

Therapists' Verbal Behavior Analysis: A Descriptive Approach to the Psychotherapeutic Phenomenon

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This paper presents some preliminary results from a different approach to research on psychotherapeutic processes. As activity in psychotherapy is predominantly verbal, we propose a scientific study of therapists' verbal behavior from a behaviorist perspective. Data were obtained through observational analysis of the recordings of 16 clinical sessions involving 4 cases, all of which based on individual cognitive-behavioral therapy with adults, in the framework of private clinical practice in Spain. The analysis used a previously validated system of categories and *The Observer XT* software to register and code data. A descriptive analysis enabled us to identify several patterns of psychologists' verbal behavior, irrespective of the therapist and/or the case analyzed. Notable differences were also observed in clinicians' performance, which raises important questions about potential variables associated with therapeutic change. Finally, we discuss the strengths and weaknesses of the present research agenda, the development of which should lead to a fuller understanding of the psychotherapeutic phenomenon.

Keywords: verbal behavior, process research, observational methodology, clinical sessions, psychotherapy.

El objetivo perseguido en este trabajo es presentar los primeros resultados de una nueva forma de abordar la investigación del proceso terapéutico. Partiendo del hecho de que la psicoterapia es eminentemente hablada, se propone el estudio científico de la conducta verbal de los psicólogos desde una perspectiva conductual. Los datos fueron obtenidos a partir del análisis observacional de las grabaciones de 16 sesiones clínicas procedentes de 4 casos distintos, todos ellos desarrollados en el marco de la terapia cognitivo-conductual individual con adultos en un centro privado español. Para la observación, codificación y registro de los datos se empleó un sistema de categorización previamente validado y el software *The Observer XT*. Un análisis descriptivo de los registros nos permitió identificar ciertos patrones de comportamiento verbal de los psicólogos, independientemente de las características particulares del caso y/o del terapeuta. Se apreciaron además notables diferencias en la forma de proceder de los clínicos, lo que sugiere importantes preguntas acerca de las posibles variables asociadas al cambio terapéutico. Por último, se discuten las fortalezas y debilidades de esta nueva línea de investigación cuyo desarrollo permitirá una mejor y más completa comprensión del fenómeno clínico.

Palabras clave: conducta verbal, investigación de procesos, observación, sesiones clínicas, terapia de conducta.

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In recent years, attention has focused mainly on the efficacy of psychological treatments to the detriment of research on the process of therapeutic change itself, although the latter could show not only *what* treatments work, but also *how* they work (Ablon, Levy, & Katzenstein, 2006). The study of processes in psychotherapy continues to be a complex field affected by conceptual confusion (Orlinsky, Ronnestad, & Willutzki, 2004), methodological plurality (Hill & Lambert, 2004) and a diversity of research objectives (Llewelyn & Hardy, 2001). Faced with this none too promising panorama, some authors have pointed to the need for new strategies to approach process research (Pachankis & Goldfried, 2007). Since we share this desire for renewal we embarked on a new line of research with the aim of establishing it as a different approach to the study of the psychotherapeutic phenomenon by avoiding the above-mentioned confusion. One of the objectives of this paper was to present the theoretical and methodological foundations for this proposal. The second objective involved showing some initial, purely descriptive, results, and the third was to outline potential future developments for this nascent line of research.

Starting by the account of the theoretical and methodological basis of this new research agenda, we must say that our proposal involved bringing together three main tenets, each with its own well-founded research tradition in scientific psychology. Therefore, what was innovative in this proposal was not the novelty of these three tenets but its combination for the study the therapeutic process.

Firstly, we adopted a solid theoretical account to conceptualize research and interpret data: the behavioral paradigm. The behavioral model in psychology seems to be a clear example of such a scientific approach to the study of behavior, which is why we have adopted it as a reference framework for our research providing two lines for our proposal: (a) the conceptualization of the patient-therapist interaction as a process of discrimination and reinforcement through which the therapist, with his or her own behavior, will gradually shape the behavior of the patient in the actual clinical situation (e.g., Callaghan, Naugle, & Follette, 1996; Kohlenberg et al., 2005), and (b) the study of the language observed in clinical settings from a functional perspective following Skinner's conception of verbal behavior not so much on his taxonomy, but on his conceptualization of language as an operant response (e.g., Hayes & Wilson, 1994; Skinner, 1967; Wilson & Blackledge, 2000). As we can see, the research framework we introduced in this paper could be included in the functional-analytic tradition, which notably differs from proposals based on other, previous theoretical perspectives. For instance, eclectic approaches have concentrated on identifying principles of therapeutic change regardless of the type of treatment used (Castonguay & Beutler, 2006), whereas integrative conceptualizations have attempted to formulate a general theoretical model of change (Kolden et al., 2006; Smith & Grawe, 2006). In turn, narrative/constructive frameworks have emphasized a

semantic analysis of patient-therapist verbal interaction to discover the mechanisms underlying the changes observed in clinical settings (Caro, 2004; Elliot et al., 2001).

