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Underlying Cognitive Mechanisms Associated With the Emotional Work: Analysis of Depressive Patients' Verbal Expressions

Mecanismos Cognitivos Subyacentes Asociados con el Trabajo Emocional: Análisis de Expresiones Verbales de Pacientes con Sintomatología Depresiva

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The narrative of depressed patients is characterized by the type of content verbalized and the cognitive processes involved. The work of contents associated with the patient's emotional experience during the conversation involves 3 communicative patterns (CPs) used to work on emotional contents during change episodes (CEs): affective exploration, attunement and resignification (Valdés, Krause, Tomicic, & Espinosa, 2012). The objective of the study was to analyze patients' and therapists' CPs and verbalized words to determine the underlying cognitive mechanisms (cause, insight, tentative and certainty) involved in the work of emotional contents during CEs which were identified in 2 psychodynamic therapies in Santiago, Chile. The verbal expressions were analyzed using the Therapeutic Activity Coding System (Valdés, Tomicic, Pérez, & Krause, 2010) and the Linguistic Inquiry and Word Count (Pennebaker, Francis, & Booth, 2001). The results demonstrate that cognitive mechanisms play an important role in the process of change, depending on the CP used by the speaker. Therapy promotes a constructive reasoning in which patients eventually adopt some linguistic structures verbalized by their therapists when using the affective resignification pattern.

Keywords: therapy, change episodes, cognitive mechanisms, linguistic style, resignification

El discurso de pacientes depresivos se caracteriza por el tipo de contenidos verbalizados y los procesos cognitivos involucrados. Tres patrones comunicacionales (PCs) son utilizados para trabajar contenidos asociados con la experiencia emocional del paciente en episodios de cambio (ECs): exploración afectiva, sintonía y resignificación (Valdés et al., 2012). El objetivo de este estudio fue analizar los PCs y las palabras verbalizadas por pacientes y terapeutas para determinar los mecanismos cognitivos subyacentes (causa, insight, tentativa y certeza) involucrados en el trabajo con contenidos emocionales durante los ECs identificados en 2 terapias psicodinámicas realizadas en Santiago, Chile. Las expresiones verbales fueron analizadas con el Sistema de Codificación de la Actividad Terapéutica (Valdés et al., 2010 y el Buscador Lingüístico y Contador de Palabras (Pennebaker et al., 2001). Los resultados demostraron que los mecanismos cognitivos juegan un rol importante en el proceso de cambio, dependiendo del PC utilizado por el hablante. La terapia promueve un razonamiento constructivo durante la cual los pacientes terminan adoptando algunas estructuras lingüísticas verbalizadas por sus terapeutas cuando ambos utilizaban el patrón de resignificación afectiva.

Palabras clave: episodios de cambio, mecanismos cognitivos, estilo lingüístico, resignificación

During the therapeutic conversation, therapists' and patients' verbal expressions take the form of *communicative patterns* (CPs), which allow them to coordinate communication within themselves and with the other participant during the therapeutic activity (Valdés, Krause, Tomicic, & Espinosa, 2012) and, more specifically, during their work on emotional contents in *Change Episodes* (CEs). These patterns make it possible not only to characterize patients' and therapists' verbalizations within each phase and throughout the therapeutic process, but also to differentiate the type of therapeutic activity performed during CEs and *Stuck Episodes* (SEs; Valdés, 2012). Also, the evidence accumulated in the last three decades shows a correlation between physical and mental health and the types of words used during conversation (Lepore & Smyth, 2002; Niederhoffer & Pennebaker, 2002; Pennebaker, 1997; Stiles, 1992), reflecting the way psychological processes are structured.

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Simultaneously, underlying cognitive processes during the therapy show a specific effect in breaking the link between affect and cognition in depressed patients, so that negative mood induction is less likely to reactivate negative beliefs and assumptions (Beevers & Miller, 2005). The Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2001) was used in this study to identify the underlying cognitive processes depending on the words used by the participants of the therapeutic conversation.

Assuming psychotherapy as a process that includes phases characterized by certain activities leading to achievement of specific goals (Hill & O'Brien, 1999; Meier, Boivin, & Meier, 2008) and assuming that speakers' linguistic styles reflect the *cognitive mechanisms* necessary for working on certain contents during relevant moments of the therapy, this study analyzed patients' and therapists' CPs involved in the work of emotional contents during CEs, as well as the words verbalized in order to determine the underlying cognitive mechanisms (cause, insight, tentative, and certainty), and how speaking about certain emotional contents during the therapy influences the patients' physical and mental health.

Studying the Importance of Therapeutic Conversation

In psychotherapy research there is a growing interest in the process through which interpersonal relationships are configured and, specifically, in how emotions are exchanged via verbal expressions, which results in a specific relationship form between patient and therapist. Evidence suggests that successful therapies are distinguished by certain specific affective exchanges and the emotional experience present in the dyad (Jones, 2000; Karlsson & Kermott, 2006). Thus, speaking about certain emotional contents influences the patient's physical and mental health. Doubting this would be tantamount to doubting the effectiveness of psychotherapy (Pennebaker, Mehl, & Niederhoffer, 2003; Valdés, 2012; Valdés et al., 2012).

The most concrete description of emotional expression at the verbal level is the use of words referencing emotional contents and, in this sense, human language is a powerful producer of labels for emotional expression (Schröder, 2003). The ability to use words expressing emotional contents is associated with automatic valuations and involuntary physiological changes. This ability allows individuals to regulate what they are thinking and feeling, and to express it verbally. However, it is not simple to access the subjective experiences of others, as each emotion belongs to a family of related emotional contents and not to a specific type of emotion (Ekman, 1999). Also, the fact that some verbal expressions are recognized as a sign of certain emotions does not necessarily mean that they are the result of an underlying affective state.

A person's linguistic style may display a subjective way of understanding (Pennebaker & King, 1999; Valdés, Krause, & Álamo, 2011), and may also be an indicator of certain characteristics of his/her personality and social processes (Pennebaker et al., 2003). However, the most important aspect is that the words that a person uses in conversation have a deep impact on the listener, because, if he/she can consciously decide which words to use when conveying different contents, the other participant may process such words consciously or unconsciously.

The evidence suggests that therapy does not reduce depressive persons' tendency to generate negative thoughts in distressing situations, but rather inculcates a set of skills that help them to deal with these thoughts (Barber & DeRubeis, 1989).

Analyzing the Speaker's Verbalizations

The therapeutic process appears to draw mainly on explicit conscious work and tries to describe the world in conceptual terms by capturing a logical or causal structure (Kahneman, 2003). Hollon and Garber (1988) suggested that patients might have to acquire a facility for logical reasoning that is superior to that of the majority of the population.

