeutic interventions should be statistically associated with specific Emotion-Abstraction patterns in the patient's response. The results are given in Table 11, to facilitate the data comparison. The findings will be described in detail in the following paragraphs.

Table 11. Absolute frequencies and adjusted standardized residuals for therapeutic interventions and Emotion-Abstraction patterns in the patient's response.

Category of intervention	Emotion-Abstraction pattern			
	Relaxing	Reflecting	Experiencing	Connecting
Facilitating	45 1.7	26 -.9	27 -.7	29 -.1
Authoritative Support	5 -1.9	8 -.1	7 -.6	15 2.7
Coaching	76 1.0	77 3.1*	53 -.8	35 -3.4*
Directive Process	56 .7	37 -1.1	46 .5	41 -.2
Structuring	25 .9	27 2.5+	9 -2.5+	14 -1.0
Behavioral	0 -1.1	0 -1.0	0 -1.0	3 3.1*
Cognitive	52 -6.2***	77 -.8	93 1.3	126 6.1***
Experiential	31 -3.7**	31 -2.3	66 3.9**	56 2.4
Psychoanalytic Interventions	49 2.2	23 -1.7	33 .3	26 -1.0
Psychodynamic	9 -1.1	11 .4	13 1.1	9 -.3
Other	321 4.2***	237 .9	211 -1.9	189 -3.5*

Note: $^+ p < .10$; $^* p < .05$; $^{**} p < .01$; $^{***} p < .001$ (two-tailed).
Significance levels of adjusted residuals Bonferroni corrected for the number of table cells.
Generalized Fisher's test, Monte Carlo, 1,000,000 simulations: $p < .001$.

3.3.1 Therapeutic interventions and Relaxing pattern

According to Hypothesis 2.a, both Structuring and Other interventions are expected to be positively associated with the presence of a Relaxing pattern in the patient. In order to support this assumption, one should find a higher proportion of Structuring, and also Other interventions, in the word blocks that show a Relaxing pattern in the patient, rather than in the word blocks that present different patterns.

Table 11 shows that the findings confirm the hypothesized positive association between Other interventions and the presence of a Relaxing pattern (adj. res. = 4.2; *p < .001*). The assumption that Structuring interventions and the Relaxing pattern should be positively associated with each other did not reach significance level (adj. res. = .9; *n.s.*). A finding that was not predicted is the negative association between the presence of the Relaxing pattern and the therapist's use of both Cognitive (adj. res. = -6.2; *p < .001*), and Experiential interventions (adj. res. = -3.7; *p < .01*).

3.3.2 Therapeutic interventions and Reflecting pattern

According to Hypothesis 2.b, a positive association is expected to be found between the therapist's use of Coaching interventions and the presence of a Reflecting pattern in the patient's response. The findings reported in Table 11 support the hypothesis (adj. res. = 3.1; *p < .05*).

Apart from the aforementioned result, no other significant associations were found. However, the table shows that there is an additional and unpredicted statistical trend for a positive association between the therapist's use of Structuring interventions, and the presence of a Reflecting pattern in the patient's response (adj. res. = 2.5; *p < .10*).

3.3.3 Therapeutic interventions and Experiencing pattern

According to Hypothesis 2.c, the proportion of Experiential interventions was predicted to be positively associated with the presence of an Experiencing pattern in the patient's response. This hypothesis is supported by the results, as the data show in Table 11 (adj. res. = 3.9; $p < .01$).

Experiential appears to be the only category of therapeutic interventions that is significantly associated with the Experiencing pattern. However, in this case it is also possible to see an additional and unpredicted statistical trend for a negative association between the therapist's use of Structuring interventions, and the presence of an Experiencing pattern in the patient's response (adj. res. = -2.5; $p < .10$).

3.3.4 Therapeutic interventions and Connecting pattern

According to Hypothesis 2.d, Cognitive interventions are expected to be positively associated with the presence of a Connecting pattern. Looking at the results reported in Table 11, this hypothesis is supported (adj. res. = 6.1; $p < .001$).

Behavioral interventions also present a significant positive association with the presence of a Connecting pattern (adj. res. = 3.1; $p < .05$). Moreover, a negative association was found between the Connecting pattern and the therapist's use of Coaching (adj. res. = -3.4; $p < .05$), and Other interventions (adj. res. = -3.5; $p < .05$).

3.4 Therapeutic interventions and Connecting Types

3.4.1 Therapeutic interventions and Integrated Connecting

Hypothesis 3.a predicts that Cognitive interventions are positively associated with the presence of an Integrated Connecting in the patient's response.

Table 12. Absolute frequencies and adjusted standardized residuals for therapeutic interventions and Integrated Connecting in the patient's response.

Category of intervention	Integrated Connecting	
	Yes	No
Facilitating	9 -.9	118 .9
Authoritative Support	8 2.8*	27 -2.8*
Coaching	14 -2.0	227 2.0
Directive Process	12 -1.3	168 1.3
Structuring	7 .0	68 .0
Behavioral	0 -.6	3 .6
Cognitive	65 6.5***	283 -6.5***
Experiential	22 1.3	162 -1.3
Psychoanalytic Interventions	14 .6	117 -.6
Psychodynamic	3 -.5	39 .5
Other	62 -3.9***	896 3.9***

Note: *$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed).
Significance levels of adjusted residuals Bonferroni corrected for the number of table cells. Generalized Fisher's test, Monte Carlo, 1,000,000 simulations: $p < .001$.

The findings (Table 12) support the hypothesis: Cognitive interventions are positively associated with Integrated Connecting (adj. res. = 6.5; $p < .001$), meaning that the

proportion of this specific kind of therapeutic interventions is significantly higher in the word blocks characterized by the presence of an Integrated Connecting in the patient's response, rather than in the word blocks that present other Connecting Types.

The statistical analysis also revealed the presence of a positive association between this particular CT and the therapist's use of Authoritative Support interventions (adj. res. = 2.8; $p < .05$), and a negative association with the therapist's use of Other interventions (adj. res. = -3.9; $p < .001$).

3.4.2 Therapeutic interventions and Positive Connecting

A similar procedure was used in order to test Hypothesis 3.b, predicting that Authoritative Support and Facilitating interventions are both positively associated with the presence of a Positive Connecting in the patient's response. The findings are listed in Table 13.

Table 13. Absolute frequencies and adjusted standardized residuals for therapeutic interventions and Positive Connecting in the patient's response.

