Title

Functional analysis of the verbal interaction between psychologist and client during the therapeutic process

Author names and affiliations:

Elena María Ruiz-Sancho
- Adress:
  Department of Biological and Health Psychology, Universidad Autónoma de Madrid. 28049, Madrid (Spain)
- E-mail: elena.ruiz.sancho@uam.es

María Xesús Froján-Parga
- Adress:
  Department of Biological and Health Psychology, Universidad Autónoma de Madrid. 28049, Madrid (Spain)
- E-mail: mxesus.frojan@uam.es

Ana Calero-Elvira
- Adress:
  Department of Biological and Health Psychology, Universidad Autónoma de Madrid. 28049, Madrid (Spain)
- E-mail: ana.calero@uam.es

Corresponding author:

Elena Ruiz-Sancho, Facultad de Psicología, Universidad Autónoma de Madrid (Campus de Cantoblanco). C/ Iván Pavlov nº 6. 28049, Madrid (Spain)
E-mail: elena.ruiz.sancho@uam.es

Phone number: +0034-914973397; Fax number: +0034-914975215

Functional analysis of the verbal interaction between psychologist and client during the therapeutic process.

Abstract:

The goal of the present study is to analyze the verbal interaction that takes place between client and therapist over the course of a clinical intervention to determine the learning processes that may be responsible for changes in the client's behavior. Ninety-two sessions were analyzed, corresponding to 19 clinical cases treated by 9 therapists specializing in behavioral therapy. The variables considered were therapist and client verbal behaviors, and these were categorized according to their possible functions and/or morphologies. The *Observer XT* software was used as a tool for the observational analysis. The results led to the conclusion that the therapist responds differentially to client verbalizations, modifying the verbal contingencies as his or her client content approaches or becomes more distant from therapeutic objectives. These results show the possible existence of verbal "shaping" processes through which the therapist guides the client's verbal behavior toward more adaptive forms. In addition, this study proposes an alternative to the traditional controversy regarding the relevance of the therapeutic relationship vs.the treatment techniques employed to explain clinical change. This paper suggests that such differentiation is unnecessary because both the therapeutic relationship and the treatment techniques should act in the same manner, this is, in providing the context for the occurrence of what is truly therapeutic, namely, the learning processes.

Keywords: processes research, therapeutic interaction, verbal behavior, functional analysis, observational methodology.

INTRODUCTION

This study is part of a line of research studying the processes that explain therapeutic change. Previous studies conducted in this area have enabled the consolidation of a working methodology (Froján et al., 2008; Froján, Vargas, Calero, and Ruiz, 2010), as well as the identification of the possible functions of the therapist's verbal behavior (Froján, Calero, Montaño, and Ruiz, 2011; Froján, Montaño, and Calero, 2006; Montaño, 2008; Ruiz, 2011). After analyzing numerous clinical sessions, we have concluded that this behavior changes throughout the intervention and that such variations have no relationship with the analyzed therapist, the client, or the treated problem. Rather, what determines change is the clinically relevant moment or activity that is being carried out at each moment (evaluation, explanation, training/treatment, or consolidation of changes). This fact may point toward the existence of certain learning mechanisms that would be set in motion as a result of the interaction between therapist and client at different moments of the therapy and that may, to some extent, be responsible for clinical change. The goal of this study is to advance in this direction by analyzing the verbal interaction that takes place between client and therapist during the development of the clinical intervention. This advancement is the main contribution of this study with respect to previous studies given that, until now, we have analyzed the verbal behaviors of therapists and clients independently.

As many authors have dedicated their efforts to the research of processes in psychotherapy, multiple studies, meta-analyses, and reviews have been conducted throughout the last few decades. A brief summary of some of these studies follows and examines the conclusions drawn by these studies as well as the alternatives presented by our study. One of the most widely explored lines of research has been the search for common factors among the different therapeutic approaches (Lampropoulos, 2000; Luborsky, 1995). Despite the disparity of the studies conducted with respect to the infrequent coincidences among the types of analyses and the terminology used, as well as the results (see, for example, Grencavage and Norcross, 1990), it was concluded that nonspecific characteristics of the therapist, the client, and their relationship explain the occurrence of the changes that occur in sessions.

In a review of the studies focused on the therapist and client, we mainly found studies that described the characteristics of both of these players and how these characteristics may influence the success of the intervention. Through this line of research, we know that some psychologists systematically obtain better results than others (Blatt,

Sanislow, Zuroff, and Pilkonis, 1996; Blatt, Zuroff, Hawley and Auerbach, 2010; Crits-Christoph and Mintz, 1991; Luborsky, McCellan, Diguer, Woody, and Seligman, 1997; Orlinsky and Howard, 1986; Truax and Mitchell, 1971) and that clients exhibit a range of characteristics, such as youth, attractiveness, intelligence, or social support, related to the possibility of benefiting from psychological treatment (Clarkin and Levy, 2004; O´Malley, Suh, and Strupp, 1983). This type of study has focused on the independent analysis of the participants' static characteristics without considering that the client and therapist interact and change as a result of their interactions.

With respect to studies focused on the therapeutic relationship, it is worth mentioning that beyond the theoretical approaches, specific concepts, and the range of measurement procedures, the therapeutic relationship itself has been a frequent focus of study and has been defined as a strong predictor of change during the course of treatment (Andrews, 2000; Castonguay, Constantino, and Grosse, 2006; Lambert, 1992; Orlinsky, Grawe, and Parks, 1994). Throughout the last few decades, studies have been conducted from diverse perspectives. For example, the humanists led by Rogers assign the therapeutic relationship an essential role in success in sessions (Rogers, 1972). The psychodynamic approach has centered on the development of transference and countertransference concepts, with increasingly greater importance given to the interaction between psychoanalyst and patient as manifested by relational psychoanalysis (Coderch, 2001). Within the analysis of the therapeutic relationship, the concept of the therapeutic alliance has been an area of focus, and in many studies, this alliance has been found to be a predictor of therapy success (Barber, Connolly, Crits-Christoph, Gladis, and Siqueland, 2000; Horvath, 2001; Martin, Garske, and Davis, 2000). Different researchers have began to propose that the quality of the therapist-client alliance is more important than the type of treatment in predicting positive therapeutic results (Safran and Muran, 1995), and some have considered this alliance to be the 'variable of excellence' of the therapy (Wolfe and Goldfried, 1988). What these studies have not clarified, to date, is how such a variable contributes to treatment success (Horvarth, 2006; Krause, Altimir, and Horvath, 2011).

From our point of view and those of many others (Kohlenberg and Tsai, 1991; Lambert and Bergin, 1994), the development of a positive relationship during the session is viewed as a necessary condition but one that is not sufficient to achieve therapeutic change. We consider, as affirmed by Tsai et al. (2009), that in the previously cited approaches, the *appearance* of the therapeutic relationship has been more widely studied than its *real function* during treatment. The relationship has been studied without taking into account the

interactive process essential for it to occur; thus, solidifying this concept itself became the purpose of therapy (Rosenfarb, 1992; Sandler, Dare, and Holder, 1993). Concepts such as empathy or transference lack explicative value, and while we agree that these phenomena exist in treatment and that their analysis is relevant, we do not need to study them as factors responsible for the interaction but, rather, as a result of the interaction. In this sense, proposals such as those by Bordin (1980) or Horvath (2001), which consider that the therapeutic relationship provides the context that promotes and interacts with the specific strategies of therapy, seem appropriate to us. However, this approach requires additional research (Ackerman and Hilsenroth, 2003; Castonguay and Beutler, 2006; Weeks, Kanter, Bonow, Landes, and Busch, 2012). Specifically, there is interest regarding the moment-to-moment analysis of what occurs during therapy, when the search for possible change mechanisms dominates (Rosen and Davinson, 2003). Focusing on this type of analysis, we found that at the margin of the theoretical approach on which the research is focused, as well as the methodology used and the proposed specific objectives, the analysis of the therapeutic relationship and the clinical process requires a certain type of study of the verbal behavior displayed in the session (Montaño, 2008).

