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Functional Analysis of the Verbal Interaction Between Psychologist and Client During the Therapeutic Process

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Abstract

The goal of this study is to analyze the verbal interaction that takes place between client and therapist over the course of a clinical intervention so as to analyze the potential learning processes that may be responsible for changes in the client's behavior. A total of 92 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 suggest 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 versus the treatment techniques

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used to explain clinical change. This article suggests that such differentiation is unnecessary because 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, & Ruiz, 2010), as well as the identification of the possible functions of the therapist's verbal behavior (Froján, Montaño, Calero, & Ruiz, 2011; Froján, Montaño, & 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 & Norcross, 1990), it was concluded that non-specific 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, & Pilkonis, 1996; Blatt, Zuroff, Hawley & Auerbach, 2010; Crits-Christoph & Mintz, 1991; Luborsky, McCellan, Diguer, Woody, & Seligman, 1997; Orlinsky & Howard, 1986; Truax & 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 & Levy, 2004; O'Malley, Suh, & 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, & Grosse, 2006; Lambert, 1992; Orlinsky, Grawe, & 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, & Siqueland, 2000; Horvath, 2001; Martin, Garske, & 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 & Muran, 1995), and some have considered this alliance to be the "variable of excellence" of the therapy (Wolfe & Goldfried, 1988). What these studies have not clarified, to date, is how such a variable contributes to treatment success (Horvath, 2006; Krause, Altimir, & Horvath, 2011).

From our point of view and those of many others (Kohlenberg & Tsai, 1991; Lambert & 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, & Holder, 1993). Concepts such as empathy or transference lack explicative value, and although 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 & Hilsenroth, 2003; Castonguay & Beutler, 2006; Weeks, Kanter, Bonow, Landes, & 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 & Davison, 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 (Froján, 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 & 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 potentially 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 *protherapeutic* (verbalizations positively related to clinical change), will be followed by therapist verbalizations characterized by modifiers consistent with *approval* (therapist verbalizations that show approval).

Hypothesis 2: Client verbalizations evaluated as *antitherapeutic* (verbalizations negatively related to clinical change) will be followed by therapist verbalizations categorized as *disapproval* (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 *cueing* (therapist verbalizations that lead to a client behavior) will be followed by client behavior evaluated as *protherapeutic* and then by a therapist verbalization categorized with the different modifiers consistent with *approval.*
b. Therapist verbalizations categorized as *cueing* will be followed by client behavior evaluated as *antitherapeutic* and then by a therapist verbalization categorized as *disapproval.*

Method

Participants

To conduct this study, we analyzed recordings of 92 clinical sessions (for a total of 78 hr, 19 min, and 2 s 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 this study are described in Table 1.

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, & 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. Despite the fact that including nonverbal behavior into the research would enrich our analysis and will be taken into account in forthcoming studies, in this one, we will focus solely on the therapist's and client's verbal behavior. It was only taken into account to better categorize *approval* and *disapproval* utterances issued by the therapist, and only because certain paraverbal components of the utterance could help classify it; in any case, those components were always used rather as a complement of the verbal ones than as an independent subject of research. After an extensive review of the tools created over the past few decades (Callaghan, 1998; Hill et al., 1981; Hill, Nutt, & Jackson, 1994; Russell & 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