	Positive Connecting	
Category of intervention	Yes	No
Facilitating	9 -.4	118 .4
Authoritative Support	4 1.3	31 -1.3
Coaching	10 -1.4	231 1.4
Directive Process	11 -.1	169 .1
Structuring	0 -2.3	75 2.3
Behavioral	3 6.7***	0 -6.7***
Cognitive	42 4.9***	306 -4.9***
Experiential	15 1.1	169 -1.1
Psychoanalytic Interventions	5 -1.2	126 1.2
Psychodynamic	2 -.4	40 .4
Other	44 -2.7[+]	914 2.7[+]

Note: [+]$p < .10$; [*]$p < .05$; [**]$p < .01$; [***]$p < .001$ (two-tailed).
Significance levels of adjusted residuals Bonferroni corrected for the number of table cells. Generalized Fisher's test, Monte Carlo, 1,000,000 simulations: $p < .001$.

The statistical analysis does not support this hypothesis: Neither the category Authoritative Support (adj. res. = 1.3; *n.s.*), nor the category Facilitating (adj. res. = -.4; *n.s.*) is significantly associated with the presence of a Positive Connecting.

However and not predicted, Behavioral (adj. res. = 6.7; *p < .001*), and Cognitive interventions (adj. res. = 4.9; *p < .001*) are positively associated with Positive Connecting. Other interventions show also a statistical trend for a negative association with Positive Connecting (adj. res. = -2.7; *p < .10*).

3.4.3 Therapeutic interventions and Negative Connecting

Hypothesis 3.c predicts that Experiential interventions are positively associated with the presence of a Negative Connecting in the patient's response. Table 14 shows the results of the statistical analysis.

Table 14. Absolute frequencies and adjusted standardized residuals for therapeutic interventions and Negative Connecting in the patient's response.

	Negative Connecting	
Category of intervention	Yes	No
Facilitating	11 -.4	116 .4
Authoritative Support	3 .2	32 -.2
Coaching	11 -2.0	230 2.0
Directive Process	18 1.1	162 -1.1
Structuring	7 .5	68 -.5
Behavioral	0 -.5	3 .5
Cognitive	19 -1.8	329 1.8
Experiential	19 1.3	165 -1.3
Psychoanalytic Interventions	7 -1.1	124 1.1
Psychodynamic	4 .4	38 -.4
Other	83 1.3	875 -1.3

Note: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$ (two-tailed).
Significance levels of adjusted residuals Bonferroni corrected for the number of table cells. Generalized Fisher's test, Monte Carlo, 1,000,000 simulations: $p = .223$, *n.s.*.

Hypothesis 3.c is not supported: There is no significant association between the therapist's use of Experiential interventions and the presence of a Negative Connecting (adj. res. = 1.3; *n.s.*). Moreover, it is possible to notice that none of the therapeutic categories is significantly associated with it.

4. DISCUSSION

4.1 General remarks on the therapist's style

The present treatment can be classified as a standard cognitive therapy, that is considered to be a good outcome case (see §2.1). Given cognitive therapy's rationale and theoretical background (Beck et al., 1979; Ellis, 2001), it is clear why some of the interventions included in the CPIRS became naturally excluded from the coding. More specifically, category number 9 (Experiential Procedures – Chair Work), 12 (Strategic interventions), 13 (Group Dynamic interventions), and 14 (Systemic interventions) could not be found in the text, since they are highly distinctive of different kinds of psychotherapies. On the contrary, interventions such as psychoanalytic-oriented interpretations (to be coded as category number 10, Psychoanalytic Interventions) are present, even though they are not so frequent (N = 131, 5.6% of the total). This is due to the fact that in cognitive treatments one of the main goals is to help the patient discover the hidden patterns of relational functioning, that in some cases tend to be maladaptive and to represent the source of the psychological suffering. This task is usually accomplished by interpreting the patient's social demeanor and behavior, trying to isolate the recurring patterns, and to bring to consciousness the cognitions that determine people's emotional responses and their actions (Beck et al., 1979).

Not surprisingly, the most frequent category of interventions is number 15, Other Interventions (N = 958, 41.2% of the total). This category includes some of the most common utterances of the therapist, no matter the particular therapy orientation, such as item number 78 ("Asking information or elaboration"), number 79 ("Clarification, reformulation in different words"), and number 81 ("Using metaphors"). These interventions tend to be very unspecific, so they do not belong to a clear therapeutic technique, and they are also not representative of any specific kind of treatment.

Therefore they were grouped all together in the last category of the rating scale, under the name of "Other Interventions" (Trijsburg et al., 2002).

   A clear example of item number 78, a request for information, that was coded at a macro-category level as number 15, is the following:

       P.: …And this caused that dream after some days.

       T.: When did you have the dream? *15*

       P.: I had it not so many days ago, last week.[4]

Another example of intervention to be coded as number 15 is the following:

       P.: Yes, yes they broke up when I was ten or eleven years old.

       T.: Ten or eleven years old. *15*

       P.: Then I lived for a year with my dad and I had fever all the time.[5]

In this case the therapist is not asking for information, but he is rather using a "highlight marker" to emphasize something the patient said (item number 79, "Clarification, reformulation in different words").

   The second most frequent category of interventions is number 7, Cognitive Interventions (N = 348, 15% of the total). This group includes twelve different items, that are highly distinctive of the cognitive approach, and thus tend to appear very frequently in a cognitive-oriented treatment like the one that was analyzed. The main goal of these interventions is to help the patient identify and modify dysfunctional thoughts, behaviors, and emotional schemata. To do so, the therapist typically tries not only to point out certain conscious notions, convictions, or mental constructions from which the patient looks at others, himself, and his interpersonal environment, but also to bring back to the patient's consciousness the relationship between thoughts and feelings (Beck et al., 1979; Ellis, 2001). Moreover, in some cases, it is part of the therapist's work to highlight specific errors in the reasoning of the patient (like, for

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[4] Session number 2, word block number 36.

[5] Session number 3, word block number 18.

example, dichotomous thinking, arbitrary distractions, or over-generalizing tendencies), encouraging the use of a more rational and adaptive way of thinking. In the CPIRS, some of the most representative interventions of this kind are labeled as "Cognitive themes", "Exploring personal meaning of thought", "Recognizing cognitive errors", "Identifying underlying assumptions", and "Practicing rational response" (Trijsburg, 2005).

The following examples show how the therapist tries to explore the thoughts and the reflecting processes of the patient, using interventions belonging to category number 7.

P.: …At a certain point in time I started to feel sick of all this situation, and I said OK, now it's time for revenge. Spartacus breaks his chains.

T.: What did you think when you said you have always had to go through that stuff, what were you thinking of? **7**

P.: You know, go through all those things, I don't know, the fact that my parents split up. Well, it's not only about that. I always arose strongly against that, because then when I was sixteen I have always tried to bring them together, when they broke up I spent the whole year like this, they were arguing constantly and I tried to calm them…[6]

P.: …I have found out this strange thing: They respect me [laugh]. This is really funny because it's totally undeserved, and this is not about being humble, it's just the plain truth.