This methodology forms the framework of our research, which focuses on two fundamental aspects to analyze the interaction between therapist and client. First, we understand that such a relationship shapes the context for the learning processes necessary for successful therapy to occur (Frojan, 2011). Second, the therapeutic interaction becomes a change mechanism itself. Understanding the interaction in this manner, we believe that it is not enough to say that something happens, rather, we must explain how it happens and how we can make it occur at the appropriate time. This conceptual framework is close to the approaches driven by Functional Analytic Psychotherapy (Kohlenberg and Tsai, 1991; 1995), a model that highlights the contingencies that occur in the therapeutic context including, for example, functional equivalence, natural reinforcement, and shaping. Despite the theoretical identification with this type of intervention, there exist two principal divergences between our proposal and that of Kohlenberg and Tsai. Our goal is to contribute a methodology that allows for the analysis of the clinical process independent of the clinician's therapeutic approach, and simultaneously, we aim to understand how the therapist puts into motion the learning mechanisms responsible for clinical change. Therefore, we start the study of interaction from the therapist's behaviors and not from the client's clinically relevant behaviors.

Based on a conceptualization of the verbal interaction in the clinical context as an operating process, we aim to confirm the following premise: the therapist responds differentially to the different content articulated by the client, expressing responses of approval to content close to the therapeutic goals and showing disapproval to client verbalizations that deviate from such objectives. For our study, this general premise is broken down into the following specific hypotheses:

- *Hypothesis 1*: Client verbalizations evaluated as *pro-therapeutic* (verbalizations positively related to clinical change), will be followed by therapist verbalizations characterized by modifiers consistent with *reinforcement morphology* (therapist verbalizations that show approval).

- *Hypothesis 2:* Client verbalizations evaluated as *anti-therapeutic* (verbalizations negatively related to clinical change) will be followed by therapist verbalizations categorized as *punishment morphology* (therapist verbalizations that show disapproval).

- *Hypothesis 3:* Throughout the sessions, we will find the following sequences of three terms:
  a) Verbalizations of the therapist classified as *discriminative morphology* (therapist verbalizations that lead to a client behavior) will be followed by client behavior evaluated as *pro-therapeutic* and then by a therapist verbalization categorized with the different modifiers consistent with *reinforcement morphology.*

  b) Therapist verbalizations categorized as *discriminative morphology* will be followed by client behavior evaluated as *anti-therapeutic* and then by a therapist verbalization categorized as *punishment morphology.*

METHODS

Participants

To conduct this study, we analyzed recordings of 92 clinical sessions (for a total of 78 hours, 19 minutes, and 2 seconds of therapy observed) from 19 cases treated by 9

behavioral therapists with different degrees of experience from the *Therapeutic Institute of Madrid* (Spain)*,* a private psychological clinic. The clinical work was conducted with adults who were being treated individually. In all of the cases, informed consent of clients and psychologists was obtained to proceed with recordings and subsequent observations and analyses of the sessions. This procedure was approved by the Research Ethics Committee of the Universidad Autónoma of Madrid. With the goal of ensuring the maximum confidentiality of the clients, the cameras used for the recordings were directly aimed at the therapist, and in no case was the face of the client recorded. The characteristics of the cases, sessions, clients, and therapists selected for analysis in the present study are described in Table 1.

PLEASE INSERT TABLE 1 APPROXIMATELY HERE

Variables and tools

The variables analyzed in this study were the following:

- Psychologist verbal behavior: a nominal variable categorized by its possible functions according to the *Categorization system of the interaction of verbal behavior during the session* (SISC- INTER- CVT), presented in Table 2.

- Client verbal behavior: a nominal variable categorized as a function of the closeness or deviation of the content of the client's verbalizations to the therapeutic goals. Such content, shown in Table 2, is described in the SISC-INTER- CVT.

The analysis unit was composed of each of the registered categories of the SISC-INTER-CVT. This codification tool was developed by the research team (Calero, 2009; Froján, Calero, and Montaño, 2009; Froján et al., 2008; Froján et al., 2011; Montaño, 2008; Ruiz, 2011) for the categorization of psychologist and client verbal behaviors during sessions. After an extensive review of the tools created over the past few decades (Callaghan, 1998; Hill et al., 1981; Hill, Nutt, and Jackson, 1994; Rusell and Stiles, 1979; Stiles, 1979, 1993), we observed that their designs were either closely tied to specific psychotherapeutic approaches or that the codification that they proposed was not appropriate for the functional approximation that we wished to conduct. Although, due to space limitations, it is not possible to include herein all of the categorization criteria that

comprised the SISC-INTER-CVT, the general definitions of each of the categories included in this study are shown in Table 2.

PLEASE INSERT TABLE 2 APPROXIMATELY HERE

The following materials and tools were used: a closed circuit of semi-hidden cameras placed in the rooms to record therapeutic sessions; the previously cited tool, SISC-INTER-CVT, to codify verbalizations; *The Observer XT* software, versions 6.0 and 7.0, to carry out the recordings and to analyze the degree of inter- and intra-judge agreement; the *Generalized Sequential Querier (GSEQ)* program, version 5.0, developed by Bakeman and Quera (1995), which facilitates the analysis of sequential patterns of behavior; and the *ObsTxtSds* program (Bakeman & Quera, 1995)*,* version 2.0, which allows for the transformation of the recorded data to the *SDIS* (*Sequential Data Interchange Standard*) language required for sequential analysis.

Procedures

First, we contacted the collaborating center and obtained the signed, written consent of the director to record cases in which the therapist and client agreed to be observed. The selection of sessions, observations, and recordings were carried out by an observer with expertise in the use and application of the SISC-INTER-CVT and *The Observer XT* 6.0 informatics software. The recordings were periodically evaluated to ensure an adequate degree of intra- and inter-observer agreement in the procedure, consistency between the recordings carried out by the observer at two different times, and a high degree of agreement between the observer's registries and those of two different observers trained in the use of the tool. Cohen's kappa agreement indices obtained in the intra-judge comparisons were between 0.60 and 0.90. Such coefficients reflect a "good" and "excellent" degree of agreement, respectively (Bakeman, 2000; Landis and Koch, 1977), and are associated with a theoretical precision value of the observers of between 80% and 93.5%, respectively (Bakeman, Quera, McArthur, and Robinson, 1997), taking into account the characteristics of the registry tool. The evaluation of the inter-judge agreement showed Cohen's kappa values of between 0.6 and 0.91, and the theoretical precision percentage of the observers was greater than 80% in all of the comparisons, reaching levels of 96.5%

The data were analyzed using sequential analysis techniques based on the *log-linear* approach (Bakeman, Adamson, and Strisik, 1995; Bakeman and Gottman, 1986/1989, 1997;

Quera, 1993). Sequential analysis determines whether a relationship exists between adjacent or almost adjacent behaviors. A key concept is the transition probability at a lag r between two behaviors, defined as the probability that, given some behavior X occurs in a sequence, another behavior Y occurs r events before or after X (that is, at a negative or positive lag r). Transition probabilities of an order greater than 1, called *multiple transition probabilities,* can also be studied in cases of longer chains of behavior. To explore the association between specific pairs of categories, we calculated the adjusted residuals (z), a standard procedure to determine whether a specific target behavior occurs significantly more or less often than expected by chance after each given behavior. Since adjusted residuals values depend on the sample size, we also present Yule's Q statistic as an indicator of effect size (values range from -1 to +1), which is usually calculated in sequential analysis (Bakeman & Quera, 1995).

RESULTS

Before analyzing the specific relations considered in this study, the necessary testing of global association was performed to check the existence of any dependency relations between the therapist and the client categories in general at different lags of interest. The Pearson's Chi-squared (X^2) statistic was used for this determination, and it was found that in all cases, the verbal behaviors of the therapist and client were directly related, with a level of confidence of 0.99, as shown in Table 3.

PLEASE INSERT TABLE 3 APPROXIMATELY HERE

Next, the analyses necessary to test the different hypotheses were conducted. The results obtained during the first 2 analyses are shown as transition diagrams in Figure 1 in addition to the adjusted residuals and Yule's Q values.