Text analyses have been used to identify multiple psychological dimensions in speakers' discourse. Working on disclosure writing, Pennebaker et al. (2001) developed the LIWC, a text analysis strategy that counts the words subjects use in their discourse. This approach has not only made it possible to establish differences between a series of medical and psychiatric diagnoses (Bucci, 1997; Mergenthaler, 1996; Stein, Folkman, Trabasso, & Richards, 1997), but has also helped to characterize certain cognitive processes (Lee, Park, & Seo, 2006), emotional processes (Kahn, Tobin, Massey, & Anderson, 2007), and personality traits (Mehl, Gosling, & Pennebaker, 2006). It has also contributed to demonstrate that people can improve their psychological wellbeing after writing about traumatic experiences (Chung & Pennebaker, 2007; Graybeal, Sexton, & Pennebaker, 2002; Slatcher, Vazire, & Pennebaker, 2008; Stirman & Pennebaker, 2001).

The LIWC program captures and calculates percentages of words in a text according to a variety of linguistic and psychological categories and subcategories, which make it possible to describe certain subjects' linguistic style characteristics and predict their wellbeing. However, the most frequent criticism about word use is that most studies were conducted following a specific therapeutic approach, often considering only one participant, and not analyzing the nature of language in itself.

With this in mind, this study proposes a view of therapeutic language including both the performance of actions by the two participants when they speak and the transmission of contents which are directly associated with the object of therapeutic work. This notion of verbal communication makes it possible to analyze therapeutic activity by identifying variable actions whereby patients and therapists influence each other without losing the track of content, as both dimensions participate in the construction of psychological change. The Therapeutic Activity Coding System (TACS-1.0; Valdés et al., 2010) was used to do this, since it has proven to be a tool capable of accounting for the complexity and multidimensionality of communicative interaction in psychotherapy. This system is based on a performative view of language and includes parallel and non-inclusive dimensions of analysis which make it possible to extend the notion of "saying is doing" (Reyes et al., 2008). Patient and therapist verbalizations were termed *communicative actions*, because they have the double purpose of conveying information (contents) and influencing the other participant and the reality constructed by both (action). Therefore, this classification system considers both the influence and the content of communicative actions.

The analysis of communicative actions and some characteristics of patients' and therapists' *linguistic styles* during the therapeutic conversation in CEs have revealed that the LIWC contains categories and subcategories which facilitate a more micro-analytic view of the content dimension of the TACS-1.0, but which is also consistent with it (Valdés et al., 2011). Also, some results show an association between certain linguistic/psychological characteristics and the participant's role. The patients use more personal pronouns in the first person singular, positive emotional contents, and words that reflect causality-related cognitive sub-processes, while therapists tend to use personal pronouns in the second person singular, negative emotional contents, and words that reflect insight-related cognitive sub-processes (Valdés, 2010).

The main hypotheses of this study were: (a) cognitive mechanisms underlying the use of the different CPs for working on emotional contents during CEs are different in patients compared to therapists and (b) those cognitive mechanisms are different at the initial, middle, and final phases of the psychotherapeutic process. These hypotheses were formulated; however, it was difficult to predict their direction because of the research design developed.

Method

The present study met micro-process research criteria, since it focused on the analysis of segments of the session regarded as relevant for change and which function as "windows" into the therapeutic process (Elliott & Shapiro, 1992). Nevertheless, it also focused specifically on patients' and therapists' verbalizations which foster such change at a communicative and a linguistic level.

Sample

Two brief weekly individual psychodynamic therapies (A and B) conducted in a Santiago (Chile) private therapeutic center were analyzed (see Table 1). There was not a specific reason for selecting this approach. To obtain a homogeneous sample, patients and therapists were selected according to the following criteria: (a) same gender in each role, (b) same therapeutic approach, (c) therapists with 10 to 30 years of professional experience, and (d) patients with depressive symptoms. The patients were intentionally selected by professionals at the center and both gave their informed consent to participate.

All sessions in both therapies were included, during which 38 CEs and 19 SEs were identified, delimited, transcribed, and analyzed to identify in them the CPs more frequently used for working on emotional contents. Each episode was made up by patients' and therapists' speaking turns, which began with the start of one participant's verbalization and ended with the other's start (Krause, Valdés, & Tomicic, 2009). Moreover, each speaking turn was divided into speech segments coded with a type of content (cognitive, affective or behavioral). Therefore, the total sample comprised 222 speech segments coded with emotional contents, 161 of them CEs and 61 SEs.

Table 1
Characteristics of the Sample

	Therapy A	Therapy B
Patient	Woman	Woman
Age	38	43
Focus of therapy	Developing separation and recent losses mourning	Expression of needs; strengthen autonomy and increase quality of relationships
Psychotherapeutic approach	Psychodynamic	
Therapist	Man	Man
Total number of sessions (N = 39)	18	21
Change Episodes (N = 38)	14	24
Speaking turns (N = 825)	352	473
Total number of speech segments (N = 1016)	437	579
Speech segments coded with any type of content (N = 692)		
Speech segments coded with emotional contents (N = 161)	80	81
Stuck Episodes (N = 19)	7	12
Speaking turns (N = 449)	213	236
Total number of speech segments (N = 581)	289	292
Speech segments coded with any type of content (N = 383)		
Speech segments coded with emotional contents (N = 61)	45	16

Note. The same sample was used in Valdés et al. (2012).

Therapeutic outcome was estimated using the Outcome Questionnaire, developed by Lambert et al., (1996) and validated for Chile by Von Bergen and de la Parra (2002). The interpretation of the results was based on a Reliable Change Index (RCI; Jacobson & Truax, 1991), which determines whether the patient's change at the end of the treatment was clinically significant (RCI for Chile = 17). In this case, Patient A started the therapy with a total score of 68 and ended it with 48.4 (RCI = 19.6), whereas Patient B started the therapy with a total score of 111 and ended it with 91 (RCI = 20). This means that both patients displayed a significant degree of change, even though Patient A started below the cut-off score and Patient B, above it.

From the perspective of Generic Change Indicators (GCIs; Krause et al., 2007), both therapies were successful, considering the number of change moments during the session and their level in the hierarchy of indicators (Altimir et al., 2010; Echávarri et. al., 2009). The largest percentage of change indicators was associated with an increase in the patients' openness to new forms of understanding (Level II). The consolidation of the structure of the therapeutic relationship (Level I) was more frequent during the initial phase of the therapy; also, both patients were capable of constructing and consolidating a new way of understanding themselves (Level III). Therefore, it can be concluded that both therapies displayed a positive evolution from the point of view of GCIs.