T.: Try to make this little cognitive experiment. Let's see if it turns out to be informative. **7**

P.: I guess they think of me as a couldn't-care-less person, somebody who refuses to take responsibilities, it's like this, and it's a true fact.[7]

T.: And about this punishment, what does this punishment mean for you? **7**

P.: The punishment is to lie in wait for somebody, to know what his weak point is, to know if there are certain things that make me upset, to know that I am right and he is wrong, to lie in wait for him and make him pay, telling him: You see, that's what you did, stupid asshole, you can't behave like that, you hurt me, you have been… To blame him…[8]

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[6] Session number 14, word block number 6.

[7] Session number 19, word block number 46.

[8] Session number 4, word block number 38.

In the first example, the therapist simply asks the patient to reveal the thoughts she was having in a particular situation. This is the most direct way to explore the patient's thoughts, and it is coded in the CPIRS as category 7, item number 33: "Record and report cognitions". Here the accent, as the manual states clearly, is "on the exact contents of the thought and not on the emotions, views or generalities concerning the thoughts. The examples must be as literal as possible" (Trijsburg, 2005).

The second example is more subtle. The therapist encourages the patient to perform a cognitive test: She is invited to imagine what her work colleagues think of her, as a professional and as a person. The goal here is to make the patient aware of the discrepancy between the fact that she is experiencing the trust and admiration of the colleagues, and at the same time she believes that they always think of her as a "couldn't-care-less-person". This intervention has to be rated as item number 35, "Recognizing cognitive errors".

In the last example, the therapist's cognitive intervention is about digging deep into the patient's construction of meaning. More precisely, the therapist asks her to explain the underlying meaning of a peculiar verbal expression, such as "punishment". In this case, the item is number 34, "Exploring personal meaning of thought".

Another frequent category of interventions is number 8, Experiential (N = 184; 7.9% of the total). This category includes all the verbal techniques by means of which the therapist helps the patient explore his emotions and feelings towards himself and the other people. More practically, the therapist may simply encourage the process of experiencing the affect by the patient (item number 44, "Emphasizing feelings"), or bring up the attention on paralinguistic and nonverbal signals, like for example clues coming from the posture, the gesture, the facial expressions and the tone of voice (item number 46, "Linking interventions to nonverbal cues"), or even adopt a more directive attitude in order to increase the patient's level of awareness with regards to his emotional state (item 48, "Recognizing and acknowledging unexpressed feelings").

A clear example of this specific kind of interventions is the following one:

P.: …The fact that I was cornered by my parents, and mostly by my mother, determined this state of depression, because I…

T.: Were you actually depressed or maybe angry, like you usually feel in these situations? *8*

P.: No, back then I think I was actually depressed, I only looked at the black side…[9]

Interventions belonging to category number 1, Facilitating, are moderately frequent in the treatment (N = 127, 5.5% of the total). This category includes relational-focused interventions, and more specifically the ones that are nowadays usually labeled as "common factors" (Trijsburg et al., 2002). Items like number 1, "Empathy", or number 2, "Acceptance", are grouped into this category, and from a clinical point of view they are used by the therapist in order to communicate explicitly his understanding and acceptance towards experiences, feelings and thoughts brought in the session by the patient.

The following example clarifies the way in which the therapist can improve the relationship with the patient, and consequently the therapeutic alliance, using a Facilitating intervention:

P.: At a psychological level I feel great, because now I am able to square the circle, so to speak.

T.: It is not an easy situation. *1*

P.: A situation in which I have the tendency to screw things up, that's for sure!

The results of the statistical analysis on the distribution of the categories of interventions through all the sessions show an opposite trend in the presence of Experiential and Facilitating interventions (see §3.1). Figure 5 and Figure 6 represent in a graphical way this opposite tendency. It seems like, as time goes by and the treatment reaches towards its conclusion, the therapist makes less and less use of Experiential interventions, whereas he increases the amount of Facilitating interventions. From a clinical point of view, these findings seem to be coherent with some of the basic assumptions of the Resonating Minds Theory (Mergenthaler, 2008): At the beginning of the treatment, the therapist's main effort is to help the patient focus on her problems and highly emotional topics, using appropriate interventions

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[9] Session number 8, word block number 32.

such as the Experiential ones. But as the treatment goes on, the role of the relationship between patient and therapist becomes more and more important, especially when the couple is able to build a good working alliance, based on a mutual agreement on goals and therapeutic methods, and overall a good bond between the two actors (Bordin, 1979). The Facilitating interventions have their focus on the relationship, and have a strongly supportive power. The therapist shows his understanding, his deep acceptance of the patient's state of minds, and he reassures her about the good effects of her inner struggle to change. In other words, the relationship is now solid and based upon mutual trust, and the therapist's frequent use of Facilitating interventions can be seen as an important sign of it.

4.2 The relationship between interventions and patient's response

4.2.1 Cognitive resources and reflective processes

Cognitive treatments, at least in Beck and Ellis's approach, are focused on the patient's cognitive activity and processes, for they are intended as the main agents of one person's way of thinking, feeling, and acting (Ford, Urban, 1998). Therefore, a cognitive therapist is typically engaged in deepening his understanding of the patient's beliefs and schemas, to make them clear and to challenge the underlying cognitive errors. This is why the therapist uses a great number of interventions that are focused particularly on the patient's reflective processes. These kinds of interventions are grouped in category number 7, Cognitive interventions, in the CPIRS scoring system.

The importance of digging deep into a patient's way of thinking, thus stimulating his ability to reflect upon the pathological behavior or experience, is also stressed in Mergenthaler's Resonating Minds Theory (see §1.3.1). According to RMT's theory of change, the patient's cognitive mastery plays a crucial role in the therapeutic process,

as it is considered to be one of the two main change agents of every kind of psychotherapeutic treatment. The linguistic marker that can reveal the amount of cognitive resources used by the patient in a particular moment is the proportion of abstract words, which constitutes the Abstraction variable (Mergenthaler, 1996b).

Both Beck and Ellis's theoretical and procedural model, and Mergenthaler's RMT consider the therapist's verbal interventions as the most important way to activate and stimulate the patient's reflective ability: The therapist's utterances, strategically and consciously enunciated, have the power to activate specific areas of the patient's brain, and the repetition of this process may lead to relevant changes in the patient's way of functioning. Given this assumption, one could expect to observe an increase of cognitive mastery in the patient, when the therapist applies specific cognitive techniques, that focus mostly on the patient's reflective processes. This hypothesis was tested, measuring the association levels between the therapist's use of Cognitive interventions, and the fluctuation of the Abstraction levels in the patient's verbal response. The findings presented in Table 7 support the clinical assumptions: In the moments of the treatment when the therapist intensively uses Cognitive interventions, it is more likely to find high levels of Abstraction in the patient's response. However, in order to establish a causal relation between these two variables, and even to confirm these preliminary results, further research is required. At the moment it is possible to conclude that, in the analyzed treatment, high levels of Abstraction in the patient's response have the tendency to appear when the therapist uses Cognitive interventions, supporting the idea that these particular interventions may help the patient gain access to his cognitive resources, and thus to reflect upon his problems, which is one of the necessary conditions for therapeutic change.