PLEASE INSERT FIGURE 1 APPROXIMATELY HERE

There are significant positive relationships between *pro-therapeutic* verbalizations and the *reinforcement morphology,* as proposed in Hypothesis 1, even when considering all of its modifiers. We can confirm that Hypothesis 2 is supported as well because the results

show that after *anti-therapeutic* verbalizations, a significant association exists with the therapist's *punishment morphology.*

For a more specific study of the relationships presented in the previous figure, the association of each of the categories that form the group of *pro-therapeutic* and *anti-therapeutic* verbalizations was confirmed separately with the studied therapist functions. The results are presented in Table 4.

PLEASE INSERT TABLE 4 APPROXIMATELY HERE

As the table shows, the positive significant relationships between each of the categories belonging to the *pro-therapeutic* verbalizations appear with almost all of the modifiers of the *reinforcement morphology* of the therapist, with the exception of the associations between the verbalizations of *achievement, well-being, adherence to instructions during the session,* and *low reinforcement morphology*, all of which occur with neither a greater nor lower probability than that expected by chance. In all of the cases, with respect to Yule's Q, the strongest relationship presented by each of the verbalizations belonging to this group is with the *high reinforcement morphology*, whereas in the case of the *achievement* verbalizations, the strongest relationship presented is with both the *high* and *moderate reinforcement morphology.* In contrast, all of the cases of the *anti-therapeutic* verbalizations present a higher positive association with the *punishment morphology.*

With the goal of determining the validity of our third hypothesis, which proposed three-term sequential relations among three terms, we created *chains* with our initial categories. Using this method, a new variable is created, describing a previously defined sequence of codes. Next, the transition probability of a second-order relationship between such chains and some of the categories describing the therapist's verbal behavior were studied. The chains were defined by the *discriminative morphology* plus client verbalizations with *pro-therapeutic* and *anti-therapeutic* contents. These chains constituted the given behaviors of our study, whereas the modifiers of the *reinforcement* morphology and *punishment morphology* were the target behaviors for the analysis of the associations and always displayed at a lag of +1 delay. The results obtained after the significance tests can be observed in Figure 2; the crosses on the arrows indicate that the associations proposed were not significant, whereas the absence of crosses signals statistical significance in the expected direction.

PLEASE INSERT FIGURE 2 APPROXIMATELY HERE

The results show that after the sequence with *pro-therapeutic* verbalizations, the therapist expressed, with a greater probability than expected by chance, verbalizations with *medium* and *high reinforcement morphology* and *low* and *conversational reinforcement morphologies* with non-significant probability. In contrast, although not proposed in the hypotheses, we find it interesting to highlight the negative relationship that this chain exhibits with the therapist's *punishment morphology:* on occasions when the therapist discriminated a client's *pro-therapeutic* answer, the therapist did not later issue a disapproving verbalization with a probability greater than that expected by chance.

However, the chain involving the *anti-therapeutic* verbalizations shows a significant positive relationship with the *punishment morphology.* In addition, there was a negative relationship between the chain involving the *anti-therapeutic* verbalizations and the *conversational reinforcement morphology.*

DISCUSSION

The data presented contribute relevant information in different areas. First, they reflect the evidence of the inter-relationship between therapist and client behaviors; it would be expected that everything that makes the issuer of verbal behavior in therapy influences the receptor, and vice versa, and the global tests conducted support this expectation. Additionally, the results confirm the main hypotheses of the study, as will be described in detail in the results analysis. On the basis of the results shown in Figure 1, we can analyze the two-term sequential patternsdetected in the verbal interaction during therapy. We found that Hypotheses 1 and 2 are supported, in other words, that upon the appearance of *pro-therapeutic* verbalizations, the therapist responds with the different modifiers of the *reinforcement morphology* and that with the *anti-therapeutic* verbalizations, the psychologist reacts by verbalizing the *punishment morphology.* At this point, we should reconsider results obtained in previous studies (Ruiz, 2011), wherein we found that the *well-being, achievement,* and *description of adherence to instructions outside of the session* significantly increased when we compared their averages between periods of *evaluation-consolidation* and even between *treatment and consolidation.* With respect to Table 4 in the present study, we found that it is precisely these client categories that present stronger

relationships with *medium* and *high* modifiers of the *reinforcement morphology.* Thus, it seems that these most recent data indicate the possibility that some of the client verbalizations that reflect greater progress throughout therapy increase, influenced by the application of the highest modifiers of the *reinforcement morphology;* this finding coincides with results that have been previously found by other research groups (Busch et al., 2009; Callaghan, Summers, and Weidman, 2003; Karpiak and Benjamin, 2004; Lancioni et al., 2010; Valentino, Shillingsburg, Call, Burton and Bowen, 2011). This type of affirmation must be treated with caution given that we cannot guarantee the functional value of the morphologies studied in a research such as that presented here. This challenge is present because it is not possible to isolate the effect of these verbalizations of the therapist from other verbalizations with a different "function" and from a number of other variables that could be influential. However, even taking into account these reservations, we believe that results such as these provide an initial view of the learning processes that we propose comprise the clinical intervention.

Given the goal of isolating, as much as possible, this hypothetical effect of the verbalizations with *reinforcement morphology,* we want to highlight the area of research opened by the specific study of the different modifiers established in this study. It seems especially relevant that the modifiers that *a priori* show a stronger approval from the therapist - the *medium* and the *high* modifier - show the strongest associations with this type of *pro-therapeutic* verbalization. This finding opens a new path in our research for which we will have to conduct a specific analysis of these modifiers, taking into account the variations in the client verbalizations. To date, the decision of how to label the different levels of reinforcement is based on our clinical knowledge and not on the study of their functionality. *A priori,* it seemed logical that averbalization as *"Excellent"* from the psychologist would be more reinforcing than comments such as "*Good,*" but the great differences presented in the results between the levels of the modifiers lead us to go beyond in the functional study of such modifiers. Confirming whether, in reality, the word "*Excellent"* verbalized by the clinician increases the likelihood of a desirable client response than the word "*Good,"* as suggested in this study, would provide many leads to more efficiently develop the "shaping" process conducted during the session.

Finally, with respect to the study of two-term sequences with *reinforcement morphology* and regarding the categories related to adhering to instructions, it is interesting that the therapist does not lose the opportunity to show his approval when the client shows *adherence to instructions during the session* or the modifiers of *anticipation,* and

description of adherence to instructions outside of the session. The first two categories appear particularly at moments when the relevant activities of the therapist involve explanation and/or treatment. It appears that in such fragments of therapy, the psychologist expresses verbalizations using *high reinforcement morphology* to encourage the client to continue using the techniques during the session or to adhere to the established tasks for the week. Additionally, we also found that the *description of adherence to instructions outside of the session* is the category that presents a stronger association with *high reinforcement morphology,* and at the same, we know from previous studies (Ruiz, 2011) that it increases progressively throughout the treatment, thus ratifying the possible effects of the verbalizations with *reinforcement morphology* referenced above.

As previously stated, Hypothesis 2 is also supported. In Figure 1, we observe that *anti-therapeutic* verbalizations are followed by emissions of *punishment morphology* by the therapist. If we consider the results in Table 4, we can conduct a more detailed analysis of these data by observing that the psychologist emits this punitive hypothetical function afterall of the categories included in the *anti-therapeutic* group. In the previous studies referenced herein, we observed that verbalizations related to the non-adherence of instructions (*non-adherence during the session, anticipation of non-adherence outside of the session, and the description of non-adherence outside of the session)* decrease throughout the intervention, and especially during the period when the therapist changes his *treatment* activity to *consolidate* objectives. This change may indicate that, for these categories, the therapist's disapproval has the effect of decreasing the probability of the future verbalization of such contents, in which case, we may speak more properly of the functionality of the *punishment morphology.* However, there are many reasons for a cautious interpretation of the data presented in this morphology. First, with respect to the client categories grouped as *anti-therapeutic* and the *punishment morphology,* we found very low averages in all cases. Second, the data obtained in such works for the categories of *failure* and *discomfort* indicate that despite the therapist showing his disapproval, such verbalizations increase until reaching their highest values at the time of *consolidation.* The explanation of this null effect of the *punishment morphology* on these categories is complex. First, regarding client behavior, we consider that this type of content demonstrated in the *consolidation* sessions may be related to the dependence generated by the therapy, which materializes in verbalizations that anticipate the discomfort and fear of the client against the idea of facing, by himself, the extra-clinical context. Second, we believe that the *punishment morphology* created by the therapist against *discomfort* verbalizations may be competing with the