Variables, Measures, and Procedures

Delimitation of CEs and SEs. Both therapies were audio-visually recorded and observed through a one-way mirror by expert raters trained in the observation and detection of change moments using GCIs (Krause et al., 2007). As shown in Figure 1, the moment of change marks the end of the episode and must meet the criteria of theoretical correspondence, novelty, topicality, and consistency; that is, it must match one of the indicators from the list of GCI: be new, occur during the session, and persist over time. Afterwards, using a thematic criterion, the beginning of the therapeutic interaction referring to the content of the change moment is tracked to define the start of the CE (Valdés et al., 2005).

In the case of SEs, it was necessary to identify the existence of periods of the session in which there was a temporary halting of the patient's change process due to a reissue of the problem, that is, episodes

characterized by a lack of progressive construction of new meanings or an argumentative persistence in the patient's discourse which did not contribute to the objective of change (Herrera et al., 2009). A SE must match one of the topics from the list of Stuck Episode Topics, occur during the session, and be nonverbally consistent with the topic of the stuck period. In addition, SEs must comply with the following methodological criteria: be at least three minutes long and over 10 minutes apart from a CE in the same session.

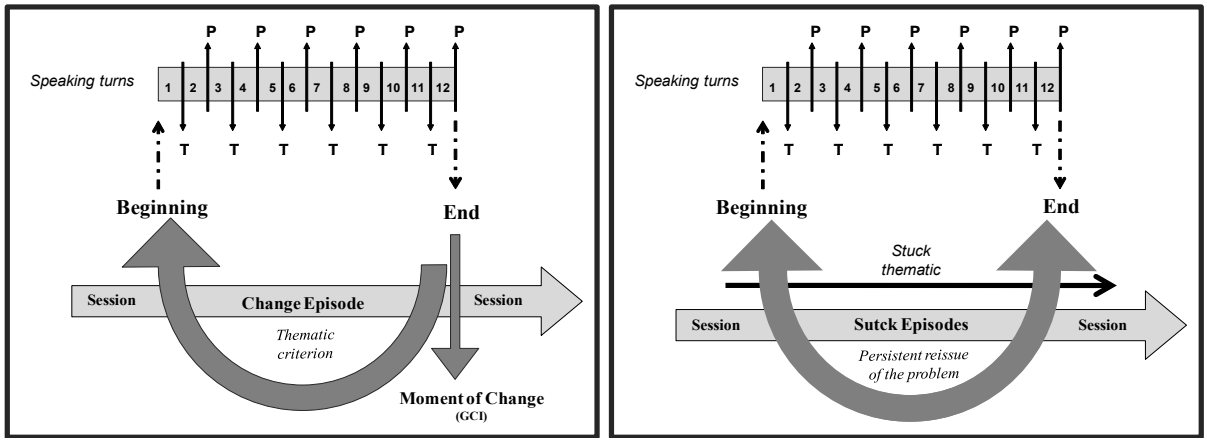

Figure 1. Change and stuck episodes delimitation. T = therapist, P = patient, GCI = Generic Change Indicators.

Configuration of communicative patterns. During CEs and SEs, in each speaking turn segment patients' and therapists' verbalizations were manually coded with the TACS-1.0 (Valdés et al., 2010). This system is made up by five categories of analysis: three from the *action* dimensions and two from the *content* dimensions (see Figure 2). The categories, which include 22 action codes, are: *basic form* (formal structure of the utterance), *communicative intention* (communicative purpose expressed during the utterance), and *technique* (methodological resources present in the utterance, some of which coincide with therapeutic techniques, while others are typical of everyday interaction). On the other hand, the nine content codes are: *domain* (whether the object of therapeutic work is mostly cognitive, affective, or behavioral) and *reference* (protagonist of the object of therapeutic work). These five categories and the 31 codes that they include were developed using, firstly, a discovery-oriented methodology, followed by inter-rater reliability studies which showed good agreement indexes.

In order to evaluate the coders' degree of agreement, 15% of the total number of segments was randomly selected (N = 268). The coding was independently performed by trained coders (two psychologists with 2-5 years of clinical experience), following the manual prepared for this process. Cohen's Kappa for each of the five TACS-1.0 categories were: basic form $K = 0.92$, $p < 0.001$, communicative intention $K = 0.74$, $p < 0.001$, technique $K = 0.53$, $p < 0.001$, domain $K = 0.73$, $p < 0.001$, and reference $K = 0.79$, $p < 0.001$. Coders obtained a lower reliability in the technique category due to the large number of codes, but also because according to the coding manual this is the only category that may appear uncoded. However, because this category was not considered in the structural level of the patterns studied, its lower reliability did not affect our research.

Once all speaking turns in both episode types were coded, the resulting code configuration of each of them was analyzed. This combination was termed CP, and was made up by three digits according to the following TACS-1.0 codes: basic form, communicative intention, and domain category, respectively. This combination of communicative actions is referred to as *structural level*, and corresponds to specific contents associated with the object of therapeutic work, which is transmitted with a certain purpose and using a particular formal structure (for illustrative examples, see Table 2).

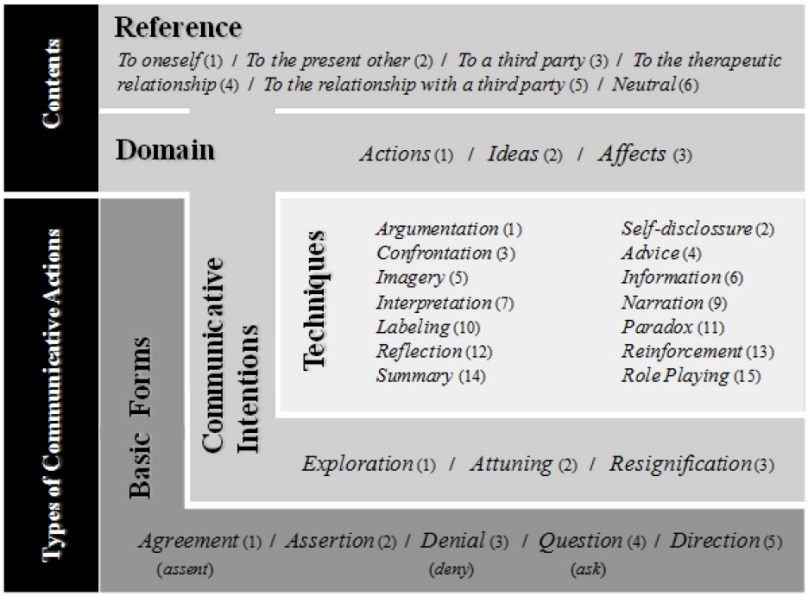

Figure 2. TACS-1.0 (Valdés et al., 2010) dimensions, categories, and codes.