Another crucial aspect of our research was a clear definition of the phenomenon to be analyzed and the desired objectives. From an analytic-functional approach, understanding how and why change occurs in psychotherapy should primarily involve studying the *in-session* therapeutic process, that is, analyzing the behaviors (non-verbal but especially verbal, since in psychological therapy today, therapists *talk* more than *do*) through which psychologist and patient interact in the clinical context. From our point of view, we have to study what occurs during the therapeutic sessions in order to achieve the three fundamental objectives pursued by process researchers (Llewelyn & Hardy, 2001): (a) describe how the psychological intervention occurs, (b) formulate and test hypotheses about the factors related to therapy success and failure, and (c) explain why clinical change takes place.

Finally, the third cornerstone of this new research agenda was the development of a working methodology that permitted a scientific approximation to the therapeutic process. The main precedent for this method is the *Reno Methodology*, elaborated by Willard Day's research group in 80s. We shared with Day the interest in the controlling relation between verbal behavior and the context within which it occurs or the pragmatic hermeneutic (Dougher, 1993). From our point of view, one of the best ways to approach the study of this issue was to combine a careful observational methodology, the appropriate method of study from a behavioral paradigm (Skinner, 1938); with the use of a software instrument that ensures exactitude and precision in the data register, *The Observer XT*. The decision to elaborate a new system of categories instead of using one of the many systems developed by previous authors for the study of therapist verbal response modes (see, for example, Callaghan, Summers, & Weidman, 2003; Snyder, 1987; Stiles & Shapiro, 1995) was due to the absence of proposals based on functional taxonomies with a solid theoretical and experimental foundation that could be used regardless of the therapeutic approach from which they were formulated.

These mentioned aspects constituted the general basis of our line of research. However, there are still years of work ahead before we can fully understand how and why psychotherapeutic change occurs. The preliminary study reported here attempted to be a first step in the achievement of that final objective. At that moment, our efforts were focused on carrying out a descriptive approach to the psychotherapeutic phenomenon by means of therapists' verbal behavior analysis. This initial work was characterized by six primary elements:

1. The starting point of the research implied that our principal purpose was to describe rather than test hypotheses or identify factors explaining therapeutic change. We considered that an adequate way to study what happens during a clinical session could be to observe and classify participant behaviors

- (beginning with one of them, the therapist in this case), without hypotheses that might bias this observation.
2. Since speech is a significant activity in therapy and the main way of accessing the possible internal events of therapist and patient is through their verbal description, the analysis of clinical verbal behavior is crucial for understanding the psychotherapeutic phenomenon. In addition, from a behavioristic perspective, verbal behavior, like any other type of behavior, is governed and can be modified by learning principles (e.g., Catania & Shimoff, 1998; Kelley, Shillingsburg, Castro, Addison, & LaRue, 2007; López & Gallo, 2004). Considering these two points, we hypothesized that by conducting a functional analysis of the patient-therapist verbal interaction, we should be able to identify the learning mechanisms responsible for the behavioral change observed in clinical interventions. Anyway, at this initial stage of our research agenda we focused on the therapeutic process analysis and not on the study of client's change process.
 3. Performing a functional analysis, the so-called *functional assessment* by Cone (1997), involves the description and formulation of hypothesis relating to the constitutive elements of a particular behavioral chain. Usually, this functional analysis (including that performed by clinicians) is preceded by a morphological analysis, which allows a descriptive study of the *potential* elements that may have a specific function. That "selection", prior to identification of the function, is done in accordance with the vast number of studies that have been carried out on stimuli that normally work such as reinforcement, punishment or discriminative stimuli for example, and choosing those which fit these characteristics. In this respect, we can mention, among many others, the list of possible reinforcers for employees in different occupational situations included in Martin and Pear's (2007) manual and based on Potter's (1980) work. In any case, we can also appeal to daily experience to suggest that it is probable that the expression "Well done!" is more likely to work as a reinforcement than "That's bad!". That is why, in this early phase of our investigation, we focused on a descriptive analysis of therapists' verbal behavior in interaction with their patients. We intended to specify which clinician's behavior could control the client's behavior. Subsequently, we could determine whether the hypothetical functional relations were actually operating.
 4. Although our main objective was to study that interaction, we adopted a step-by-step strategy whose first stage was to describe possible functions of therapists' verbal behavior. The reason for starting with the therapist and not the patient is clear: cognitive-behavioral clinical treatment (the focus of our study as

we mention below) is directive. The therapist directs the therapy to achieve objectives set for each session. From this point of view, it seemed to make sense to start analyzing the role of the "conductor of the therapeutic orchestra" to get a better understanding of how it works. However, we are aware that the study of verbal interactions between therapists and patients will not be complete until we include the patient's verbal behavior in our analysis, allowing us to study the processes of mutual influence that characterize any type of human interaction.