4.2.2 Emotional response

Apart from the cognitive processes, another crucial aspect of therapeutic change is affective experiencing. In Beck and Ellis's conceptualization, emotions and feelings are intended to be mediated and regulated by the person's reflective processes, but in practice the cognitive part and the affective part overlap to a significant degree, since they continuously interact and affect each other (Ford, Urban, 1998). As Reilly pointed out, "it is a myth that cognitive therapy does not address emotions. In fact, emotion is a primary variable in the cognitive model" (Reilly, 2000, p. 343). Therefore, a cognitive therapist is also interested in the affective experience of the patient, and his role is to facilitate the identification of distressed and troubled emotions, and to explore the underlying automatic thoughts. To do so, the therapist makes use of many interventions, that in the CPIRS scoring system are categorized as Experiential interventions (category 8).

In RMT, the patient's affective experiencing is considered a change agent, like cognitive mastery. In this case, the linguistic marker is the proportion of highly emotional words used in a certain moment by the patient, which constitutes the Emotional Tone variable (Mergenthaler, 1996b). Moreover, the particular analysis procedure adopted in RMT allows the researcher to inquire the quality of the patient's emotional status, through the differentiation of positive and negative Emotional Tone. This kind of analysis is clinically relevant: According to RMT, in order to reach a proper working-through phase and thus activate the change processes, the patient needs to gradually shift from a negative, deepening emotional state, to a more positive and broadening emotional state (Mergenthaler, 2008).

All these concepts, concerning the crucial role played by affective experiencing, along with the shift from a negative to a positive experiencing phase, seem to be consistent with evidence coming from experimental psychology and neuroscience research (see §1.3.1), and also with Beck and Ellis's approach (see 1.5.2). Similarly to what was stated in the previous paragraph, in all the considered models the therapist's interventions are assumed to be the most important factors that can enhance (or reduce) a patient's emotional arousal, and also modify the quality of his

affective experience. Within the scope of this work, the aim of the statistical analysis was to gather some preliminary data, in order to check if, at least in the considered treatment, this theoretical assumption is supported. The statistical analysis enabled the measurement of the amount of the association between the therapist's use of Experiential interventions, and the fluctuation of the Emotional Tone levels in the patient's verbal response. The results, presented in Table 8, support the hypothesis: When the therapist focuses his attention on the patient's emotional status, intensively using Experiential interventions, it is more likely to find high levels of Emotional Tone in the verbal response of the patient. The data seem to suggest the idea that Experiential interventions, since they are specifically focused on the affective experience, tend to elicit a highly emotional response in the patient. Anyway, given the limitations of the present study, further research is required in order to better understand the nature of this association between the two variables.

It is also important to notice that, apart from Experiential interventions, Cognitive interventions too showed a significant level of association with high levels of ET in the patient's response. This finding may be consistent with the principles of cognitive treatment, as they were expressed by Beck (1967) and Ellis (1955): Since emotion and cognition are to be considered as interwoven patterns, because thoughts and beliefs directly activate the person's affective experience, it seems reasonable to assume that, when the therapist explores and tests the patient's way of thinking, the patient's emotions arise too.

On the other hand, the results allowed to point out three different categories of interventions that are negatively associated with the emerging of a high emotional state in the patient: Coaching, Structuring, and Other interventions tend to be present in conjunction with low levels of affective experience. That is, the use of these particular interventions by the therapist is associated with low emotional response in the patient.

The interventions labeled as Coaching generally deal with the adoption of a remarkably active role by the therapist, and indicate a didactic and authoritative approach towards the patient (Trijsburg, 2005). For instance, using item number 12, "Therapy rationale", the therapist clearly explains methods and procedures to the

patient; using item number 13, "Explicit guidance", he guides the conversation by explicitly determining the content or the topic; or, using intervention number 15, "Advice and guidance", the therapist gives a piece of advice or a suggestion to the patient. Given the style and the purpose of these specific interventions, it seems reasonable to expect the patient to be scarcely aroused: In the phases of the treatment where the therapist's attitude becomes didactic and directive, the patient is not asked to dig deep into her own affective experience. The conversation tends therefore to be highly rational, because in this particular phase the therapist is not interested in eliciting significant emotional reactions in the patient.

Structuring interventions are related to the setting of the agenda (item number 22), the assignment and the review of a homework (items number 23 and 24), and the scheduling and structuring of the therapeutic activities (item number 25). Also in this case, the fact that the patient's verbal response shows low levels of emotional arousal seems easily explainable: The therapist uses these interventions when it is necessary to perform some tasks, or make a time schedule. So the dyad is busy with practical matters, or the planning of things to do, and the emotional involvement is expected to be lower than the mean.

Other interventions, as it was anticipated in §4.1, is a rather heterogeneous category. Generally speaking, the interventions grouped here deal with the therapist's asking for information or elaboration (item number 78), the clarification of something the patient said (item number 79), and also the use of metaphors and figurative ways of formulating problems and solutions (item number 81). It is the most frequent category in the considered treatment, mainly because the therapist is very often interested in gathering all the required information from the patient, in order to understand what is going on in the patient's everyday life. The act of asking for more details, or the request for a reformulation of something the patient already said, is expected not to trigger a remarkable emotional reaction in the patient. Usually these interventions deal with a mere analysis of facts, clearly excluding the exploration of underlying feelings and emotions, so these preliminary findings can be considered coherent with the clinical assumptions.

Regarding the quality of the patient's affective experience, two different hypotheses were tested. According to Hypothesis 1.c, it was expected to find a positive association between Cognitive interventions, Authoritative Support, and Facilitating interventions, taken separately, and high levels of positive Emotional Tone in the patient's response. The findings, presented in Table 9, only partially support this hypothesis: Cognitive interventions are clearly associated with high levels of pET, and also Authoritative Support interventions are positively associated with pET, but the adjusted residuals of Facilitating interventions are not significant. Moreover, it is important to notice the additional presence of a negative association between high levels of pET, and the therapist's use of Coaching and Other interventions.