Table 1. Characteristics of the Analyzed Recordings

Case	Total sessions (recorded)	Observed sessions (duration)	T	Sex (T)	Age (T)	Experience (years)	Education	Sex (C)	Age (C)	Problem
1	16 (13)	S1 (0 hr 57′ 03″) S2 (0 hr 56′ 22″) S4 (0 hr 50′ 59″) S8 (1 hr 05′ 49″) S13 (0 hr 49′ 44″)	1	F	43	14	Doctorate	F	29	Low mood disorder
2	10 (10)	S3 (0 hr 52′ 35″) S4 (0 hr 51′ 40″) S6 (0 hr 43′ 38″) S8 (0 hr 37′ 11″) S9 (0 hr 54′ 16″)	1	F	45	16	Doctorate	F	32	Couples issues
3	21 (20)	S2 (0 hr 49′ 17″) S5 (1 hr 05′ 01″) S7 (0 hr 51′ 28″) S9 (0 hr 42′ 11″) S20 (0 hr 31′ 23″)	1	F	47	18	Doctorate	M	31	Obsessive compulsive disorder
4	17 (17)	S1 (1 hr 14′ 35″) S4 (1 hr 03′ 44″) S5 (0 hr 46′ 25″) S9 (1 hr 05′ 43″) S16 (0 hr 32′ 53″)	1	F	48	19	Doctorate	F	32	Anxiety
5	9 (8)	S2 (0 hr 46′ 21″) S3 (0 hr 27′ 59″) S4 (0 hr 37′ 36″) S7[b] (0 hr 18′ 12″) S8 (0 hr 33′ 34″)	1	F	44	15	Doctorate	F	36	Agoraphobia
6	8 (8)	S3 (0 hr 45′ 03″) S5 (0 hr 45′ 04″) S6 (0 hr 40′ 02″) S7 (0 hr 51′ 16″) S8 (0 hr 51′ 11″)	2	M	31	5	Postgraduate	F	29	Eating problems
7	12 (10)	S2 (0 hr 50′ 03″) S4 (0 hr 34′ 13″) S6 (0 hr 49′ 39″) S8 (0 hr 45′ 12″) S10 (0 hr 49′ 04″)	2	M	30	4	Postgraduate	M	36	Anxiety and social skills problems
8	10 (9)	S2 (0 hr 54′ 57″) S5 (0 hr 55′ 00″) S7 (0 hr 20′ 43″) S8 (0 hr 38′ 22″) S10 (0 hr 51′ 27″)	2	M	32	6	Postgraduate	F	22	Low mood disorder
9	9 (6)	S2 (0 hr 48′ 06″) S2 (0 hr 45′ 38″) S4 (1 hr 27′ 58″) S8 (0 hr 48′ 42″) S9 (0 hr 58′ 37″)	3	F	30	4	Postgraduate	F	51	Fear of flying
10	8 (7)	S2 (1 hr 03′ 35″) S4 (1 hr 01′ 41″) S5 (0 hr 55′ 19″) S6 (1 hr 00′ 57″) S7 (0 hr 56′ 04″)	3	F	33	7	Postgraduate	F	35	Hypochondria and couples issues

(continued)

Table 1. (continued)

Case	Total sessions (recorded)	Observed sessions (duration)	T	Sex (T)	Age (T)	Experience (years)	Education	Sex (C)	Age (C)	Problem
11[a]	5 (5)	S2 (0 hr 49′ 15″) S3 (1 hr 08′ 56″) S4 (1 hr 03′ 59″) S5 (0 hr 51′ 15″)	3	F	32	6	Postgraduate	F	31	Anxiety
12	13 (12)	S2 (1 hr 09′ 49″) S3 (1 hr 28′ 06″) S5 (0 hr 49′ 42″) S7 (0 hr 52′ 32″) S12 (1 hr 14′ 10″)	3	F	30	4	Postgraduate	M	34	Social skills problem
13	9 (8)	S1 (0 hr 51′ 52″) S4 (0 hr 58′ 54″) S5 (0 hr 54′ 18″) S7 (0 hr 51′ 50″) S8 (0 hr 55′ 46″)	4	F	33	7	Postgraduate	F	19	Fear of choking
14	13 (10)	S2 (0 hr 53′ 32″) S6 (1 hr 01′ 12″) S7 (0 hr 53′ 56″) S10 (0 hr 56′ 32″) S12 (0 hr 59′ 25″)	5	F	26	1	Postgraduate	F	21	Obsessive compulsive disorder
15[a]	7 (5)	S2 (0 hr 44′ 57″) S3 (0 hr 42′ 21″) S5 (0 hr 44′ 28″) S6 (0 hr 48′ 46″)	6	F	25	1	Postgraduate	F	33	Onychophagia
16	15 (13)	S4 (1 hr 07′ 32″) S5 (1 hr 09′ 09″) S6 (0 hr 44′ 54″) S11 (1 hr 00′ 55″) S15 (0 hr 50′ 58″)	7	F	26	1	Postgraduate	F	35	Low mood disorder
17	17 (15)	S2 (0 hr 50′ 18″) S4 (0 hr 47′ 49″) S5 (0 hr 44′ 52″) S10 (0 hr 42′ 14″) S13 (0 hr 31′ 48″)	8	F	36	2	Postgraduate	F	22	Anxiety
18	9 (8)	S2 (0 hr 47′ 37″) S3 (0 hr 51′ 58″) S4 (0 hr 51′ 39″) S8[b] (0 hr 20′ 43″) S9 (0 hr 19′ 02″)	9	F	24	1	Postgraduate	M	21	Fear of spiders
19[a]	9 (7)	S1 (1 hr 05′ 46″) S5 (1 hr 14′ 40″) S6 (0 hr 58′ 15″) S8 (1 hr 09′ 45″)	9	F	24	1	Postgraduate	M	25	Eating problems