5. While our proposal could have been different but equally valid, we concentrated on the analysis of cognitive-behavioral therapies for two primary reasons: (i) cognitive-behavioral treatments have demonstrated their effectiveness as an alternative solution for a wide range of psychological problems (Chambless & Ollendick, 2001; DeRubeis & Crits Christoph, 1998; Nathan & Gorman, 2002) so this success merit an explanation, going beyond the analysis of the results of their application, and (ii) cognitive-behavioral therapy is established on learning processes with a solid experimental base and follow a strict methodology that guarantees certain consistency in psychotherapy development, which could facilitate its study.
6. At this stage of the research, we did not consider the patient's particular clinical situation to be relevant to our research, as we believe that learning principles emerge in any therapeutic relationship regardless of the diagnosis. This is a treatment accessory in cognitive-behavioral treatment since the real cognitive-behavioral diagnosis is the functional analysis. At this work we were focused on studying the psychologist's verbal behavior and not relating it to variables of efficacy, length of treatment, dropouts, types of strategy or any other clinical variables that, despite being of undeniable interest, were not currently objectives in our study.

On the basis of the six theoretical pillars we have described, this paper presents some preliminary results from this line of research which enable us to mark out possible future developments promised by this manner of conceiving and designing research into the therapeutic process.

Method

Participants

The recordings of 16 clinical sessions (corresponding to a total of 14 hours, 1 minute and 38 seconds) were observed. These sessions were selected from 4 different cases treated by 3 behavioral therapists with varying degrees of experience. The following criteria were adopted for the inclusion of the 4 cases: they were the first four cases provided by the center taking part, after the supply of the

Table 1
Participants

Case	Sex	Age	Patient		Therapist				Number of sessions	Observed sessions (duration)
			Ethnicity	SES	Therapist	Sex	Age	Experience (years)		
1	M	53	Caucasian	Middle/High	A	W	44	15	5	S1(52' 55") S2(52' 25") S3(42' 19") S5(42' 18")
2	W	31	Caucasian	Middle/High	A	W	44	15	9	S2(47' 04") S3(28' 05") S5(34' 11") S8(33' 14")
3	W	19	Caucasian	Middle/High	B	W	31	8	9	S2(50' 09") S4(58' 43") S5(54' 13") S8(52' 04")
4	M	34	Caucasian	Middle/High	C	W	29	8	13	S2(1h 09' 51") S3(1h 28' 38") S8(1h 01' 34") S12(1h 13' 55")

50 sessions used to develop the therapist verbal behavior coding system, with the recording of all the sessions occurring during the therapeutic intervention with adequate audio and video quality.

Recordings were videotaped in ITEMA (*Instituto Terapéutico de Madrid / Therapeutic Institute of Madrid*), a private clinic in Spain, after obtaining the informed consent of therapists, patients and the director of the center to participate in our research project. Procedure for obtaining and using clinical information complied with APA's Ethics Code (APA, 2002). In order to safeguard the patients' rights to privacy and confidentiality, only the therapist's face appeared in the recordings, although the voices of both therapist and patient could be heard.¹

Variables and tools

We studied two variables:

1. *The therapist's verbal behavior*, which consisted of eight categories based on Catania's behavioral taxonomy (Catania, 1992) adapted to clinical settings. It was felt that in some cases it might be interesting to register not just the occurrence of the

behavior, but also its duration which is why we established point-event categories (those for which only the moment of occurrence was registered) and state-event categories (those whose onset and offset times were included in the observational registers). Point-event categories were formulated to codify terms included in the contingencies we tried to study (S-R; S-R-C). State-event categories were proposed in order to codify the so-called establishing operations (e.g. Kantor, 1967; McGill, 1999), that is, dispositional variables that can alter some term of the contingency. In the case of point-event categories it could be interesting to measure just the occurrence of these categories. However, in the case of state-event categories, considering a duration measurement could be extremely appropriate. It could be thought that the longer establishing operations are present, the bigger is the effect on the contingency. This hypothesis must be tested in future research.

- *Reinforcement*: verbalizations that showed agreement with, acceptance of, and/or admiration for the patient's behavior. (*Point-event category*)

¹ The current research project was approved by the Research Ethics Committee of Universidad Autónoma de Madrid (Spain).