Considering these results, several conclusions can be drawn. First of all, Cognitive interventions not only are associated with a strong activation of reflective processes in the patient, but also with the increasing of her emotional arousal. In addition, it is possible to notice that this emotional arousal is mainly positive and related to the broaden-and-build process. Second, Authoritative Support interventions are also associated with high levels of positive emotions in the patient's affective experience. This preliminary finding is coherent with the clinical notion that highly supportive interventions, like the ones that are included in the Authoritative Support category, may be useful and effective when the patient needs to be reassured and encouraged, or when it is necessary to facilitate the emerging of a collaborative working environment. Also in this case, however, further research is required to explore the nature of this association. Third, by looking at the results it is possible to conclude that Facilitating interventions do not seem to play a crucial role in this case. This conclusion may be considered controversial, given the highly empathic quality of all these specific interventions, and their theoretical connection with the so-called common factors and the notion of therapeutic alliance (Trijsburg et al., 2002). In fact, this category includes interventions like Empathy (item number 1), Acceptance (item number 2), Involvement (item number 3), or Warmth (item number 4). The data show that Facilitating interventions are not associated with a positive ET, and they are also not associated with ET in general (see Table 8). It seems like this category of interventions, at least in the treatment taken into account, is not related at all with the

emotional status of the patient. Of course, this finding could be the result of various limitations of the present study, and it should be inquired with more specific and detailed research.

The fact that Coaching and Other interventions are negatively associated with positive ET is coherent with the negative association found between the same categories and ET in general.

According to Hypothesis 1.d, it was expected to find a positive association between Experiential interventions and high levels of negative Emotional Tone in the patient's response. The statistical analysis supports this assumption (see Table 10). The findings show that high peaks of negative ET are likely to be found in the patient's emotional response, when the therapist is making an intense use of Experiential interventions. The data suggest the idea that this category of intervention, centered on the patient's affective experiencing, may have the power to enhance not only her Emotional Tone levels in general, but more specifically the negative ET levels. If Cognitive interventions seem to be somehow connected with the broaden-and-build phase, Experiential interventions seem to be rather involved with the deepen-and-provide phase, because the therapist uses them in order to focus the therapeutic work on the patient's emotional state, and to dig deep into her pathological and distressed feelings.

Lastly, the findings revealed the presence of a negative association between nET and both Coaching and Structuring interventions. Consistent with what has already been stated before, these two categories of interventions seem to be associated with low levels of Emotional Tone in the patient's response, and this is true also in the case of negative ET.

4.2.3 Emotion-Abstraction patterns

The Emotions-Abstraction patterns, in RMT, represent four different kinds of cognitive-emotional regulation that take place during the treatment. They are

differentiated by taking into account the Emotional Tone and Abstraction variables and their combinations, thus generating pattern A, Relaxing (low ET, low AB); pattern B, Reflecting (low ET, high AB); pattern C, Experiencing (high ET, low AB); and pattern D, Connecting (high ET, high AB) (Mergenthaler, 2008; see §1.3.1). Within the scope of the present work, the analysis of the Emotion-Abstraction patterns was limited to the patient, because the focus is on the patient's emotional and cognitive response to the therapist's interventions.

Given the assumptions of RMT, the principles of cognitive therapy, and the evidence coming from several recent studies (see §1.6), it seems reasonable to expect that some categories of interventions have the tendency to elicit specific Emotion-Abstraction patterns in the patient. In order to gather some preliminary data on this matter, it was decided to measure the level of association between those categories of interventions and the patient's patterns (see Table 11).

According to Hypothesis 2.a, it was expected that both Structuring and Other interventions, taken separately, would show a significant positive association with the Relaxing pattern. That is, the proportions of these two groups of interventions are expected to be significantly higher in the Relaxing word blocks. The findings clearly support the hypothesis that Other interventions are positively associated with Relaxing, but Structuring interventions fail to be significant associated with the Relaxing pattern. Other interventions should have nothing to do with a strong emotional activation in the patient, nor with an enhancement of the reflective process, since they represent unspecific and general requests for more information (item number 78, "Asking for information or elaboration"), requests for rephrasing the point in a more identifiable way (item number 79, "Clarification, reformulation in different words"), comments on the patient's behavior (item number 80, "Reformulation of behavior in a way not explicitly recognized previously"), encouragements for the patient to think of personal solutions (item number 77, "Independence"), and the use of metaphors (item number 81, "Using metaphors"). Rather, they are supposed to be associated with a low emotional arousal, and a low activation of the reflective processes in the patient. This hypothesis is supported by the findings: In the moments of the treatment where the therapist intensively uses this kind of interventions, it is

more likely to find low levels of both ET and AB in the patient's verbal response, thus determining the presence of Relaxing patterns. It is important to notice that this result seems to be consistent also with the findings of the study conducted by Walter (2007): The therapist's interventions labeled in that study as "Request for facts" arguably overlap with the ones grouped as Other in the CPIRS scoring system.

Concerning Structuring interventions, no association with the Relaxing pattern was found. Instead, a statistical positive trend was found with the Reflecting pattern, and a negative associative trend with the Experiencing pattern. Considering additionally the negative association between this category and the Emotional Tone variable (see §4.2.2), it seems that Structuring interventions are related to low levels of the ET variable, but they are not related with the coinciding presence of low ET levels and low AB levels. The relationship between Structuring interventions and the Abstraction variable needs more assessment. The findings here suggest that Structuring interventions are associated to low levels of ET, and at the same time with high levels of AB. As both associations are statistical trends, further studies are necessary.

Moreover, the findings show the presence of a negative association between Relaxing pattern and the use of both Cognitive, and Experiential interventions. This result is consistent with the theoretical assumptions and all the other findings: The two considered categories are related to a deep involvement of the patient, in terms of affective experience and cognitive resources, and this fact provides the explanation for the negative association reported with Reflecting pattern.

According to Hypothesis 2.b, Coaching interventions are expected to be positively associated with the presence of Reflecting patterns in the patient's verbal response. The findings support the hypothesis: The proportions of interventions of that kind are higher in the word blocks characterized by Reflecting patterns, compared to the word blocks characterized by all the other patterns. This assumption was based on the fact that this category groups interventions that are mostly related to the explanation to the patient of the treatment's procedures and goals (item number 11, "Therapist as expert"; item number 12, "Therapy rationale"), or the technical confirmation of the patient's improvement (item number 10, "Supportive encouragement"), or the adoption of a directive approach towards the patient, by means of advices,

suggestions, and various strategies to actively guide the conversation (item number 13, "Explicit guidance"; item number 14, "Active control"; item number 15, "Advice and guidance"; item number 16, "Didactic approach"). It seems reasonable to hypothesize that all these interventions may have an influence on the patient's cognitive activation, without bringing in a high emotional involvement: The therapist clarifies the therapy's rationale and procedures, and acts as an expert who explains to the client what has been done, and what should be done in the future. So, the patient would probably react by thinking and reflecting upon what the therapist is saying, examining his point of view and rationally analyzing it from his own perspective. The data show that there is a significant association between the intense use of this category of interventions and the presence of Reflecting patterns in the patient's verbal response: The patient seems to react enhancing her reflective activity, signaled by high levels of the AB variable, while the ET levels, related to the emotional arousal, remain low.