Identifying the cognitive mechanisms. The words uttered by patients and therapists during their speaking turns in CEs and SEs were analyzed using the Spanish version of the LIWC (Ramírez-Esparza, Pennebaker, García, & Suriá, 2007). This system has 72 linguistic categories grouped into five broad dimensions: (a) standardized linguistic categories (pronouns, negations, assertions, articles, prepositions, and numbers); (b) categories referencing psychological processes (cognitive, affective, sensory-perceptual, and social); (c) categories referencing relativity (time, space, and movement); (d) categories referencing personal contents (job, pleasurable activities, and physical states, among others); and (e) experimental categories (fillers, hesitations, etc.). The Spanish version employs a dictionary with 7515 words and word roots.

According to the purpose of this research, only the cognitive mechanisms subcategory of the psychological processes category was used. Each speech segment text ($N = 222$) was analyzed to identify words referencing three cognitive mechanisms: (a) *cause*: words reflecting the presence of a basic cognitive skill involving the speaker's attempts to explain something through an underlying logical pattern to connect the reasons behind certain phenomena or processes and their effects (e.g., therefore, because, motive); (b) *insight*: words revealing the speaker's increased awareness or deeper understanding of the central aspects of the meaning ascribed to a certain content previously inaccessible but now experienced as novel (e.g., face, admit, believe); (c) *tentativeness*: words showing the speaker's consideration of different alternative meanings for certain contents (e.g., maybe, for example, consider); and (d) *certainty*: words revealing the speaker's increased assurance about something that he/she regards as true and which he/she does not doubt (e.g., never, always, assurance).

Although the LIWC has not been used to analyze patients' and therapists' linguistic style based on transcriptions of therapeutic conversation, previous studies with different types of texts have shown high consistency (Alpers et al., 2005; Mehl & Pennebaker, 2003; Pennebaker & King, 1999) and high correlations in most categories of both versions, which indicates an adequate degree of correspondence (Ramírez-Esparza et al., 2007).

Table 2
Characteristics of the Communicative Patterns Used to Work on Emotional Contents

Communicative pattern	Code	Characteristic	Example
Affective exploration	CP_{213}	Only used by patients, regardless of the type of episode. Characterized by assertions used to convey a content, clarify it, and/or direct the other participant's attention to certain emotional contents during the therapeutic conversation.	P: *The thing is there, whether it hurts or not. I mean, I can't do anything. I don't think that I can't, I won't do anything else because he's so ambiguous. I don't want this anymore, this hurts.*
Affective attunement	CP_{223}	Only used by therapists, regardless of the type of episode. Characterized by assertions used to show understanding, generate harmony, or provide feedback about certain emotional contents verbalized by the patients during the therapeutic conversation.	T: I*t seems that… what you're feeling is that I don't care.*
Affective resignification	CP_{233}	Used by both participants during CEs, but only by therapists during SEs. Characterized by assertions used to co-construct and/or consolidate new meanings for certain emotional contents during the conversation.	P: *I think I've always put myself in second place, but I had never felt that I was being undervalued. Maybe I haven't seen my true value and have been unable to go ahead with what I have.* T: *So what I think is that you are afraid of what may happen due to your actions, such as progressing, and you stop coming, and start procrastinating.*

Note. Results presented in Valdés (2012). EC = change episode, SE = stuck episode, P = patient, T = therapist.

Data Analyses

Data analysis involved the *Z-ratio* to compare independent proportions, estimating 95% confidence intervals (CI) when the value of Z could not be estimated. If 0% is not a value of the interval, then it can be said with 95% of confidence that the difference of proportions between CEs and SEs is significant. The *Z-ratio* calculation was performed only if both samples satisfied the standard binomial requirement: $n\,(p)$ and $n\,(1 - p) \geq 5$.

Results

Communicative Patterns Present Within CEs and SEs

A comparison of CEs and SEs according to the proportion of the patterns used to work on emotional contents revealed that, regardless of the participant's role (patient or therapist), there was a higher proportion of *Affective Exploration* during SEs and a higher proportion of *Affective Resignification* during CEs. However, there were no differences in the proportion of *Affective Attunement* (see Table 3).

Table 3
Comparison of the Proportion of Each Communicative Pattern, by Episode Type

Communicative pattern (CP)	CE	SE	Difference %	95% CI	Z	*p*
Regardless of the role (patient or therapist)						
Total of affective exploration	26.09 (42)	57.38 (35)	31.29	[16.84, 44.44]	4.373	< 0.001
Total of affective attunement	12.42 (20)	4.92 (3)	7.50	[-2.06, 14.31]	–	> 0.050
Total of affective resignification	61.49 (99)	37.70 (23)	23.79	[9.06, 36.99]	3.180	0.001
Patients						
Affective exploration	53.16 (42)	100.00 (35)	46.84	[32.34, 57.73]	–	< 0.050
Affective resignification	46.84 (37)	0.00 (0)	46.84	[32.34, 57.73]	–	< 0.050
Therapists						
Affective attunement	24.39 (20)	11.54 (3)	12.85	[-6.34, 25.62]	–	> 0.050
Affective resignification	75.61 (62)	88.46 (23)	12.85	[-6.34, 25.62]	–	> 0.050

Note. CE = change episode, SE = stuck episode.

Considering the participant's role, Affective Exploration was statistically more frequent among patients during SEs, but it was also the only pattern they used to work on emotional contents in this episode type. Affective Resignification was only employed by the patients during CEs, whereas the therapists displayed a similar proportion of Affective Attunement and Affective Resignification in both episode types.

Cognitive Mechanisms Used by Patients and Therapists

The LIWC reliably captured 87.14% of the words uttered by patients and therapists (N = 8227 words) during the 161 text segments present in the 38 CEs analyzed and 86.73% of the words uttered by patients and therapists (N = 3106) during the 61 text segments present in the 19 SEs considered. When applied to the total number of words uttered during CEs according to the participants' role, the LIWC captured 85.53% of all the patients' words (N = 4622) and 86.33% of all the therapists' words (N = 3605). A similar situation was observed in SEs, as the LIWC captured 85.95% of the patients' words (N = 1826) and 87.79% of the therapists' words (N = 1280).

Since each of the text segments analyzed may or may not contain one of these cognitive mechanisms or include more than one cognitive mechanism, the total number of times that patients and therapists used each CP was considered to be 100%, in order to calculate the percentage of each cognitive mechanism (*cause*, *insight*, *tentativeness*, and *certainty*) during the speakers' use of each pattern.