- *Punishment*: verbalizations that indicated disagreement with, disapproval of, and/or rejection of the patient's behavior. (*Point-event category*)
 - *Discriminative stimulus*: verbalizations that occasioned a patient's behavior (verbal or non verbal) followed by reinforcement or punishment (operant conditioning) by the therapist. (*Point-event category*)
 - *Elicitation*: verbalization by the therapist that elicited an observable emotional response or a patient's verbalization referring to a covert emotional response. (*Point-event category*)
 - *Information*: verbalization by the therapist that transmitted his or her theoretical and/or clinical knowledge to the patient. (*State-event category*)
 - *Motivation*: verbalization by the therapist that highlighted the benefits of the patient's behavior or the costs of maintaining a dysfunctional behavior. (*State-event category*)
 - *Instruction*: guidelines offered by the therapist with the aim of promoting a certain behavior outside of the clinical context. (*State-event category*)
 - *Other*: verbalization that could not be included in any of the above categories. (*Point-event category*)
2. *Therapeutic phase*. We identified four stages in the main goals of psychological interventions. To that purpose, we considered the division of a therapeutic intervention into the phases of *Assessment*, *Treatment* and *Consolidation of therapeutic change* (or follow-up) that appears in any cognitive-behavioral intervention and assessment manual (e.g., Bellack & Hersen, 1988; Turkat, 1985; Ninness, Glenn, & Ellis, 1993; or Van Houten & Axelrod, 1993), and we added a fourth phase: *Explanation of functional analysis and treatment proposal*. This phase would consist of a session that could be considered the last of assessment or the first of treatment phase in which the psychologist assumes a protagonist role, conducting a clearly didactic session designed to make the patient understand the problem and the reason for subsequent treatment. This is therefore a type of unique session, different from the rest that are much more interactive and in which the interventions of the patient and therapist have a similar weight. These different characteristics compared to the remaining sessions led us to consider it as an independent stage that merited separate analysis in each specific case. The four therapeutic phases studied and their definitions according to the main objectives pursued by therapists in each of them are detailed below:
- *Assessment*: To identify dysfunctional behaviors.
 - *Explanation of functional analysis and treatment*

proposal: To discuss (with the patient) the therapist's hypothesis about the learning mechanisms which explain the origin and persistence of the patient's problem. To establish therapeutic objectives and the treatment proposal.

- *Treatment*: To implement treatment strategies and techniques.
- *Consolidation of therapeutic change*: To monitor changes, improvements and/or relapses without training or applying new intervention techniques.

The instrument used to register, code, analyze and represent data was *The Observer XT* software released by Noldus Information Technology. To ensure suitable software performance, the original VHS recordings of the sessions were converted to MPEG files.

Procedure

Two psychologists specialized in cognitive-behavioral therapy classified each session into one of four therapeutic phases. To do this, each judge observed independently all the sessions for each case identifying, firstly, the session in which the therapist explicitly stated that she was going to explain the functional analysis and the treatment plan to the patient. This session was established as the second stage, with the preceding sessions being established as the evaluation stage and subsequent ones as the treatment stage. Finally, the start of the fourth and final stage of consolidation of therapeutic change was established. In this session the therapist stopped training/applying new in-session techniques and started to supervise the changes obtained and worked on the prevention of future problems and/or relapses. There was absolute agreement over the delimitation of the stages by the two judges in the four cases studied with the exception of the division of the last of the intervention stages which was then agreed by the two expert observers. One session from each phase was then randomly selected and analyzed by a psychologist trained in using the categories system created to codify the therapist's verbal behavior. The type of register was similar to what Quera (1991) labeled "register activated by transition" which is a continuous register where the behavioral units correspond to register units without a coding unit established a priori. Instead this would be determined by the transition from one category to another as the observed behavior complied with the criteria established in the definition of each category of the system (Bakeman & Gottman, 1986; Martin & Bateson, 1986).

The observational code and the observational guide designed to establish the criteria to help observers decide how to categorize the analyzed behavior were developed by three independent observers specialized in cognitive-behavioral therapy. The process of development of the system involved the observation of 50 recorded sessions coming from 11 different cases conducted by 5 cognitive-behavioral therapists

who performed their clinical activity in a private center for adults in Spain. This process of elaboration and refining of the category system went through several stages from an initial stage of informal observation, to the current systematic observation through the use of *The Observer XT* software.

Inter-rater reliability of this observational code was studied through the analysis of Cohen's kappa coefficients calculated by *The Observer XT 7.0* software (Grieco, Loijens, Zimmerman, & Spink, 2007) and with a defined tolerance window of only one second ($k_{01-02} = .72, p < .001$; $k_{01-03} = .74, p < .001$; $k_{02-03} = .68, p < .001$). According to Bakeman, Quera, McArthur, and Robinson (1997), the obtained values of kappa would indicate a very acceptable level of coder precision (87% - 93%) for an eight category coding system where the variability of the simple probabilities of codes is high. This confirmation of high variability when checking that most of the data fall into few categories (kappa assumes an approximately equal distribution of data across categories) makes us more cautious because the kappas can be artificially low in these cases (Hill & Lambert, 2004), something that could be happening in our research if we look at the high percentage agreements presented along with kappa values ($PA_{01-02} = 80\%$; $PA_{01-03} = 81\%$; $PA_{02-03} = 77\%$). In any event, several authors (e.g., Bakeman, 2000; Fleiss, 1981; Landis & Koch, 1977) coincide over the following guidelines for interpreting absolute kappa values: "poor" (less than .40), "fair" (.40 to .60), "good" (.60 to .75), and "excellent" (above .75), which indicates that the reliability of our system was "good" and close to "excellent" which justifies its application for obtaining the data presented below.