In Hypothesis 2.c, the association regards the Experiential category, and the presence of Experiencing patterns in the patient's verbal response to those therapeutic interventions. The findings support the hypothesis: Experiential interventions are positively associated with the Experiencing pattern, which means that in the word blocks labeled as Experiencing, it is more likely to find a higher density of Experiential interventions. This category includes all the interventions that deal with the patient's affective experience, and are used by the therapist in order to focus the therapeutic work on feelings and emotions of the patient. Therefore, when the therapist intensively uses these interventions, it is reasonable to expect that the patient's response was highly emotional, a condition signaled by high ET levels in the transcript, without a concurrent increasing of the reflecting processes, and thus generating the Experiencing pattern.

Lastly, according to Hypothesis 2.d, Cognitive interventions are expected to be positively associated with the presence of a Connecting pattern in the patient's verbal response. The results support this assumption: Cognitive interventions are more likely to be found in the word blocks marked by a Connecting pattern, rather than in the word blocks marked by other kinds of Emotion-Abstraction patterns. These

preliminary findings provide ground for the clinical notion that these therapeutic techniques, highly distinctive of the standard cognitive treatments, may have the power to enhance the reflective processes of the patient, and at the same time to increase her emotional arousal and involvement, thus helping the patient reflect upon her pathological affective experiencing. According to RMT, and also to the theoretical principles of cognitive therapy, this is the preliminary condition for her to become more and more aware of her problems, to find new solutions, and to overcome the emotional disorders.

Moreover, Table 11 shows other significant results. For instance, Behavioral interventions are positively associated with Connecting too. This finding is not surprising, considering that standard cognitive treatments are considered as a particular branch of Cognitive-behavioral therapies (see §1.5). So this category includes specific techniques, mainly focused on the patient's pathological way of acting and behaving, that can be considered as a complement of the cognitive techniques: The therapist explores with the patient the possibility to act in a different, more appropriate way (item 27, "Exploring new ways of behaving with others"), or makes use of role-playing techniques (item 28, "Therapeutic relationship as a model"), or even adopt peculiar procedures to reduce the patient's fears or obsessive-compulsive rituals (item number 29, "Skills training"; item number 30, "Behavioral procedure"). Also in this case, it seems reasonable to assume that, using the aforementioned techniques, the therapist may bridge the gap between the patient's emotions and cognitions, facilitating the emerging of Connecting patterns. This conclusion, however, can be considered controversial, due to the very small amount of Behavioral interventions found in the present treatment (N = 3), and it should be treated with caution.

Other two significant results should be noted, that are the negative associations that were found between the same pattern and the category Coaching, and Other. Regarding Coaching interventions, this result may be explained by taking into account the conclusions drawn before: Coaching interventions seem to be related to low levels of ET, and this fact is coherent with the negative association found between the same category and the Connecting pattern. Concerning Other interventions, the

negative association can be also understandable, because this specific category is associated with the Relaxing pattern, which is considered to be the "opposite" of the Connecting pattern.

4.2.4 Connecting Types

The CM software allows the researcher not only to analyze the amount of ET, but also to differentiate between positive and negative ET. Since many studies have inquired and identified the different roles played by positive and negative emotions (see §1.3.1), this tool provided by CM can be very useful in order to take into account the quality of the patient's affective experience, in every moment of the therapy.

Using this procedure, in a study (Mergenthaler, 2003c), it has been shown that the Connecting pattern is particularly associated with a good outcome when it is made of high levels of both positive and negative emotions, whereas Connecting characterized by only negative emotions is more associated with poor outcome, and Connecting made of only positive emotions seems to be not significantly associated with good nor poor outcome. Based on this conclusion, it seemed useful to operationalize the three different kinds of Connecting, thus defining the so-called Connecting Types: Integrated Connecting (both positive and negative emotions are above the mean), Positive Connecting (only positive emotions are above the mean), and Negative Connecting (only negative emotions are above the mean) (see §2.3.2). Given the fact that the analyzed treatment was classified as a good outcome case (Nicolò et al., 2000), it is important to notice that the most frequent Connecting Type in the text is the Integrated Connecting (N = 108). This is coherent with the findings provided by the aforementioned study (Mergenthaler, 2003c).

According to Hypothesis 3.a, Cognitive interventions are expected to be positively associated with Integrated Connecting. This assumption is based on the clinical notion, supported by the findings listed above, that this kind of interventions may help the patient bridge emotions and cognitions, and also positive and negative emotions,

thus leading to therapy change. In fact, Cognitive is the only category that proved to be associated with an increase of both Emotional Tone and Abstraction, and also with positive ET. Regarding negative ET, that is also required in order to reach an Integrated Connecting phase, even though no significant association was found between this category and nET in general (adj. res. = .1; *n.s.*), given the theoretical principles of cognitive techniques and treatments it seemed reasonable to hypothesize that these interventions might be related to a shift from a negative to a more positive emotional state (see §1.5). The findings of the present study support this hypothesis: Cognitive interventions are positively associated with Integrated Connecting. Thus negative emotions appear to be brought in, along with positive emotions and reflective processes, in the key moments of the treatment, when the patient is reaching a clinically meaningful working-through phase, and the data show that in these crucial moments of the treatment, it is possible to find a significantly higher density of Cognitive interventions. Due to the limitations of the study design, it is not possible to draw conclusions upon the nature of this association, but still it is reasonable to argue that this category of interventions seem to play a crucial role, at least in the considered therapy, in the process of connecting the patient's cognitive mastery with the affective experiencing, and also the deepen-and-provide phase with the broaden-and-build phase.

Apart from Cognitive interventions, also the Authoritative Support category shows a positive association with Integrated Connecting. This finding may appear controversial, considering that Authoritative Support interventions are generally not associated with high AB levels, nor with high ET levels. The results show only a significant association between this category and high pET levels. However, at least within the Connecting word blocks, it seems like Authoritative Support interventions play a role in bridging positive and negative emotions, since their distribution can be significantly different depending on the specific Connecting Type. This aspect should probably be inquired in more detail with further research.

Another important finding is the negative association between Integrated Connecting and Other interventions. This result is clearly coherent with all the previously mentioned results concerning this category, as Other interventions are

negatively associated with some of the variables that are considered relevant for therapeutic change (i.e. ET, pET, and the presence of Connecting), and not associated at all with the other relevant variables (i.e. AB, and nET).