As shown in Table 4, during CEs there were no differences between patients and therapists in terms of the cognitive mechanisms present during the Affective Resignification of emotional contents. When SEs were analyzed in order to contrast them with CEs, no differences were observed in the cognitive mechanisms used by patients when using Affective Explorations. Similarly, the comparison of both episode types did not reveal any differences in the cognitive mechanisms used by therapists when performing Affective Attunement and Affective Resignifications.

Table 4
Comparison of the Proportion of Cognitive Mechanisms Present in Each Communicative Pattern, by Episode Type and Participant's Role

Communicative pattern	CE	SE	Difference %	95% CI	Z	*p*
Affective exploration						
Cause (P) - Cause (P)	61.90 (26)	62.86 (22)	0.95	[-20.13, 21.52]	0.086	0.931
Insight (P) - Insight (P)	59.52 (25)	60.00 (21)	0.48	[-20.74, 21.32]	0.042	0.967
Tentative (P) - Tentative (P)	61.90 (26)	62.86 (22)	0.95	[-20.13, 21.52]	0.086	0.931
Certainty (P) - Certainty (P)	47.62 (20)	37.14 (13)	10.48	[-11.35, 30.73]	0.925	0.355
Affective attunement						
Cause (T) - Cause (T)	25.00 (5)	0.00 (0)	25.00	[-32.82, 46.87]	–	> 0.050
Insight (T) - Insight (T)	40.00 (8)	33.33 (1)	6.67	[-42.68, 41.23]	–	> 0.050
Tentative (T) - Tentative (T)	30.00 (6)	33.33 (1)	3.33	[-31.57, 51.77]	–	> 0.050
Certainty (T) - Certainty (T)	20.00 (4)	33.33 (1)	13.33	[-21.39, 60.76]	–	> 0.050
Affective resignification						
Cause (T) - Cause (T)	41.94 (26)	52.17 (12)	10.24	[-12.63, 32.07]	0.843	0.399
Insight (T) - Insight (T)	54.84 (34)	56.52 (13)	1.68	[-21.26, 23.36]	0.139	0.889
Tentative (T) - Tentative (T)	46.77 (29)	47.83 (11)	1.05	[-21.21, 23.63]	0.086	0.931
Certainty (T) - Certainty (T)	29.03 (18)	30.43 (7)	1.40	[-17.84, 24.07]	0.126	0.900
Communicative pattern (CP)	P	T	Difference %	95% CI	Z	*p*
Affective resignification during CE						
Cause (P) - Cause (T)	54.05 (20)	41.94 (26)	12.12	[-7.86, 30.92]	1.170	0.242
Insight (P) - Insight (T)	56.76 (21)	54.84 (34)	1.92	[-17.80, 20.99]	0.186	0.852
Tentative (P) - Tentative (T)	59.46 (22)	46.77 (29)	12.69	[-7.44, 31.19]	1.222	0.222
Certainty (P) - Certainty (T)	37.84 (14)	29.03 (18)	8.81	[-9.63, 27.63]	0.906	0.365

Note. P = patient, T = therapist, CE = change episode, SE = stuck episode.

The cognitive mechanisms present in the CPs used by patients and therapists to work on emotional contents did not provide enough evidence to establish differences between both episode types; therefore, the first hypothesis was not supported. The next step was to analyze the proportion of CPs and cognitive mechanisms within each phase of the psychotherapeutic process.

Cognitive Mechanisms Present in CEs Between Therapeutic Phases

Each therapy was divided into three phases, depending on their total number of sessions. The initial phase was made up by 13 CEs (A = 5, B = 8), the middle phase, by 14 CEs (A = 4, B = 10), and the final phase, by 11 CEs (A = 5, B = 6). Compared with the initial phase (70.00%), the patients performed fewer affective explorations in the final phase (31.58%), $Z(N = 49) = 2.635$, $p = 0.008$ (see Figure 3).