An example of how therapists' verbal behavior was codified by the observers is presented in Annexe A.

As it has already been mentioned, the registers of the 16 clinical sessions were made by one of the three judges who participated in the process of elaboration and clarification of the coding system. Once these registers had been made, one of the sessions was selected at random and observed by the other two judges. The study of level of agreement between the three observers showed kappa levels that in all cases were higher than the lowest coefficient obtained before registering the 16 sessions (.68), showing that the system's level of reliability was still "good", allowing us to assume that the single observer's registers were perfectly valid.

Results

Figure 1 shows the way in which therapist verbal behavior categories were distributed for each of the cases analyzed and their average in each of the stages of therapy studied. The information about the distribution of state-

event categories (those whose duration was measured) is presented as a percentage of session time in which each of these categories was registered. The distribution of point-event categories (those whose frequency was registered but not their onset and offset times) is presented as a percentage in which each category was registered as a proportion of total observed event categories.

The following graphs show a selection of registers to illustrate the way that the categories studied were distributed throughout a session in each therapeutic stage.

Assessment

Figure 2 shows that clinicians' most significant activities during assessment were: (a) collecting information or assessing (repetition of *discriminative stimulus + discriminative stimulus +...+ reinforcement*), (b) explaining the therapist's viewpoint and the intervention framework as well as dealing with the patient's expectations (predominance of *information*), and (c) proposing tasks for the patient to perform outside of the session (predominance of informative verbalizations and instruction-giving).

Explanation of functional analysis and treatment proposal

Some interesting elements could be identified in a session of explanation of functional analysis and treatment proposal (see Figure 3): (a) assessment of the spacings between sessions and/or aspects important in understanding the patient's problem (repetition of the pattern $S^D + S^D + S^D + \dots + Rf$), (b) explanation of the functional analysis and treatment proposal (predominance of *information*; occurrence of motivational verbalizations during the explanation of treatment proposal), (c) presentation and/or training of therapeutic techniques (presence of *information*, *motivation* and *instructions*), and (d) homework assignment (which involved the majority of therapists' *instructions*).

Treatment

With respect to this therapeutic stage, Figure 4 shows an example of several terms that can occur in a session of treatment: (a) assessment of the spacing between sessions (repetition of $S^D + S^D + S^D + \dots + Rf$ in addition to brief informative and/or motivational verbalizations), (b) training and/or practicing of therapeutic techniques², and (c) the proposal of tasks to be performed outside of the clinical setting (mainly informative, motivational and instructional verbalizations).

² As the technique proposed in clinical case 2 (exposure) was performed outside the clinic, there was no patient-therapist interaction and we could not record the psychologist's verbal behavior.