Note: 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 Categorization system of the interaction of verbal behavior during the session (SISC-INTER-CVT) categories utilized in this study.

Categories of therapist verbal behavior	
Categories	Definition[a] and examples
Cueing	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."*
Approval	Therapist verbalization indicating approval, agreement, and/or acceptance of the client's behavior. Possible variations: 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."*
Disapproval	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."*

(continued)

Table 2. (continued)

Categories of client verbal behavior	
Categories	Definition[a] and examples
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	Client verbalization implying a total or partial adherence to instructions given by the therapist to be carried out outside the session. Possible variations: 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."*
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	Client verbalization referring to the total or partial non-adherence to instructions given by the therapist to be carried out outside the session. Possible variations: 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…"*

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.[1]

As shown in the table, the category "Approval" has several subcategories. We generated these because it seemed relevant to study the possible differences between potentially stronger *Approval* utterances (like "Excellent!") and low-intensity ones ("Right") or medium-intensity ("Very good"). The "Conversational" variant was generated to account for all low-intensity *Approval* utterances that happened during the client's speech (in fact, the requisite for this variant to be coded is for it to be uttered between two client's utterances), to detect utterances issued by the therapist that were meant to reinforce the act of speech itself rather than its content. The reason for the absence of subcategories in the "Disapproval" category is that it has a very low frequency of appearance throughout the therapeutic process. In previous research, we observed that the inclusion of these subcategories meant a loss of information rather than a gain, in the more detailed analysis of what happens in session: The clinical importance of this variable could be obscured by the fragmentation of data among its different levels (Ruiz, 2011).

The following materials and tools were used: a closed circuit of semihidden 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 intrajudge 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 Sequential Data Interchange Standard (SDIS) 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. As usual in observational research, and with the aim of guaranteeing the accuracy of the records, these were periodically evaluated to ensure an adequate degree of intra- and interobserver 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 intrajudge comparisons were between .60 and .90. Such coefficients reflect a "good" and "excellent" degree of agreement, respectively (Bakeman, 2000; Landis & Koch, 1977), and are associated with a theoretical precision value of the observers of between 80% and 93.5%, respectively (Bakeman, Quera, McArthur, & Robinson, 1997), taking into account the characteristics of the registry tool. The evaluation of the interjudge agreement showed Cohen's kappa values of between .6 and .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, & Strisik, 1995; Bakeman & 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 (i.e., 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. As 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 testing the relationship between specific behaviors of the therapist and client, Pearson's chi-square (χ^2) was used as a statistical test of whether a relationship of dependency between the vocal categories of the two groups was present.