Regarding Positive Connecting, Hypothesis 3.b assumed that this Connecting Type might be positively associated with the intense use of both Authoritative Support, and Facilitating interventions by the therapist. Given the highly supportive nature of these kinds of interventions, one could expect to find a positive association with a Connecting pattern characterized by a high level of only positive ET. The findings do not support the hypothesis, since both of the categories are not statistically associated at all with Positive Connecting. Concerning Facilitating interventions, even though the result contradicts the hypothesis, it seems to be coherent with all the previously presented findings: these interventions are not associated with any variable, allowing to conclude that in the treatment analyzed the patient's cognitive and affective regulation seems to be not related at all with the Facilitating category. On the other hand, Authoritative Support interventions appear to be positively associated with Integrated Connecting, but not associated with Positive Connecting. Given the positive association found between this category and high levels of pET, this result may be surprising. Perhaps, within the key moments of the treatment, that are marked by the presence of Connecting, Authoritative Support interventions are not so related to an increase of positive emotions in the patient, whereas considering all the other word blocks this relation is clearly present in the data analyses. Due to the study limitations, at the moment it is not possible to draw conclusions or make causal interpretations of the fact.

The data indicate that two other categories of interventions are positively associated with Positive Connecting: Behavioral, and Cognitive. Regarding the Behavioral category, as it was stated before, the very small number of these interventions do not allow a clear interpretation of the results. They seem to be positively associated with Connecting, and particularly with Positive Connecting, but the values obtained should be tested with further research. In the case of Cognitive interventions, instead, it is meaningful to find this positive association, considering all the previously reported associations between this category and the variables related to the patient's

emotional and cognitive regulation (ET, AB, and pET). More precisely, Cognitive interventions are positively associated with Integrated Connecting, and also with Positive Connecting. This double association can be explained by considering the fact that Integrated and Positive Connecting, even though they are mutually exclusive, share the same configuration of the three aforementioned variables: ET > mean(ET), AB > mean(AB), and pET > mean(pET). Not surprisingly, Cognitive interventions are not associated with the discriminative variable, nET (see §4.2.2).

Lastly, according to Hypothesis 3.c, a positive association was expected to be found between Experiential interventions, and Negative Connecting. This hypothesis was advanced considering the fact that these interventions, that are focused on the patient's affective experience, and thus dig deep into her own distressing feelings, might be associated with a negative emotional status in the patient. In fact, Experiential interventions proved to be positively associated with nET in general. On the contrary, the findings do not support this hypothesis: Negative Connecting is not associated at all with Experiential interventions. In fact, it seems like no category of interventions is positively nor negatively associated with this Connecting Type. Considering that there is some research showing that Connecting patterns made of just negative ET seem to be correlated to bad or poor outcome treatments (Mergenthaler, 2003c), and given the fact that "Mag" was considered a good outcome case (see §2.1), Negative Connecting is less likely to appear here. The lack of significant associations between specific categories of interventions and Negative Connecting may be explained by considering that this non-productive pattern can be assumed to emerge independently from a specific category of interventions, rather than from a failure in the use of them. So, generally speaking the role of Experiential interventions can be considered important in the process of facilitating the patient's ability to get in touch with her own affective experience, thus enhancing her emotional arousal, but the findings also suggest that this kind of interventions are not specifically related to the emergence of Negative Connecting patterns.

4.5 Conclusions

The process of combining the theoretical assumptions of cognitive therapy, as they were originally stated by Beck and Ellis, and the theory of change developed by Mergenthaler in the Resonating Minds Theory, allowed to better define the impact of the therapist's interventions in a standard cognitive treatment. Using CPIRS scoring system, in order to classify all the interventions, and the TCM methodology, to analyze the transcripts and observe the patient's emotional-cognitive regulation moment by moment, it was possible to inquire the relationship between specific categories of interventions and the concurrent reaction of the patient to them, in terms of affective experiencing, reflective processes, and also quality of the emotional state.

   More specifically, the first set of hypotheses dealt with the association between the therapist's use of specific categories of interventions, and the levels of Abstraction, Emotional Tone, and positive and negative ET in the patient's response. The findings supported the assumptions: At least in the considered treatment, some configurations of cognitive and emotional responses are statistically associated with specific categories of interventions. Cognitive interventions, that are primarily related to the analysis of the patient's thoughts and their relationship with the affective experience, are positively associated with high levels of Abstraction, Emotional Tone, and positive Emotional Tone in the patient's response, whereas Experiential interventions, that are mainly related to the patient's distressful feelings, are positively associated with high level of Emotional Tone in general, and with negative Emotional Tone in particular.

   The second set of hypotheses had to do with the association between some categories of interventions and the presence of specific Emotion-Abstraction Patterns (EAP) in the patient's response. The results supported this assumption, even though the associations found were not always consistent with the predicted ones: Other interventions are in fact positively associated with the Relaxing pattern, Coaching interventions are associated with the Reflecting pattern, Experiential interventions are associated with the Experiencing pattern, and Cognitive interventions are associated with the Connecting pattern.

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The third set of hypotheses concerned the relationship between the therapist's interventions and the presence of three Connecting Types, differentiated on the basis of the quality of the emotional experience, in the patient's response. Also in this case, the findings only partially support the hypotheses: The data indicate that Cognitive interventions are positively associated with Integrated Connecting, and also with Positive Connecting, but no significant association could be found with regard to Negative Connecting.

Taken together, these findings show that, at least in the analyzed treatment, specific categories of interventions are associated with specific patterns in the patient's response, suggesting the idea that certain interventions do have a direct and to some extent measurable effect on the way in which patients feel, think, and act. This conclusion, however, should be supported by further research: Within the scope of the present study, it was important to gather some preliminary data with a single case study design, in order to develop the methodology and observe if the empirical findings supported the hypotheses of associations between the selected variables. Table 15 shows a summary of all the significant associations that were found, in order to give a clearer idea of the results.

In conclusion, it seems reasonable to affirm that the presented methodology, despite of all the limitations of the study design, may be helpful to better understand the active role played by the therapist's interventions in the highly complex process of therapeutic change.

Table 15. Summary of all the significant positive and negative associations found between the categories of interventions, and the specific variables.

Category of interventions	Variable										
	AB	ET	pET	nET	Rel.	Refl.	Exp.	Conn.	Int. Conn.	Pos. Conn.	Neg. Conn.
Facilitating											
Authoritative Support			+						+		
Coaching		-	+			+		-			
Directive Process											
Structuring		-		-							
Behavioral								+		+	
Cognitive	+	+	+		-			+	+	+	
Experiential		+		+	-		+				
Psychoanalytic Interventions											
Psychodynamic											
Other		-	-		+				-	-	

4.6   Study limitations and future research suggestions

The limitations of this work regard mostly the study design, and the methodology used to provide the findings. First of all, it should be stressed the fact that the presented research is a pilot study: The primary aim was to gather some preliminary data, to see if the conceived methodology of inquiry could be useful for further, more in-depth and detailed research. Second, it is important to point out that the single case design does not allow general conclusions: The results are hardly generalizable. Third, the presence of associations between the considered variables does not permit to infer the presence of a causal relationship. Lastly, it should be mentioned that the methods used, even though they have been largely tested and used in psychotherapy research, present some internal limitations too.