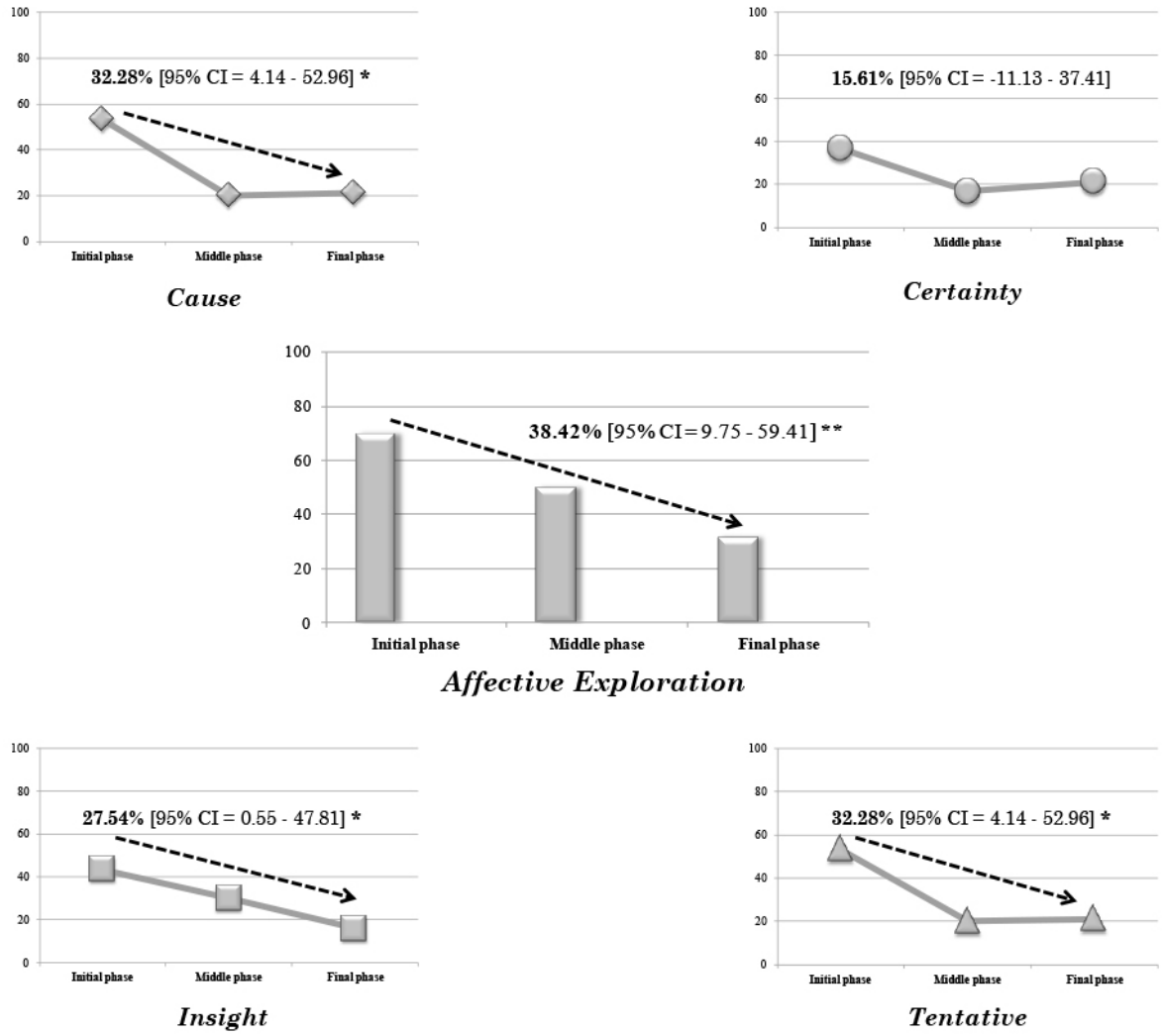

Figure 3. Cognitive mechanisms underlying the Affective Exploration during CEs, by therapeutic phase. The arrows indicate a statistically significant difference between the final and initial phases. * $p < 0.050$, ** $p < 0.001$.

The results showed that patients' Affective Explorations during the initial phase displayed more words reflecting both *cause* and *tentative* than in the middle phase (see Table 5). Although no differences were observed between the middle and the final phases in these cognitive mechanisms, they were 32.28% less frequent during the final phase compared to the initial phase. Compared to the initial phase, affective explorations with words reflecting *insight* were 27.54% less frequent during the final phase, even when there were no differences between the therapeutic phases. There were no other differences regarding Affective Explorations with words reflecting *certainty* (see Table 5).

Table 5
Comparison of the Distribution of Cognitive Mechanisms During Each Communicative Pattern Used by Patients and Therapists During Change Episodes

Communicative pattern	Initial phase	Middle phase	Final phase	Difference %	95% CI	*Z*	*p*
Patients							
Affective exploration							
Cause	53.33 (16)	20.00 (6)		33.33	[8.94, 52.83]	2.679	0.007
Insight	43.33 (13)	30.00 (9)		13.33	[-10.63, 35.31]	1.072	0.284
Tentative	53.33 (16)	20.00 (6)		33.33	[8.94, 52.83]	2.679	0.007
Certainty	36.67 (11)	16.67 (5)		20.00	[-2.46, 40.11]	1.752	0.080
Cause		20.00 (6)	21.05 (4)	1.05	[-20.32, 25.68]	–	> 0.050
Insight		30.00 (9)	15.79 (3)	14.21	[-11.32, 34.83]	–	> 0.050
Tentative		20.00 (6)	21.05 (4)	1.05	[-20.32, 25.68]	–	> 0.050
Certainty		16.67 (5)	21.05 (4)	4.39	[-16.66, 28.54]	–	> 0.050
Cause	53.33 (16)		21.05 (4)	32.28	[4.14, 52.96]	–	< 0.050
Insight	43.33 (13)		15.79 (3)	27.54	[0.55, 47.81]	–	< 0.050
Tentative	53.33 (16)		21.05 (4)	32.28	[4.14, 52.96]	–	< 0.050
Certainty	36.67 (11)		21.05 (4)	15.61	[-11.13, 37.41]	–	> 0.050
Affective resignification							
Cause	6.67 (2)	30.00 (9)		23.33	[3.52, 41.85]	–	< 0.050
Insight	10.00 (3)	26.67 (8)		16.67	[-3.33, 35.61]	–	> 0.050
Tentative	6.67 (2)	33.33 (10)		26.67	[6.33, 45.19]	–	< 0.050
Certainty	0.00 (0)	26.67 (8)		26.67	[9.79, 44.45]	–	< 0.050
Cause		30.00 (9)	47.37 (9)	17.37	[-9.48, 42.18]	1.229	0.219
Insight		26.67 (8)	52.63 (10)	25.96	[-1.49, 49.57]	1.837	0.066
Tentative		33.33 (10)	52.63 (10)	19.30	[-8.23, 43.80]	1.339	0.181
Certainty		26.67 (8)	31.58 (6)	4.91	[-19.15, 30.57]	0.371	0.711
Cause	6.67 (2)		47.37 (9)	40.70	[15.88, 62.17]	–	< 0.050
Insight	10.00 (3)		52.63 (10)	42.63	[16.52, 63.71]	–	< 0.050
Tentative	6.67 (2)		52.63 (10)	45.96	[20.42, 66.57]	–	< 0.050
Certainty	0.00 (0)		31.58 (6)	31.58	[11.79, 53.99]	–	< 0.050
Therapists							
Affective resignification							
Cause	18.18 (6)	36.36 (8)		18.18	[-5.04, 40.97]	1.516	0.129
Insight	36.36 (12)	45.45 (10)		9.09	[-16.07, 33.51]	0.674	0.500
Tentative	39.39 (13)	31.82 (7)		7.58	[-17.95, 30.50]	0.572	0.567
Certainty	21.21 (7)	13.64 (3)		7.58	[-14.76, 26.35]	–	> 0.050
Cause		36.36 (8)	44.44 (12)	8.08	[-18.60, 32.77]	0.572	0.567
Insight		45.45 (10)	44.44 (12)	1.01	[-25.00, 27.08]	0.071	0.943
Tentative		31.82 (7)	33.33 (9)	1.52	[-24.00, 25.89]	0.112	0.911
Certainty		13.64 (3)	29.63 (8)	15.99	[-8.04, 36.83]	–	> 0.050
Cause	18.18 (6)		44.44 (12)	26.26	[2.88, 46.86]	2.208	0.027
Insight	36.36 (12)		44.44 (12)	8.08	[-15.88, 31.18]	0.636	0.525
Tentative	39.39 (13)		33.33 (9)	6.06	[-17.84, 28.47]	0.485	0.628
Certainty	21.21 (7)		29.63 (8)	8.42	[-13.11, 30.01]	0.749	0.454

Note. The *Z-ratio* calculation was performed only if both samples satisfied the standard binomial requirement: $n\ (p)$ and $n\ (1 - p) \geq 5$. The results about the *Affective Attunement* shown by therapists during the process were not included in the table, because there were no statistically significant differences between the phases.