contingencies displayed outside the clinic by the client's social network – that tends to reinforce, positively or negatively, these contents. Third, it may be that some of the client verbalizations are conditioned responses and, thus, not susceptible to punishment. In addition, the *discomfort* category presents more regular averages throughout the therapy, which may indicate that through this type of content, the client expresses his initial discomfort as well as the discomfort generated by the development of treatment or by new problems. In such a case, it would be more complicated to find a decrease in this type of verbalizations. It would be interesting to conduct a detailed study of the contents to confirm these observations. With respect to therapist behavior, it seems that the therapist not only responds with the *punishment morphology* against such discomfort contents and failure, but he also often expresses verbalizations registered as *other* (uncategorizable verbalizations) or as *conversational reinforcement morphology*. This lack of systematization at the time of applying punitive contingencies may explain, among other things, the null effect of this hypothetical function. Last, we consider that the study's design may complicate the confirmation of the possible effect of the *punishment morphology*. That is, as the *failure* and *discomfort* verbalizations increase, so do the averages in this morphology of the therapist, which presents its highest and most regular scores throughout the *explanation, treatment,* and *consolidation* periods. This possibility would imply that the only way to confirm whether these verbalizations of the psychologist produce the expected effect is to study the client's responses in a follow-up session after the last registered. This, however, is not possible in many cases in this sample, either because the session used was the last one of the treatment or because the subsequent sessions were not recorded.

Finally, the three-term sequential study has allowed us to confirm the existence of behavior patterns between therapist and client of great relevance to the study of "shaping" the latter's verbalizations during the session. Looking again at Figure 2, we observe the expected sequences: *discriminative morphology – pro/anti-therapeutic* verbalizations – *reinforcement morphology/punishment morphology*. In the case of the first sequence, the expected sequential relationship occurs in the *high* and *medium* modifiers of the *reinforcement morphology,* which highlights the possibility that these two levels of the category are specifically used by the psychologist to show his approval with the content of the verbalizations that bring the client closer to the desired clinical change, leaving the *low* and *conversational* levels to reflect the therapist's approval simply with the client's speech. The second sequence presents the association between the *anti-therapeutic* verbalizations

created by the *discriminative morphology* of the clinician and the *punishment morphology* applied later.

The analysis of these chains has allowed us to observe two significant negative relationships of great interest for our study. The first is a negative relationship between the *pro-therapeutic* verbalizations discriminated by the psychologist and the *punishment morphology*, and the second is between the *anti-therapeutic* verbalizations discriminated by the psychologist and the *conversational reinforcement morphology*. These two associations were proposed in previous two-term sequential studies (Ruiz, 2011) in which we expected that the therapist, with a greater possibility than that accounted for by chance, would not verbalize the *punishment morphology* after *pro-therapeutic* verbalizations and would not express any of the modifiers of the *reinforcement morphology* after *anti-therapeutic* verbalizations. However, these associations were not found in these studies. We consider that the existence of these three-term chains confirms the fact that, in cases in which the therapist searches explicitly for *pro-* and *anti-therapeutic* responses and these actually appear, the psychologist himself responds systematically with the expected contingencies. That is, the psychologist exhibits the strongest levels of the *reinforcement morphology* for the *pro-therapeutic* verbalizations and in no case responds with the *punishment morphology,* and he applies this latter morphology to *anti-therapeutic* verbalizations without presenting the *conversational reinforcement morphology*. In this last case, the negative relationship does not appear for all modifier levels of the *reinforcement morphology;* however, it seems especially striking, taking into account the cited studies of two terms, that significant and positive relationships were found between *anti-therapeutic* and *conversational reinforcement morphology*. These associations show the important influence that it may have for the clinician to provoke the client's *anti-therapeutic* response.

These results are directly related to the existence of "shaping" processes during the session, in which the therapist clearly directs thesesprocesses by discriminating among the client's responses and applying the pertinent contingencies in each case. This approach, previously proposed by other authors (Follete, Naugle, and Callaghan, 1996; Hamilton, 1988; Rosenfarb, 1992), iterates different proposals that consider that the verbal behavior of the individual who attends treatment can be modified, much like other behaviors, through the in-session "shaping" of new behaviors, through differential reinforcement of approximations to more adaptive verbalizations, and through punishment or the absence of reinforcement in response to counterproductive behaviors. Thus, it seems that the most directive performance of the clinicians may promote more efficient processes during

therapy. In other words, although it is relevant for adequate consequences regarding the client's behaviors to occur at the moment in which these behaviors are exhibited, the psychologist will be more efficient when he is systematic. That is, when the psychologist does not expect client behaviors to occur on their own, but rather through the presentation of discriminative stimuli, he facilitates their expression, thereby promoting the advancement of "shaping."

In conclusion, we highlight the relevance of the study of the therapeutic relationship referred to in the introduction. There is likely not a single manual of psychotherapy published in the last 10 years that does not address the subject of the therapist-client relationship, even if it does not consider this relationship as a central mechanism of change (Castonguay et al., 2006). Even the 29th Division of the APA has created a new working group dedicated to this subject, which has resulted in the publication of "Psychotherapy relationships that work" (Norcross, 2002; Norcross and Wampold, 2011). However, this growing emphasis on the therapist-client relationship has not led to the clarification of why the therapeutic relationship is so important. We believe that the conclusions highlighted in the present study contribute to progress in this direction: different limitations have been identified and future lines of research have been established to analyze, in greater detail, aspects such as the content of the verbalizations of the client in session and the effect of the different modifiers of the *reinforcement morphology,* as previously described. Furthermore, the usefulness of this type of analysis has been highlighted, which, through the moment-to-moment approach to analyzing what occurs during the session, allows us to expand our understanding of the therapeutic process. As previously stated by Hull and Porter (1943), any contact between two individuals alters the behavior of one with respect to the other. We know that the encounter with a priest, a friend, or a fortune teller may mitigate a problem of any individual, but it is the goal of this and many other studies to understand which processes explain such improvement and to know how and when to put these processes into action. Through this type of study, we can better understand the key changes that occur during the session and, as a result, improve the quality of the support offered to those individuals who seek psychological treatment.

ACKNOWLEDGEMENTS

REFERENCES

Ackerman, S. J. and Hilsenroth, M. J. (2003). A review of therapist characteristics and techniques positively impacting the therapeutic alliance. *Clinical Psychology Review, 23,* 1-33.

Andrews, H. B. (2000). The myth of the scientist-practitioner: A reply to R. King (1998) and N. King and Ollendick (1998). *Australian Psychologist, 35,* 60-63.

Bakeman, R. (2000). Behavioural observation and coding. In H. T. Reis, and C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 138-159). Cambridge: Cambridge University Press.

Bakeman, R., Adamson, L. B., and Strisik, P. (1995). Lags and Logs: Statistical Approaches to Interaction (SPSS version). In J. M. Gottman (Ed.), *The Analysis of Change* (pp. 279-308). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Bakeman, R. and Gottman, J. M. (1989). *Observación de la interacción: introducción al análisis secuencial.* [*Observation of the interaction: introduction to sequential analysis.]* Madrid: Ediciones Morata. (Originally published in 1986).

Bakeman, R. and Gottman, J. M. (1997). *Observing interaction: An introduction to sequential analysis* (2nd ed.). Cambridge, England: Cambridge University Press.

Bakeman, R. and Quera, V. (1995). *Analyzing Interaction: Sequential Analysis with SDIS and GSEQ.* New York: Cambridge University Press.

Bakeman, R., Quera, V., McArthur, D., and Robinson, B. F. (1997). Detecting sequential patterns and determining their reliability with fallible observers. *Psychological Methods, 2*, 357-370.

Barber, J. P., Connolly, M. B., Crits-Christoph, P., Gladis, L., and Siqueland, L. (2000). Alliance predicts clients´ outcome beyond in-treatment change in symptoms. *Journal of Consulting and Clinical Psychology, 68,* 1027-1032.