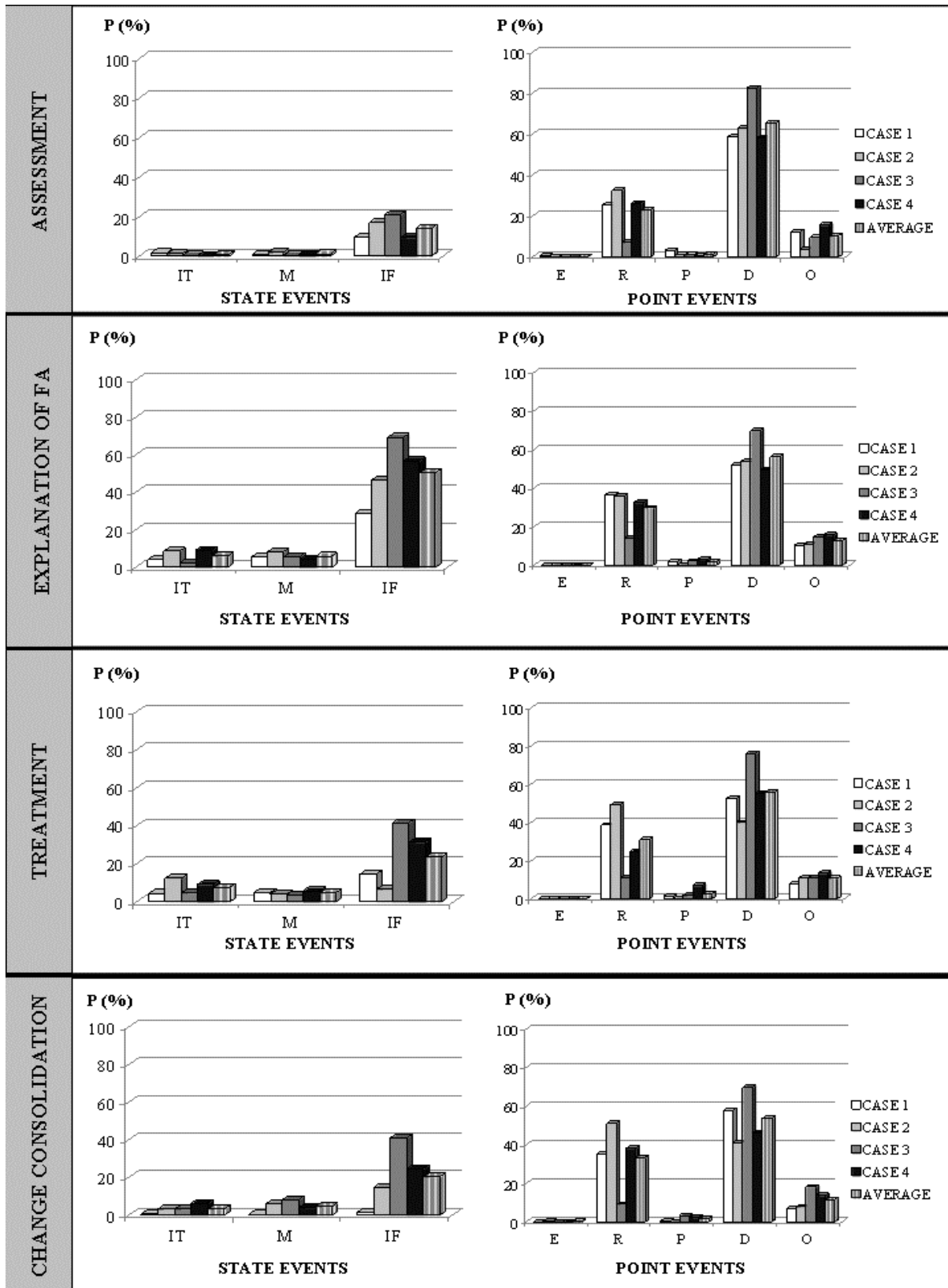


Figure 1. Distribution of categories. The figure shows the way in which therapist's verbal behaviour categories were distributed for each of the cases analyzed and their average in each therapeutic phase.

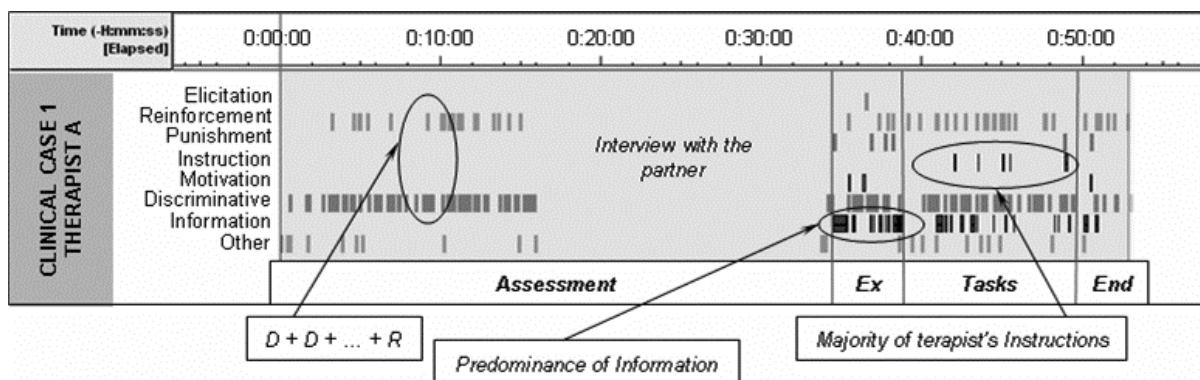


Figure 2. Assessment phase.

Graphic display of a therapist's verbal behavior as it was registered during the observation of a session of *assessment*. The figure shows which categories were coded (*Elicitation, Reinforcement, Punishment, Instruction, Motivation, Discriminative stimulus, Information* and *Other*) and when they were observed for clinical case 1. The moment of occurrence of such categories is set according to two different criteria: a) time of the recording when a behavior was scored (*Time – H:mm:ss*), and b) content of the session at that moment from a clinical point of view (obtaining information or *assessment*, explaining therapist's viewpoint or *explanation*, proposing tasks or *tasks*, and closing session or *end*). Some peculiarities about the register are emphasize. (Ex = explanation; D = discriminative stimulus; R = reinforcement).