The patients performed a larger proportion of Affective Resignifications during the final phase (68.42%), in comparison with the initial phase (30.00%), $Z(N = 49) = 2.635$, $p = 0.008$ (see Figure 4). No differences were observed between the initial and the middle phase, as well as between the middle and the final phases in terms of Affective Resignifications with words revealing *insight*. However, in comparison with the initial phase, the following was observed: (a) words reflecting *cause* were 23.33% more frequent during the middle phase, (b) words reflecting *tentative* were 26.67% more frequent during the middle phase, and (c) words reflecting *certainty* were 26.67% more frequent during the middle phase (see Table 5).

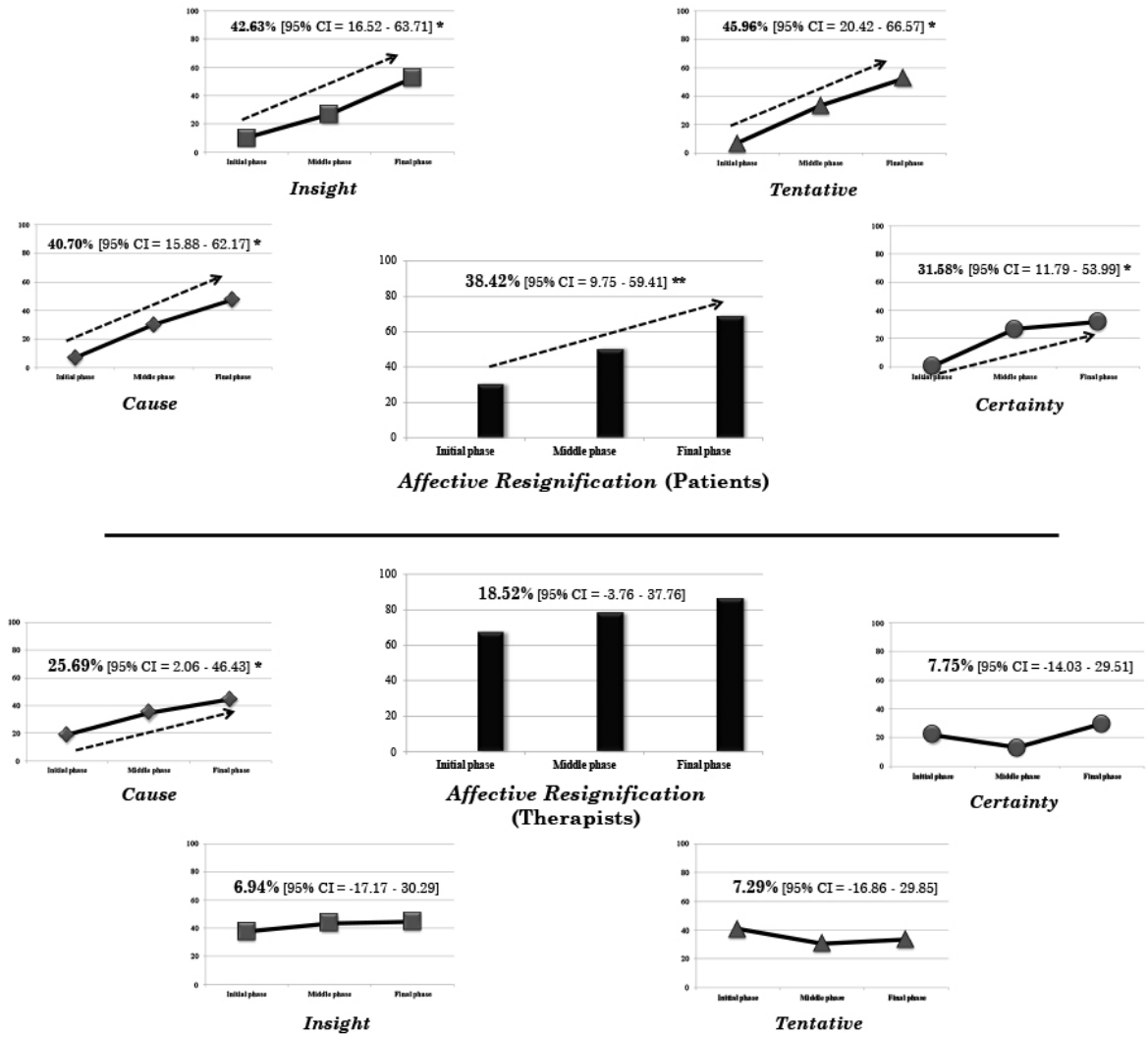

Figure 4. Cognitive mechanisms underlying the Affective Resignifications during CEs, by therapeutic phase. The arrows indicate a statistically significant difference between the final and initial phases. * $p < 0.050$, ** $p < 0.001$.

Although no differences were observed between the middle and the final phases regarding the cognitive mechanisms of Affective Resignifications used by patients, when comparing the final with the initial phase: (a) words reflecting *cause* were 40.70% more frequent, (b) words reflecting *insight* were 42.63% more frequent, c) words reflecting *tentativeness* were 45.96% more frequent, and (d) words reflecting *certainty* were 31.58% more frequent (see Table 5).

No differences were observed throughout the therapeutic process, $p > 0.050$, in terms of the cognitive mechanisms present in the therapists' discourse while showing Affective Attunement and performing Affective Resignifications to their patients during CEs. Likewise, no differences were found regarding the presence of words reflecting *cause*, *insight*, *tentative*, and *certainty* while they use this CP. However, when comparing the final with the initial phase, therapists' Affective Resignifications with words reflecting *cause* were 25.69% more frequent (see Table 5). Based on these findings, the second hypothesis was supported: there were differences in the cognitive mechanisms underlying the use of different CPs during CEs, depending on the speaker's role and the phase of the therapy.

Discussion

Despite intensive research on the psychotherapeutic process, we are still a long way from completely understanding the mechanisms of change. However, cognitive processes have played a fundamental role in advancing our knowledge of psychopathology and its treatment, specifically in the form of cognitive mechanisms that promote psychotherapeutic change during therapy (Ingram, 2007).

The first important finding was that cognitive mechanisms (*cause*, *insight*, *tentative*, and *certainty*), present during the use of CPs (Affective Exploration, Affective Attunement, and Affective Resignification), did not provide enough information to distinguish CEs from SEs. Because no differences between patients and therapists were observed within CEs in terms of the cognitive mechanisms present during their Affective Resignifications, it could be inferred that these mechanisms are present during the therapeutic conversation regardless of the participant's role and the type of episode, and that they are involved in all sorts of verbal expressions during therapeutic activity: from verbalizations performed in order to review, select, and transmit information connected with the emotional contents worked on during the session, to verbalizations carried out to establish new connections between the elements of the patients' personal histories. However, the main finding of this study was that the chief differences between these cognitive mechanisms were found within each CP and each phase and throughout the therapeutic process.