Blatt, S. J., Sanislow, C. A., Zuroff, D. C., and Pilkonis, P. A. (1996). Characteristics of Effective Therapists: Further Analyses of Data From the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Journal of Consulting and Clinical Psychology, 64* (6), 1276-1284.

Blatt, S. J., Zuroff, D.C., Hawley, L. L., and Auerbach, J., S. (2010). Predictors of sustained therapeutic change. *Psychotherapy research, 20*(1), 37-54.

Bordin, E. (1980). *Of human bonds that bind or free.* "Society for Psychotherapy research" Conference, Pacific Grove, CA.

Callaghan, G. M. (1998). Development of a coding system for functional analytical psychotherapy for the analysis of the components effecting clinical change. *Dissertation Abstracts International, 59*(09), 5073B. (UMI No. 9907753).

Calero, A. (2009). *Análisis de la interacción entre terapeuta y cliente durante la aplicación de la técnica de restructuración cognitiva.* [Analysis of the interaction between therapist and client during the application of the cognitive restructuring technique]. Unpublished doctoral thesis, Universidad Autónoma de Madrid, Madrid.

Castonguay, L.G. and Beutler, L.E. (2006). Common and Unique Principles of Therapeutic Change: What Do We Know and What Do We Need to Know? In L. G. Castonguay and L. E. Beutler: *Principles of therapeutic change that work* (pp. 353- 369). New York: Oxford University Press.

Castonguay, L.G., Constantino, M.J., and Grosse, M. (2006). The working alliance: where are we and where should we go? *Psychotherapy: Theory, Research, Practice, Training, 43*, 271-279.

Clarkin, J. F. and Levy, K. N. (2004). The Influence of Client Variables on Psychotherapy. In M. J. Lambert (Ed), *Bergin and Garfield's Handbook of Psychotherapy and Behaviour Change* (5ª ed., pp. 194-226). New York: Wiley.

Coderch, J. (2001). *La relación paciente-terapeuta. El campo del psicoanálisis y la psicoterapia psicoanalítica* [*The patient-therapist relationship. The fields of psychoanalysis and psychoanalytic psychotherapy]*. Barcelona: Paidós.

Crits-Christoph, P. and Mintz, J. (1991). Implications of Therapist Effects for the Design and Analysis of Comparative Studies of Psychotherapies. *Journal of Consulting and Clinical Psychology, 59*(1), 20-26.

Follette, W. C., Naugle, A. E., and Callaghan, G. M. (1996). A radical behavioural understanding of the therapeutic relationship in effecting change. *Behavior therapy, 27*, 623-641.

Froján, M. X. (2011). ¿Por qué funcionan los tratamientos psicológicos? [Why do psychological treatments work?]. *Clínica y Salud, 22* (3), 201-204.

Froján, M. X., Calero, A., and Montaño, M. (2009). Analysis of therapist´s verbal behavior during dispute in cognitive restructuring. A case study. *Psychotherapy Research*, 19, 30-41.

Froján, M. X., Montaño, M. and Calero, A. (2006). ¿Por qué la gente cambia en terapia? Un estudio preliminar. [Why do people change with therapy? A preliminary study] *Psicothema, 18,* 797-803.

Froján, M. X., Montaño, M., Calero, A., García, A., Garzón, A., and Ruiz, E. M. (2008). Sistema de categorización de la conducta verbal del terapeuta. [Categorization system of the therapist's verbal behavior] *Psicothema, 20*, 603-609.

Froján, M. X., Montaño, M., Calero, A., and Ruiz, E. (2011). Approximation of the functional study of the verbal interaction between therapist and client during the therapeutic process. *Clínica y Salud [Clinic and Health]*, 22(1), 69-85.

Froján, M. X., Vargas, I., Calero, A., and Ruiz, E. (2010). Proposal of the categorization of the verbal behavior of the client during the application of cognitive restructuring. *Análisis y Modificación de Conducta [Behavior Analysis and Modification]*.

Grencavage, L.M. and Norcross, J.C. (1990). Where are the commonalities among the therapeutic common factors? *Professional Psychology: Research and Practice, 21*(5), 372-378.

Hamilton, S. A. (1988). Behavioral formulations of verbal behaviour in psychotherapy. *Clinical Psychology Review, 8*, 181-193.

Hill, C. E., Greenwald, C., Reed, K. G., Charles, D., O'Farrell, M. K., and Carter, J. A. (1981). *Manual for Counselor and Client Verbal Response Category Systems*. Columbus, OH, U.S.: Marathon Consulting and Press.

Hill, C.E., Nutt, E.A., and Jackson, S. (1994). Trends in psychotherapy process research: samples, measures, researchers and classic publications. *Journal of Counseling Psychology, 41*(3), 364-377.

Horvath, A. O. (2001). The Alliance. *Psychotherapy, 38*(4)*, 365-372.*

Horvath, A. O. (2006). The Alliance in context: Accomplishments, challenges, and future directions. *Psychotherapy: Theory, Research, Practice, Training, 43*(3)*, 258-263.*

Hull, E. and Porter, JR. (1943). The development and evaluation of a measure of counselling interview procedures. *Educational and Psychological Measurement, 3*, 105-125.

Kohlenberg, R.J. and Tsai, M. (1991). *Functional Analytic Psychotherapy: A guide for creating intense and curative therapeutic relationship.* New York: Plenum.

Kohlenberg, R.J. and Tsai, M. (1995). Functional Analytic Psychotherapy. A behavioral approach to intensive treatment. In W. O'Donohue and L. Krasner (Eds), *Theories of behavior therapy. Exploring behavior change* (pp. 637-658). Washington, DC, U.S.: APA.

Krause, M., Altimir, C. and Horvath, A. O. (2011). Deconstructing the Therapeutic Alliance: Reflections on the Underlying Dimensions of the Concept. *Clínica y Salud, 22*(3), 267-283.

Lambert, M. J. (1992). Psychotherapy outcome research: Implications for integrative and eclectic therapists. In J. C. Norcross and M. R. Goldfried (Eds.), *Handbook of Psychotherapy Integration* (pp. 94- 129). New York: Basic Books.

Lambert, M. J. and Bergin, A.E. (1994). The effectiveness of psychotherapy. In A.E. Bergin and S.L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 270-376). New York: Wiley.

Lampropoulos, G.K. (2000). Evolving psychotherapy integration: eclectic selection and prescriptive applications of common factors in therapy. *Psychotherapy, 37*(4), 285-297.

Lancioni, G. E., Singh, N. N., O'Reilly, M. F., Sigafoos, J., Didden, R., and Pichierri, S. (2010). Automatic prompting and positive attention to reduce tongue protrusion and head tilting by two adults with severe to profound intellectual disabilities. *Behavior Modification, 34*(4), 299-309.

Landis, J.R. and Koch, G.G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*, 159-174.

Luborsky, L. (1995). Are common factors across different psychotherapies the main explanation for the Dodo bird verdict that "everybody has won so all shall have prizes"? *Clinical Psychology: Science and Practice, 2,* 106-109.

Luborsky, L., McCellan, A. T., Diguer, L., Woody, G., and Seligman, D. A. (1997). The psychotherapist matters: Comparison of outcomes across twenty-two therapist and seven patient samples. *Clinical psychology: Science and Practice, 4,* 53-65.

Martin, D. J., Garske, J. P., and Davis, M. K. (2000). Relation of the therapeutic Alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68,* 438-450.

Montaño, M. (2008). Observational studies of the psychologist's verbal behavior for the analysis of the therapeutic process. Unpublished doctoral thesis, Universidad Autónoma de Madrid, Madrid.

Norcross, J.C. (Ed.) (2002). *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients*. New York: Oxford University Press.

Norcross, J. C. and Wampold, B. E. (2011). Evidence-based therapy relationships: Research conclusions and clinical practices. *Psychotherapy*, *48*(1), 98-102.

O´ Malley, S. S., Suh, C. S., and Strupp, H. H. (1983). The Vanderbilt Psychotherapy Process Scale: A report on the scale development and a process-outcome study. *Journal of Consulting and Clinical Psychology, 51,* 581- 586.