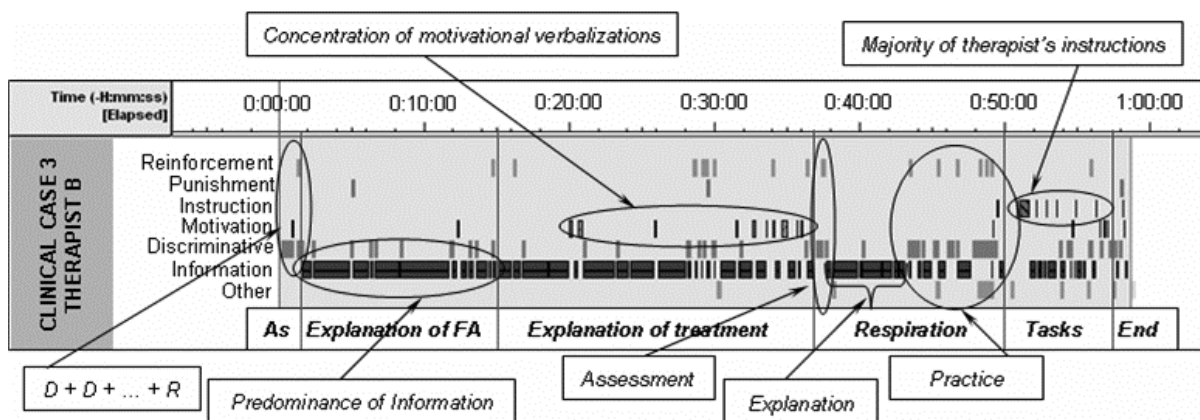


Figure 3. Explanation of functional analysis and treatment proposal phase.

Graphic display of a therapist's verbal behavior as it was registered during the observation of the session of *explanation of functional analysis and treatment proposal* for clinical case 3. The figure shows which categories were coded (*Reinforcement, Punishment, Instruction, Motivation, Discriminative stimulus, Information* and *Other*) and when they were observed during the session. The moment of occurrence of such categories is set according to two different criteria: a) time of the recording when a behavior was scored (*Time – H:mm:ss*), and b) content of the session at that moment from a clinical point of view (obtaining information or *assessment*, explaining functional analysis and treatment proposal, presenting and training therapeutic techniques as controlled respiration; homework assignment or *tasks*, and closing session or *end*). Some peculiarities about the register are emphasized. (As = assessment; FA = functional analysis; D = discriminative stimulus; R = reinforcement).

Consolidation of therapeutic changes

It was difficult to distinguish different moments in the sessions of this intervention phase (Figure 5). On the one hand, we identified some fragments in the therapist-patient interaction in which the issues discussed were not

therapeutically relevant (*idle talk*). The therapist's verbal behavior in these fragments presented the same pattern that was detected when the clinician's main goal was to obtain pertinent information ($S^D + S^D + \dots + R_f$). In other fragments, however, information, motivation and instructions were prevalent and included assessment fragments with their

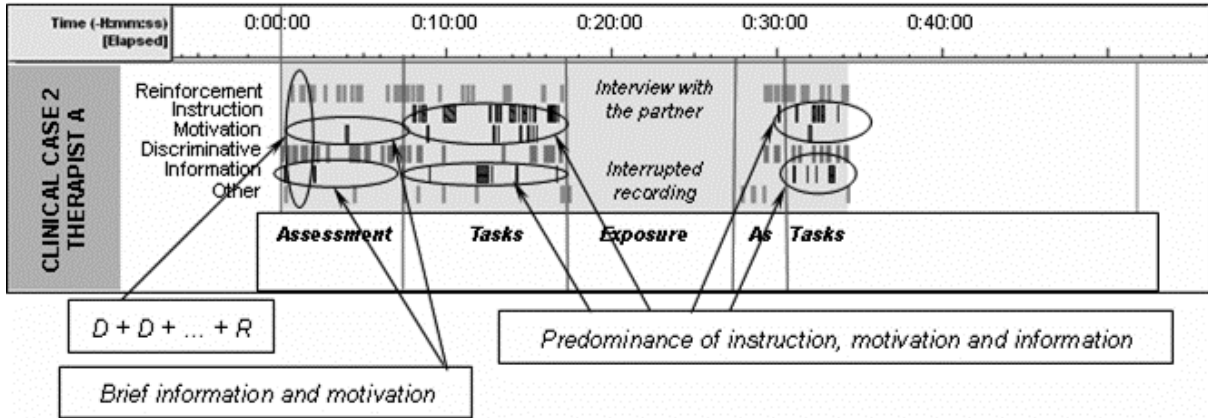


Figure 4. Treatment phase.

Graphic display of a therapist’s verbal behavior as it was registered during the observation of a session of *treatment* for clinical case 2. The figure shows which categories were coded (*Reinforcement, Instruction, Motivation, Discriminative stimulus, Information* and *Other*) and when they were observed during the session. The moment of occurrence of such categories is set according to two different criteria: a) time of the recording when a behavior was scored (*Time – H:mm:ss*), and b) content of the session at that moment from a clinical point of view (obtaining information or *assessment*, training and practicing therapeutic techniques as exposure to phobic stimuli, and homework assignment or *tasks*). Some peculiarities about the register are emphasized. (As = assessment; D = discriminative stimulus; R = reinforcement).