The study confirmed the notion that meaning is not something static contained in the words that a person uses, but a product of the way in which words are employed to regulate communication (Nitti, Ciavolino, Salvatore, & Gennaro, 2010). This is why patients' and therapists' verbalizations were analyzed in terms of the semantic contents present during their use of CPs, that is, considering the context in which such verbalizations were performed (Gonzales, Hancock, & Pennebaker, 2010; Nightingale & Cromby, 1999; Pickering & Garrod, 2004).

The patients constructed and/or consolidated new meanings for certain emotional contents (Affective Resignifications) throughout the therapy, verbalizing words that allowed them to communicate their growing awareness of certain aspects of such contents, previously inaccessible, but gradually perceived as novel (*insight*). This is especially significant considering that depression is a disease in which distorted schemas of thinking in the expression of affect are activated. Therefore, lifting of depression through cognitive mechanisms leads to the disappearance of depressive symptoms and the development of appropriate patterns for an optimal psychological wellbeing (Nasser-Karam & Karam, 1992). Also, more self-knowledge is associated with the patient's change during the therapeutic process (Connolly-Gibbons et al., 2009; Palma & Cosmelli, 2008), especially when studies have demonstrated that self-understanding changes significantly more in dynamic psychotherapy compared to other treatment modalities and that change in self-understanding across treatment predicts the therapeutic outcome (Høglend, Engelstad, Sørbye, Heyerdahl, & Amlo, 1994; Kivlighan Jr., Multon, & Patton, 2000).

During the last therapeutic phase, the patients' Affective Resignifications accompanied by words reflecting *cause*, *insight*, *tentative*, and *certainty* were as frequent as the therapists' Affective Resignifications. It could be advanced that the patients, as the therapy progresses, adopt not only some of the CPs used by the therapists, but also certain linguistic structures employed by them while applying these patterns during the conversation. This phenomenon became more evident between the initial and middle phases, and may be regarded not only as a communicative indicator of a change in the patients' way of interpreting their experience (Christopher & Bickhard, 2007; Gennaro et al., 2010), but also as a sign of the presence of semantic tracking (Valsiner, 2001) or structural priming (Bock, Dell, Chang, & Onishi, 2007; Branigan, Pickering, & Cleland, 2000), during which there may exist some degree of coordination and modification of verbal expression, as a mechanism for adapting to the therapist (Ireland & Pennebaker, 2010; Pickering & Garrod, 2004).

The therapists used the same cognitive mechanisms when performing Affective Resignifications throughout the process. They offered new cause-effect relationships associated with certain emotional contents (*cause*), although this type of work was much more frequent towards the end of the therapy. Therefore, the patients were influenced by their therapists' actions, whose directive nature is revealed when co-constructing new meanings during the process (Kallestad et al., 2010), especially when there is sufficient evidence to suggest that clinical experience provides alternative meanings which promote therapeutic change (Wells, 1997). One of the main roles of therapists may be to help patients to use cognitive mechanisms (cause and tentative), not only for giving information about certain emotional contents (Affective Explorations), but also for resignifying

this information (Affective Resignifications). In this regard, one of the principal therapist roles, in preparing patients for psychotherapeutic changes, is to fill in or to prepare them for resignifications, which may be largely unavailable while the patient refuses to accept new tentative meanings during the therapy (BennettLevy, 2003).

Conclusions

This study revealed significant differences during the therapy regarding the behavior of some of the CPs when associated with certain cognitive mechanisms present in the verbalizations of both participants during CEs. It can be concluded, for example, that the patients' verbalization of words reflecting *insight*, *cause*, *tentative*, and *certainty* during Affective Explorations in the initial phase may be the external and observable expression of certain organizational cognitive skills, such as remembering, selecting, and transmitting information about their personal history, which are associated with the emotional contents worked on during the session and which are necessary for establishing new connections in latter phases. Likewise, these cognitive mechanisms, together with the Affective Resignifications observed from the middle phase onwards, may be the external and observable expression of elaborative cognitive skills, necessary to attain a deeper understanding of the meanings ascribed to certain emotional contents during the conversation. Since therapy is regarded as an intrinsically dialogic process (Linell, 2009), the resignification of contents takes place successively throughout the process, and becomes evident when patients are able to gradually establish new connections based not only on known information, but also on novel meanings transmitted during the conversation (Bowden & Jung-Beeman, 2007; Bowden, Jung-Beeman, Fleck, & Kounios, 2005).

It was surprising to discover that, as the therapy progressed, words reflecting *tentative* were gradually less verbalized by the patients during Affective Explorations, and more frequently during Affective Resignifications. This may be a communicative indicator that they are expanding their knowledge about certain aspects of themselves, and giving room to uncertainty. In that way, therapy helps patients to explore the evidence for and against those negative emotional contents (e.g., "I felt guilty all my life") in order to create new alternative meanings. Therefore, propositional meanings have a truth value that can be assessed and verified by giving information about evidences (Teasdale, 1999).

Finally, there were differences throughout the process regarding words that reflected *certainty* when they accompanied Affective Resignifications, especially during the final phase of the therapy. A decrease in the use of specific cognitive mechanisms during Affective Explorations and their improvements during Affective Resignifications is apparently associated with important changes in patient skills across the therapy. This may be a verbal sign of the patients' increased *certainty* about the emotional contents resignified during the therapy and about the possibility of formulating new hypotheses about themselves which had to be justified though the therapeutic bond or through their extra-therapeutic context (Garnham & Oakhill, 1996).

The main implication of these findings for clinical practice, both for training and supervision, is that the importance of verbal communication should be highlighted during work on emotional contents, allowing therapists to receive training for identifying the CPs used for working on such contents, in order to help patients to recognize, understand, integrate, or learn new meanings for certain emotional contents associated with psychotherapeutic change in dynamic psychotherapies. In other words, this requires the development of a new skill which involves learning to listen to oneself and to the other speaker, paying attention not only to the object of therapeutic work but also to the rest of the communicative actions performed during the relevant episodes of the session.

The main limitation of this study was that only two psychotherapeutic processes were analyzed. Although many speaking turns were identified in them, only a small number of these speaking turns included CPs used for working on emotional contents. The methodology developed should be replicated with a larger number of processes and with different therapeutic approaches, so as to find differences and similarities between them. The gender of the participants was another limitation; therefore, a promising avenue for future research would be to consider different gender combinations.

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