Orlinsky, D. E., Grawe, K., and Parks, B. K. (1994). Process and outcome in psychotherapy-Noch Einmal. In A. E. Bergin and S. L. Garfield (Eds.), *Handbook of psychotherapy and behaviour change* (4th ed.) (pp. 270-376). New York: John Wiley and Sons.

Orlinsky, D. E. and Howard, K. I. (1986). Process and outcome in psychotherapy. In S. L. Garfield and A. E. Bergin (Eds.), *Handbook of psychotherapy and behaviour change* (3rd ed.). New York: Wiley.

Quera, V. (1993). *Sequential analysis. In M. T. Anguera (Ed.), Observational methodology in psychology research. Volume II: Fundamentals* (pp. 341-583). Barcelona: Promociones and Publicaciones Universitarias.

Rogers, C. R. (1972). *The process of becoming a person.* Barcelona: Paidós.

Rosen, G.M. and Davison, G.C. (2003). Psychology should list empirically supported principles of change (ESPs) and not credential trademarked therapies or other treatment packages. *Behavior Modification, 27*(3), 300-312.

Rosenfarb, I. S. (1992). A behaviour analytic interpretation of the therapeutic relationship. *Psychological Record, 42*, 341-354.

Ruiz, E. (2011). *A functional approximation to the study of the verbal interaction in therapy.* Unpublished doctoral thesis, Universidad Autónoma de Madrid, Madrid.

Russell, R. L. and Stiles, W. B. (1979). Categories for classifying language in psychotherapy. *Psychological Bulletin, 86*(2), 404-419.

Safran, J. D. and Muran, J. C. (Eds.). (1995). The therapeutic Alliance. *In Session: Psychotherapy in Practice, 1*(1).

Sandler, J., Dare, C. and Holder, A. (1993). *The patient and the analyst. The basis of the psychoanalytical process.* Paidós: Barcelona.

Stiles, W. B. (1979). Verbal response modes and psychotherapeutic technique. *Psychiatry, 42,* 49-62.

Stiles, W. B. (1993). Los modos de respuesta verbal en la investigación del proceso de la psicoterapia. En I. Caro (Ed.), *Psicoterapia e investigación de procesos,* [Verbal response modes in the study of the psychotherapy process. In I. Caro (Ed.,), *Psychotherapy and processes research,]* (pp. 239-264). Valencia: Promolibro.

Truax, C. B. and Mitchell, K. M. (1971). Research on Certain Therapist Interpersonal Skills in Relation to Process and Outcome. In A. E. Bergin and S. L. Garfield (Ed.), *Handbook of psychotherapy and behaviour change* (pp. 299-344). New York: Wiley.

Tsai, M., Kohlenberg, R. J., Kanter, J. W. Kohlenberg, B., Follette, W. C., and Callaghan, G. M. (2009). *A guide to Functional Analytic Psychotherapy. Awareness, Courage, Love and Behaviorism.* New York: Springer.

Valentino, A. L., Shillingsburg, M. A., Call, N. A., Burton, B., and Bowen, C. N. (2011). An investigation of extinction-induced vocalizations. *Behavior Modification, 35*(3), 284-298.

Weeks, C. E., Kanter, J. W., Bonow, J. T., Landes, S. J., and Busch, A. M. (2012). Translating the theoretical into practical: A logical framework of functional analytic psychotherapy interactions for research, training, and clinical purposes. *Behavior Modification,36*(1), 87-119.

Wolfe, B. E. and Goldfried, M. R. (1988). Research on psychotherapy integration: Recommendations and conclusions from a NIMH workshop. *Journal of Consulting and Clinical Psychology, 56,* 448- 451.

Figure 1. Transition diagrams of the significant relationships proposed in Hypotheses 1, 2, 3, and 4 at a lag of +1 among the *pro/anti-therapeutics* and the *reinforcement* and *punishment* functions.
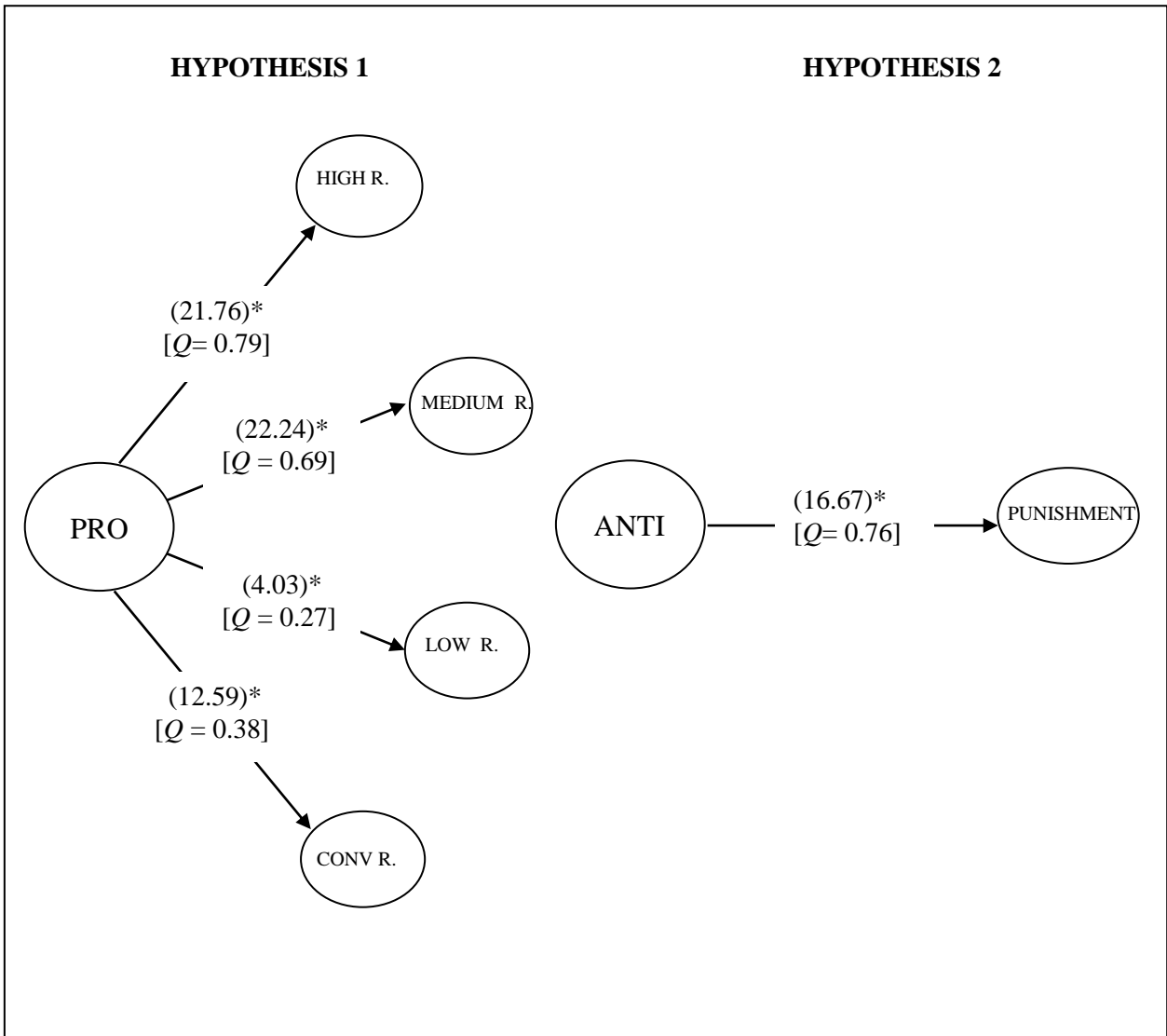
PRO = pro-therapeutic verbalizations; R = reinforcement morphology; Conv. = conversational modifier; ANTI = anti-therapeutic verbalizations. Values in each cell: (*Adjusted residuals*)/[Yule's *Q*]. Significance level: α = 0.01.