The value of this statistic—the client's behavior being the given behavior and that of the therapist the conditioned behavior—was $\chi^2 = 40010.45$, degrees of freedom = 256 for the delay +1 and $\chi^2 = 79102.74$, degrees of freedom = 256 for the delay −1. Taking the behavior of the therapist as given behavior and that of the client as conditioned behavior, the value of $\chi^2 = 79102.74$, degrees of freedom = 256 for a delay +1. For all the lags

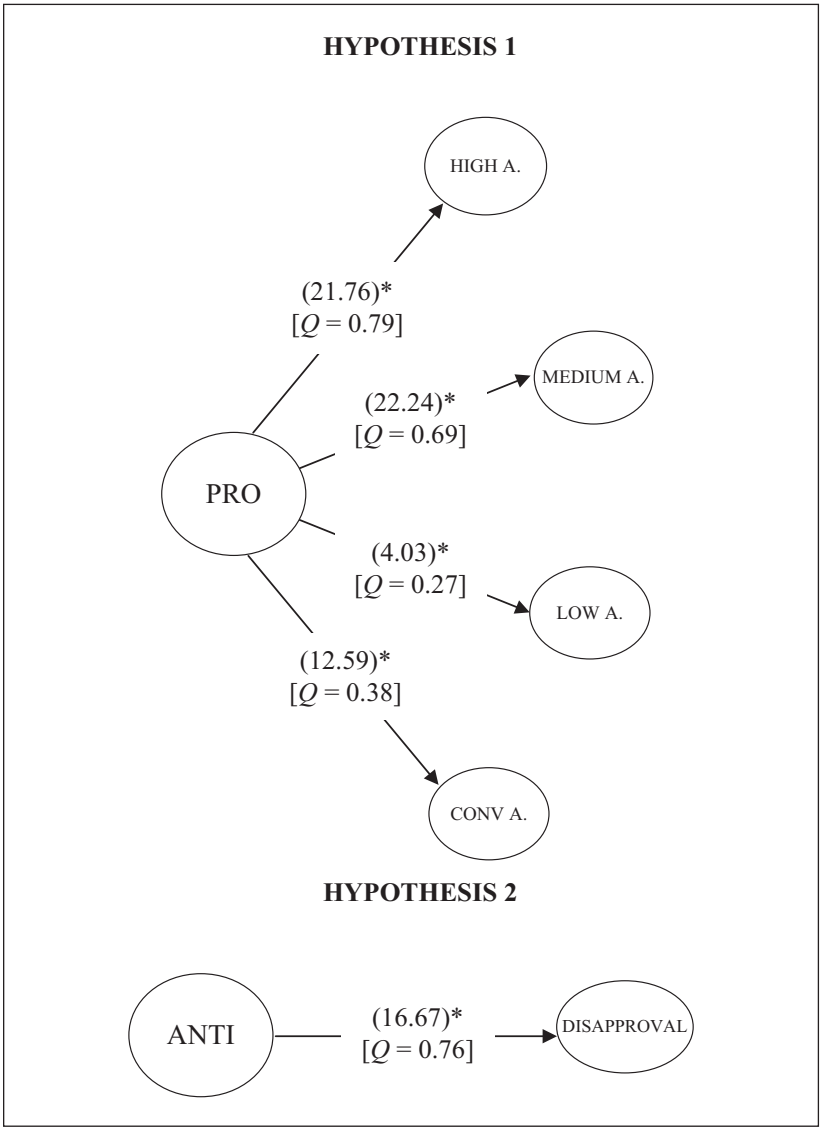

Figure 1. Transition diagrams of the significant relationships proposed in Hypotheses 1 to 4 at a lag of +1 among the pro/antitherapeutics and the approval and disapproval functions

Note: PRO = protherapeutic verbalizations; A = approval; Conv. = conversational modifier; ANTI = antitherapeutic verbalizations. Values in each cell: (adjusted residuals)/[Yule's *Q*]. Significance level: $\alpha = .01$.

Table 3. Relationships Between the Pertinent Categories of the Pro- and AntiTherapeutic Verbalizations With the Different Modifiers of the Approval and With the Disapproval

Target/given behaviors (lag)	Low approval	Medium approval	High approval	Conversational approval	Disapproval
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]
Nonadherence 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 nonadherence (+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 nonadherence (+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]

Note: 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*. *Significance level: $\alpha = .01$.