However, despite of all the study limitations, it seems like this kind of procedure may be useful for process-outcome research, because it gives the opportunity to connect the therapist interventions, intended as what the therapist is actually doing in session, with the patient moment by moment response, in terms of emotional and cognitive regulation. Since psychotherapy schools, and the clinicians too, have always been much more interested in the role played by the specific techniques, rather than unspecific ingredients like common factors, it could be worthwhile to develop and carry out a study methodology that would allow to inquire the actual impact on the patient of school-specific interventions.

A suggestion for future research, using a similar methodology, would be to study the relationship between the therapist interventions and the Shift Event concept (Khodayarifard, 2012), thus expanding the complexity of the analysis by adopting a dynamic view of the process. Another interesting development of the presented methodology would be to compare different treatments, belonging to the same or even different orientations, in order to check if the impact of the various categories of interventions on the patient's emotional-cognitive regulation is similar. Finally, it could be productive to take a closer look at the Connecting Type construct, also from a

qualitative point of view, to clarify the concept and to better understand its relationship with therapy outcome.

5. SUMMARY

The present study inquires the relationship between the therapist's interventions, and the patient's emotional-cognitive response towards them, in a standard cognitive treatment, classified as a good outcome case. For the scoring of the therapeutic interventions, the Comprehensive Psychotherapy Interventions Rating Scale (CPIRS) was used, whereas for evaluating the patient's emotional status and cognitive activation the tools provided by the Therapeutic Cycles Model (TCM) were applied.

From a theoretical point of view, both the Resonating Minds Theory (RMT), and the principles of the standard cognitive treatment stress the importance of the role played by the therapist's techniques in bringing about psychotherapy change: Using certain kinds of interventions, the therapist helps the patient overcome his problems, by focusing primarily on cognitive errors and maladaptive ways of thinking, but also on distressful emotions and feelings, that are considered as the main causes of psychological disorders. More specifically, the patient becomes more and more aware of his problematic state, and at the same time he gradually becomes more and more able to reflect upon it, thus facilitating the emerging of problem solving processes.

Although these theoretical notions are usually taken for granted in psychotherapy practice, there is still a lack in psychotherapy research on the role played by the school specific therapeutic techniques: The mechanisms through which the therapist's interventions may lead to relevant changes in the patient's ways of behaving in the real world remain unclear. The present study was primarily conceived as a pilot study, whose aim was to develop a methodology that could be useful to inquire the effect of the therapist's interventions on the patient's cognitive and emotional regulation.

The findings support the clinically relevant notion that certain kinds of interventions may be related to specific reactions of the patient, in terms of emotional and cognitive activation, thus providing ground for psychological change. Therefore, despite the limitations of the study design, the presented methodology was revealed to be useful

in order to better understand the mechanisms of change, and to clarify the effects of the interventions consciously used by the therapist in the psychotherapy sessions.

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APPENDIX: CPIRS – List of items

- *FACILITATING (1)*

1) Empathy

2) Acceptance

3) Involvement

4) Warmth

5) Rapport

- *AUTHORITATIVE SUPPORT (2)*

6) Collaboration

7) Direct reassurance

8) Responsibility outside patient

9) Reformulation of problem

- *COACHING (3)*

10) Supportive encouragement

11) Therapist as expert

12) Therapy rationale

13) Explicit guidance

14) Active control (g.j.)

15) Advice and guidance

16) Didactic approach (g.j.)

- *DIRECTIVE PROCESS (4)*

17) Self-disclosure

18) Exploration of activities, tasks, or solutions to problems the patient can try out him/herself

19) Explain direction in session

20) Summarizing

21) Challenging

- STRUCTURING (5)

22) Setting and following the agenda

23) Assign homework

24) Review homework

25) Scheduling / structuring activities

26) Self-monitoring

- BEHAVIORAL (8)

27) Exploring new ways of behaving with others

28) Therapeutic relationship as a model

29) Skills training

30) Behavioral procedure

- COGNITIVE (9)

31) Cognitive themes

32) Relationship of thoughts and feelings

33) Record and report cognitions

34) Exploring personal meaning of thought

35) Recognizing cognitive errors

36) Identifying underlying assumptions

37) Distancing of beliefs

38) Examine available evidence

39) (Prospective) testing of beliefs

40) Searching for alternative explanations

41) Realistic consequences

42) Adaptive / functional value of beliefs

43) Practicing rational response

- EXPERIENTIAL (10)

44) Emphasizing feelings

45) Subtle guidance

46) Linking interventions to nonverbal cues

47) Focusing on present experience

48) Recognizing and acknowledging unexpressed feelings

49) Eliciting feedback from patient

50) Evocative unfolding of problematic reactions

51) Using therapeutic relationship to explain reactions toward others

- EXPERIENTIAL PROCEDURES (Chair Work) (6)

52) Two-chair dialogue for conflict splits

53) Empty-chair dialogue for unfinished business

- PSYCHOANALYTIC INTERVENTIONS (7)

54) Silence

55) Drawing attention to unacceptable feelings

56) Exploration of past experiences

57) Linking present to past (descriptive)

58) Interpretation of defense

59) Interpretation of warded-off wishes, feelings, or ideas

60) Linking therapeutic to other relationships (transference interpretation)

- PSYCHODYNAMIC (11)

61) Confrontation

62) Patterns in behavior or experience

63) Patterns in relationships

64) Linking hypotheses (descriptive)

- STRATEGIC (12)

65) Paradoxical interventions

66) Applying ritual

67) Ambiguous assignment

- *GROUP DYNAMIC INTERVENTIONS (13)*

68) Deepening individual experience in relation to the group

69) Stimulation of interpersonal communication

70) Personal here-and-now feedback

71) Clarifying interactions and group processes

72) Providing space

- *SYSTEMIC INTERVENTIONS (14)*

73) Intervention focused on participants other than the "patient"

74) Shaping parenting practices

75) Coaching multiparticipant interactions in session

76) Preparing individual participants for upcoming in-session interactions

- *OTHER INTERVENTIONS (15)*

77) Independence

78) Asking information or elaboration

79) Clarification, reformulation in different words

80) Reformulation of behavior in a way not explicitly recognized previously

81) Using metaphors

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