Figure 2. Transition diagrams of the significant relationships of the three-term chains at a lag of+1.
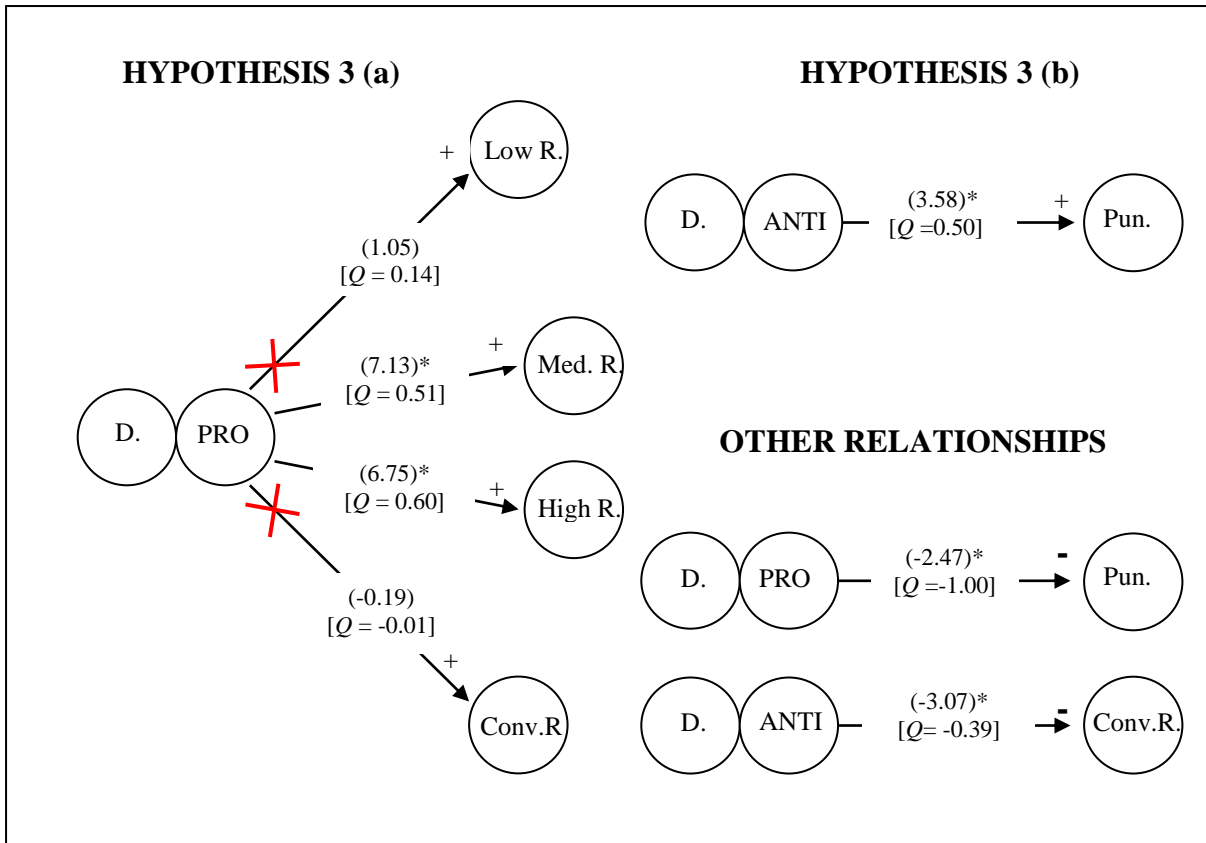
D. = discriminative morphology; PRO = pro-therapeutic verbalizations; R = reinforcement morphology; Med. = medium modifier; Conv. = conversational modifier; ANTI = anti-therapeutic verbalizations; Pun. = punishment morphology. Values in each cell: (*Adjusted residuals*)/[Yule's *Q*]. Significance level: α = 0.01.
+/- = Refers to the direction in which the association is studied. If positive, we refer to the probability that when the given behavior appears, the target behavior will appear; the negative sign represents the significant probability that after the given behavior, the targetbehavior will not appear.

Table 1. Characteristics of the analyzed recordings (I).

Case	Total Sessions (recorded)	Observed Sessions (No. and duration)	T	Sex (T)	Age (T)	Experience (years)	Education	Sex (C)	Age (C)	Problem
1	16 (13)	S1 (0h 57' 03'') S2 (0h 56' 22'') S4 (0h 50' 59'') S8 (1h 05' 49'') S13 (0h 49'44'')	1	F	43	14	Doctorate	F	29	Low mood disorder
2	10 (10)	S3 (0h 52' 35'') S4 (0h 51' 40'') S6 (0h 43' 38'') S8 (0h 37' 11'') S9 (0h 54' 16'')	1	F	45	16	Doctorate	F	32	Couples Issues
3	21 (20)	S2 (0h 49' 17'') S5 (1h 05' 01'') S7 (0h 51' 28'') S9 (0h 42' 11'') S20 (0h 31'23'')	1	F	47	18	Doctorate	M	31	Obsessive Compulsive Disorder
4	17 (17)	S1 (1h 14' 35'') S4 (1h 03' 44'') S5 (0h 46' 25'') S9 (1h 05' 43'') S16 (0h 32'53'')	1	F	48	19	Doctorate	F	32	Anxiety
5	9 (8)	S2 (0h 46' 21'') S3 (0h 27' 59'') S4 (0h 37' 36'') S7[b] (0h 18'12'') S8 (0h 33' 34'')	1	F	44	15	Doctorate	F	36	Agoraphobia
6	8 (8)	S3 (0h 45' 03'') S5 (0h 45' 04'') S6 (0h 40' 02'') S7 (0h 51' 16'') S8 (0h 51' 11'')	2	M	31	5	Post-graduate	F	29	Eating Problems
7	12 (10)	S2 (0h 50' 03'') S4 (0h 34' 13'') S6 (0h 49' 39'') S8 (0h 45' 12'') S10 (0h 49'04'')	2	M	30	4	Post-graduate	M	36	Anxiety and Social Skills problems
8	10 (9)	S2 (0h 54' 57'') S5 (0h 55' 00'') S7 (0h 20' 43'') S8 (0h 38' 22'') S10 (0h 51'27'')	2	M	32	6	Post-graduate	F	22	Low mood disorder
9	9 (6)	S2 (0h 48' 06'') S2 (0h 45' 38'') S4 (1h 27' 58'') S8 (0h 48' 42'') S9 (0h 58'37'')	3	F	30	4	Post-graduate	F	51	Fear of Flying
10	8 (7)	S2 (1h 03' 35'') S4 (1h 01' 41'') S5 (0h 55' 19'') S6 (1h 00' 57'') S7 (0h 56' 04'')	3	F	33	7	Post-graduate	F	35	Hypochondria and Couples Issues
11[a]	5 (5)	S2 (0h 49' 15'') S3 (1h 08' 56'') S4 (1h 03' 59'') S5 (0h 51' 15'')	3	F	32	6	Post-graduate	F	31	Anxiety
12	13 (12)	S2 (1h 09' 49'') S3 (1h 28' 06'') S5 (0h 49' 42'') S7 (0h 52' 32'') S12 (1h 14'10'')	3	F	30	4	Post-graduate	M	34	Social Skills problem

Table 1. Characteristics of analyzed recordings (II).

Case	Total Sessions (Recorded)	Observed Sessions (No. and duration)	T	Sex (T)	Age (T)	Experience (years)	Education	Sex (C)	Age (C)	Problem
13	9 (8)	S1 (0h 51' 52'') S4 (0h 58' 54'') S5 (0h 54' 18'') S7 (0h 51' 50'') S8 (0h 55' 46'')	4	F	33	7	Post-graduate	F	19	Fear of Choking
14	13 (10)	S2 (0h 53' 32'') S6 (1h 01' 12'') S7 (0h 53' 56'') S10 (0h 56'32'') S12 (0h 59'25'')	5	F	26	1	Post-graduate	F	21	Obsessive Compulsive Disorder
15 [a]	7 (5)	S2 (0h 44' 57'') S3 (0h 42' 21'') S5 (0h 44' 28'') S6 (0h 48' 46'')	6	F	25	1	Post-graduate	F	33	Onychophagia
16	15 (13)	S4 (1h 07' 32'') S5 (1h 09' 09'') S6 (0h 44' 54'') S11 (1h 00'55'') S15 (0h 50'58'')	7	F	26	1	Post-graduate	F	35	Low mood disorder
17	17 (15)	S2 (0h 50' 18'') S4 (0h 47' 49'') S5 (0h 44' 52'') S10 (0h 42'14'') S13 (0h 31'48'')	8	F	36	2	Post-graduate	F	22	Anxiety
18	9 (8)	S2 (0h 47' 37'') S3 (0h 51' 58'') S4 (0h 51' 39'') S8[b] (0h 20'43'') S9 (0h 19' 02'')	9	F	24	1	Post-graduate	M	21	Fear of Spiders
19 [a]	9 (7)	S1 (1h 05' 46'') S5 (1k 14' 40'') S6 (0h 58' 15'') S8 (1h 09' 45'')	9	F	24	1	Post-graduate	M	25	Eating Problems

T = therapist; C = client; S = session; F = female; M = male

[a] The session corresponding to the final stage of the treatment could not be recorded and therefore was not analyzed.
[b] Part of the session was conducted outside the clinic.