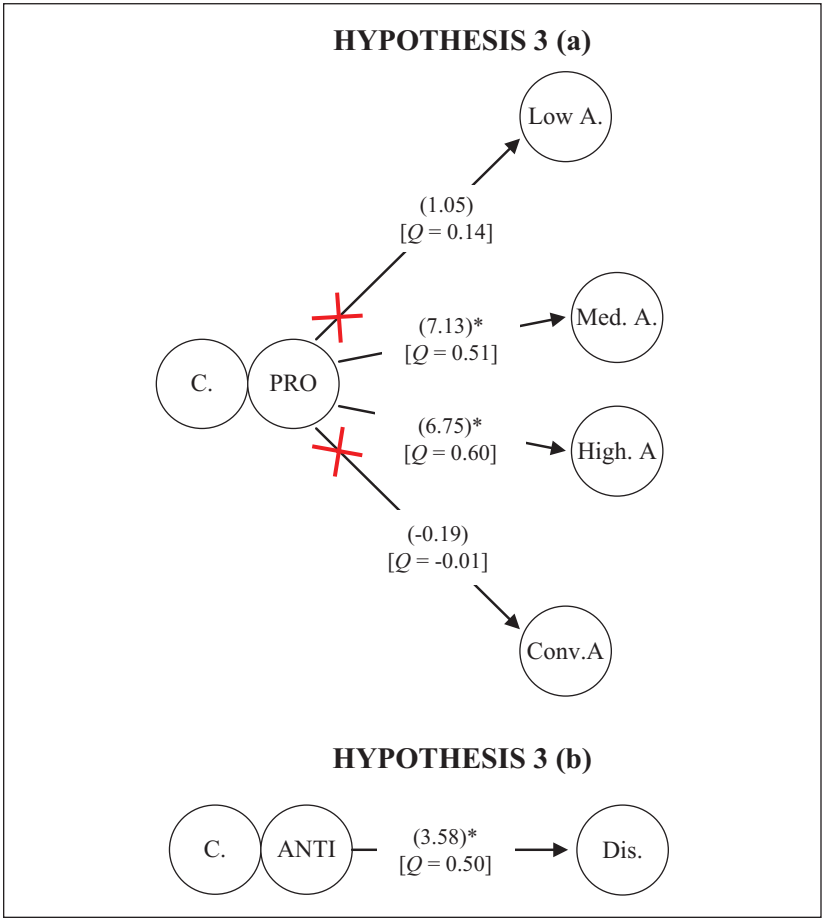

Figure 2. Transition diagrams of the significant relationships of the three-term chains at a lag of +1

Note: C. = cueing; PRO = protherapeutic verbalizations; A = approval; Med. = medium modifier; Conv. = conversational modifier; ANTI = antitherapeutic verbalizations; Dis. = disapproval. Values in each cell: (adjusted residuals)/[Yule's *Q*]. *Significance level: $\alpha = .01$.

studied, the chi-square values indicate that the values of the cells vary significantly from a random distribution with a confidence level of 0.99.

Therefore, it appears that the behaviors of the client affect those of the therapist that follow immediately and vice versa, and that the behaviors of the

therapist in a given moment are related to those of the client for the following position.

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

There are significant positive relationships between protherapeutic verbalizations and the approval, 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 indicate that after antitherapeutic verbalizations, a significant association exists with the therapist's disapproval.

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 protherapeutic and antitherapeutic verbalizations was confirmed separately with the studied therapist functions. The results are presented in Table 3.

As the table shows, the positive significant relationships between each of the categories belonging to the protherapeutic verbalizations appear with almost all of the modifiers of the approval of the therapist, with the exception of the associations between the verbalizations of achievement, well-being, adherence to instructions during the session, and low approval, 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 approval, whereas in the case of the achievement verbalizations, the strongest relationship presented is with the high and moderate approval. In contrast, all of the cases of the antitherapeutic verbalizations present a higher positive association with the disapproval.

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 *cueing* plus client verbalizations with protherapeutic and antitherapeutic contents. These chains constituted the given behaviors of our study, whereas the modifiers of the approval and disapproval 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.

The results indicate that after the sequence with protherapeutic verbalizations, the therapist expressed, with a greater probability than expected by chance, verbalizations with medium and high approval and low and conversational approval morphologies with nonsignificant probability. The chain involving the antitherapeutic verbalizations shows a significant positive relationship with the disapproval.

Discussion

The data presented contribute relevant information in different areas. First, they reflect the evidence of the interrelationship between therapist and client behaviors; one would expect that every verbal response influences the listener, and vice versa, and the global tests conducted support this expectation. In addition, 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 patterns detected in the verbal interaction during therapy. We found that Hypotheses 1 and 2 are supported, in other words, that upon the appearance of protherapeutic verbalizations, the therapist responds with the different modifiers of the approval and that with the antitherapeutic verbalizations, the psychologist reacts by verbalizing the disapproval. 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 3 in this study, we found that it is precisely these client categories that present stronger relationships with medium and high modifiers of the approval. 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 approval; this finding coincides with results that have been previously found by other research groups (Busch et al., 2009; Callaghan, Summers, & Weidman, 2003; Karpiak & Benjamin, 2004; Lancioni et al., 2010; Valentino, Shillingsburg, Call, Burton, & 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 approval, 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 protherapeutic 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 approval is based on our clinical knowledge and not on the study of their functionality. A priori, it seemed logical that a verbalization 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.

Finally, with respect to the study of two-term sequences with approval 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 approval* to encourage the client to continue using the techniques during the session or to adhere to the established tasks for the week. In addition, we also found that the "description of adherence to instructions outside of the session" is the category that presents a stronger association with high approval, and at the same time, we know from previous studies (Ruiz, 2011) that it increases progressively throughout the treatment, thus ratifying the possible effects of the verbalizations with approval referenced above.

As previously stated, Hypothesis 2 is also supported. In Figure 1, we observe that antitherapeutic verbalizations are followed by emissions of disapproval by the therapist. If we consider the results in Table 3, we can conduct a more detailed analysis of these data by observing that the psychologist emits this punitive hypothetical function after all of the categories included in the antitherapeutic group. In the previous studies referenced herein, we

observed that verbalizations related to the nonadherence of instructions (nonadherence during the session, anticipation of nonadherence outside of the session, and the description of nonadherence 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 disapproval.

However, there are many reasons for a cautious interpretation of the data presented in disapproval. First, with respect to the client categories grouped as antitherapeutic and the disapproval, 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 disapproval 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 extraclinical context. Second, we believe that the disapproval 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 disapproval. 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 *disapproval* against such discomfort contents and failure but he also often expresses verbalizations registered as other (uncategorizable verbalizations) or as conversational approval. This lack of systematization at the time of applying punitive contingencies may explain, among other things, the null effect of this hypothetical function.

Finally, the three-term sequential study has allowed us to confirm the existence of behavior patterns between therapist and client of relevance to the

study of "shaping" the latter's verbalizations during the session. Looking again at Figure 2, we observe the expected sequences: cueing—pro/antitherapeutic verbalizations—approval/disapproval. In the case of the first sequence, the expected sequential relationship occurs in the high and medium modifiers of the approval, 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 antitherapeutic verbalizations created by the cueing of the clinician and the disapproval applied later.

These results suggest that a shaping process may be taking place during clinical verbal dialogue, in which the therapist directs theses processes by discriminating among the client's responses and applying the pertinent contingencies in each case. This approach, previously proposed by other authors (Follette, Naugle, & 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 approval of approximations to more adaptive verbalizations, and through disapproval or the absence of approval 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 possible "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 American Psychological Association has created a new working group dedicated to this subject, which has resulted in the publication of "Psychotherapy relationships that work" (Norcross, 2002; Norcross & 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 this 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 approval, 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.

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Note

1. The categorization system of the interaction of verbal behavior during the session (SISC-INTER-CVT) was developed to classify al utterances that appear during the therapeutic intervention, but in this study, only some of its categories will be used, in accordance with the study's aim: studying the relation between protherapeutic and antitherapeutic utterances issued by the client and *approval* and *disapproval* utterances issued by the therapist. The interested reader will find the full category system in Calero, Froján, Ruiz, and Vargas (2011); Montaño (2008); and Ruiz, Froján, and Calero (in press).

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