Table 2. Definitions of the SISC-INTER-CVT categories utilized in this study (I).

CATEGORIES OF THERAPIST VERBAL BEHAVIOR

CATEGORIES	DEFINITION[a] AND EXAMPLES
DISCRIMINATIVE MORPHOLOGY	Therapist verbalization leading to a client behavior (verbal or non-verbal). *e.g., Therapist: "Have you carried out the week's tasks?"* *e.g., Patient: "Yes."*
REINFORCEMENT MORPHOLOGY Possible variations:	Therapist verbalization indicating approval, agreement, and/or acceptance of the client's behavior.
Conversational	*e.g., Patient: "I had never been able to do that without taking a pill, so I'm…"* *e.g., Therapist: "Proud."* *e.g., Patient: "Proud of myself."*
Low	*e.g., Patient: "I had never been able to do that without taking a pill, so I'm proud of myself."* *e.g., Therapist: "Good."*
Medium	*e.g., Patient: "I had never been able to do that without taking a pill, so I'm proud of myself."* *e.g., Therapist: "Very good."*
High	*e.g., Patient: "I had never been able to do that without taking a pill, so I'm proud of myself."* *e.g., Therapist: "Excellent."*
PUNISHMENT MORPHOLOGY	Therapist verbalization indicating disapproval, rejection, and/or lack of acceptance of the client's behavior. *e.g., Patient: "I don't think I can."* *e.g., Therapist: "No, that's not true."*

CATEGORIES OF CLIENT VERBAL BEHAVIOR

CATEGORIES	DEFINITION[a] AND EXAMPLES
PRO-THERAPEUTIC	Client verbalization content approaching the therapeutic objectives.
WELL-BEING	Client verbalization referring to a state of satisfaction or happiness or the anticipation of well-being. *e.g., Patient: "I feel good."*
ACHIEVEMENT	Client verbalization indicating the achievement of a therapeutic objective or the anticipation of achieving it. *e.g., Patient: "I feel much better."*
ADHERENCE TO INSTRUCTIONS DURING THE SESSION	Client verbalization implying total or partial adherence to instructions given by the therapist immediately prior during the session. *e.g., Therapist: "Give me alternative explanations of why this idea bothers you."* *e.g., Patient: "Well, perhaps he didn't want to call or simply ran out of battery…"*
ADHERENCE TO INSTRUCTIONS OUTSIDE THE SESSION Possible variations:	Client verbalization implying a total or partial adherence to instructions given by the therapist to be carried out outside the session.
Anticipation	*e.g., Patient: "This week, I will practice breathing at home."*
Description	*e.g., Patient: "This week, I registered, and I went to the metro and the shopping centers."*

Table 2. Definitions of the SISC-INTER- CVT categories utilized in this study (II).

CLIENT VERBAL BEHAVIOR CATEGORIES

CATEGORIES	DEFINITION [a] AND EXAMPLES
ANTI-THERAPEUTIC	Client verbalization in which the content deviates from the therapeutic objectives.
DISCOMFORT	Client verbalization referring to suffering due to problem behavior or the anticipation of discomfort. *e.g., Patient: "I feel bad."*
FAILURE	Client verbalization indicating the failure to achieve a therapeutic objective or the anticipation of failing to achieve it. *e.g., Patient: "I won't be able to do that."*
NON-ADHERENCE TO INSTRUCTIONS DURING THE SESSION	Client verbalization referring to total or partial non-adherence to therapist instructions presented immediately prior during the session. *e.g., Therapist: "Now I am going to tape you while you are speaking…"* *e.g., Patient: "No, no, I don't want you to tape me while I am speaking…"*
NON-ADHERENCE TO INSTRUCTIONS OUTSIDE THE SESSION Possible variations:	Client verbalization referring to the total or partial non-adherence to instructions given by the therapist to be carried out outside the session.
Anticipation	*e.g., Patient: "I am not going to have time to register."*
Description	*e.g., Patient: "Yesterday, I thought about going on the metro, but it is an idea that I don't like, and I ended up not going…"*

Table 3. Global association tests for matrices of different lags.

Given/target behaviors (lag)	X^2 Statistic
Client/Therapist (+1)	$X^2 = 40010.45$, df = 256. $p < 0.01^*$
Client/Therapist (-1)	$X^2 = 79102.74$, df = 256. $p < 0.01^*$
Therapist/Client (+1)	$X^2 = 79102.74$, df = 256. $p < 0.01^*$

*Significance level: $\alpha = 0.01$.
Values in each cell: chi-squared statistic, degrees of freedom, p.

Table 4. Relationships between the pertinent categories of the *pro-* and *anti-therapeutic* verbalizations with the different modifiers of the *reinforcement morphology* and with the *punishment morphology*.

Target/given behaviors (lag)	Low Reinforcement	Medium Reinforcement	High Reinforcement	Conversational Reinforcement	Punishment
Achievement (+1)	(1.80) [Q = 0.26]	(17.86)* [Q = 0.78]	(12.26)* [Q = 0.78]	(12.41)* [Q = 0.58]	(-1.95) [Q = -1.00]
Well-being (+1)	(-0.72) [Q = -0.18]	(10.97)* [Q = 0.70]	(12.50)* [Q = 0.81]	(5.57)* [Q = 0.39]	(-1.73) [Q = -1.00]
Adherence during the session (+1)	(-0.12) [Q = -0.02]	(4.82)* [Q = 0.43]	(4.27)* [Q = 0.51]	(-2.18)* [Q = -0.20]	(0.99) [Q = -0.10]
Anticipated adherence (+1)	(5.36)* [Q = 0.54]	(4.23)* [Q = 0.45]	(5.15)* [Q = 0.61]	(3.71)* [Q = 0.28]	(-1.21) [Q = -0.52]
Adherence Description (+1)	(2.90)* [Q = 0.37]	(11.51)* [Q = 0.70]	(14.61)* [Q = 0.82]	(9.28)* [Q = 0.51]	(-0.78) [Q = -0.27]
Failure (+1)	(-0.43) [Q = -0.21]	(0.06) [Q = 0.02]	(0.25) [Q = 0.13]	(2.00)* [Q = 0.30]	(12.69)* [Q = 0.89]
Discomfort (+1)	(0.67) [Q = 0.08]	(0.79) [Q = 0.08]	(-2.23)* [Q = -0.62]	(5.92)* [Q = 0.28]	(11.01)* [Q = 0.68]
Non-adherence to instructions during the session (+1)	(-0.43) [Q = -1.00]	(-0.48) [Q = -1.00]	(-0.31) [Q = -1.00]	(-0.95) [Q = -1.00]	(6.23)* [Q = 0.93]
Anticipated non-adherence (+1)	(-0.47) [Q = -1.00]	(1.42) [Q = 0.59]	(-0.33) [Q = -1.00]	(0.02) [Q = 0.01]	(11.70)* [Q = 0.96]
Description of non-adherence (+1)	(0.81) [Q = 0.28]	(-1.21) [Q = -1.00]	(-0.77) [Q = -1.00]	(-1.01) [Q = -.0.28]	(4.45)* [Q = 0.76]

Significance level: α = 0.01.
Values in each cell: (*Adjusted residuals*)/[Yule's *Q*]
Shaded cells: the highest positive relationship for each group of client categories taking into consideration Yule's *Q*.