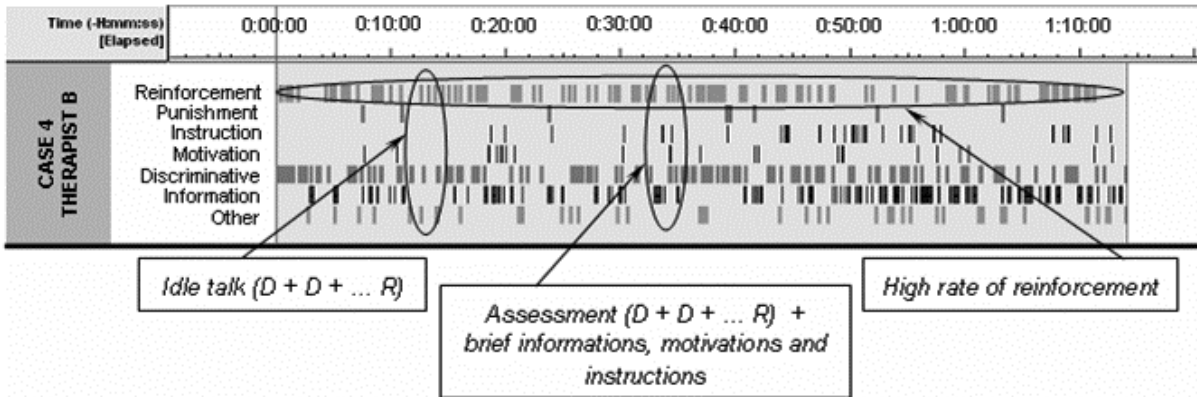


Figure 5. Consolidation of therapeutic change phase.

Graphic display of a therapist’s verbal behavior as it was registered during the observation of a session of *consolidation of therapeutic change* for clinical case 4. The figure shows which categories were coded (*Reinforcement, Punishment, Instruction, Motivation, Discriminative stimulus, Information* and *Other*) and the time of the recording when a behavior was scored (*Time – H:mm:ss*). Some peculiarities about the register are emphasized. (D = discriminative stimulus; R = reinforcement).

distinctive $S^D + S^D + S^D + \dots + R_f$ segments. Rates of reinforcement were very high.

Discussion

On the basis of these initial results, we can point to certain peculiarities that seem to characterize therapists’ verbal behavior in our study. Figure 1 shows that the distribution of the different categories varied across therapeutic phases

regardless of the case. The registers in the phase of assessment seemed to have a predominance of point-event categories (mainly discriminative stimulus and reinforcement) while there were hardly any verbalizations with informative, instructional and/or motivational contents. As there was a clear prevalence of the following pattern: *Discriminative stimulus + Discriminative stimulus + Discriminative stimulus + ... + Reinforcement*, during intervention time aimed at obtaining information in any of the sessions analyzed (see

Figures 2 to 5 for examples), it is logical to expect this pattern to dominate the phase of assessment.

In the phase of functional analysis and treatment proposal, we found a fairly similar pattern of category distribution among cases studied but which was different to the rest of the phases that we analyzed. This pattern was characterized by the prevalence of state-event categories, particularly *Information* which occupied more than 50% of the session time analyzed.

Finally, the distribution profile of the categories studied for the phases of treatment and change consolidation were fairly similar for these two stages of clinical intervention. They differed from the phase of assessment in that they presented a greater percentage of session time registered within one of the state-event categories (*Information*, *Motivation* and *Instruction*), although the proportion of verbalizations with an informative content was never as high as in the phase of explanation of the functional analysis and treatment proposal.

However, more interesting than considering this general distribution profile of the categories for the therapeutic phases (we only show some examples of that distribution – Figures 2 to 5-, although the conclusions presented here have been drawn from the analysis of all 16 sessions) was studying the type of verbal behavior associated with specific contents raised in each particular session regardless the therapeutic phase it belonged to. In this sense, during intervention time aimed at obtaining information we saw a clear prevalence of the pattern *Discriminative stimulus + Discriminative stimulus + Discriminative stimulus +... + Reinforcement*, whereby therapists seemed attempt to control the patients' responses in order to obtain important information. In contrast, when clinicians tried to explain their therapeutic framework, change their patients' expectations and/or explain functional analysis and treatment proposals, the most frequently used verbal behavior was *information*. Here the occurrence of motivational verbalizations was limited and basically circumscribed to fragments of discussion about the treatment plan, training of cognitive-behavioral techniques and homework assignment. As for *instructions*, this category seemed to be confined to the parts of the therapy dealing with training techniques and homework assignment. In these parts we also observed frequent, long, informational verbalizations and $S^D + S^D + S^D + \dots + Rf$ patterns with no evaluative goal and whose aim could consist of training treatment strategies and/or homework assignments. As to *punishment* and *elicitation*, these categories were infrequent and did not seem to be associated with specific parts of therapy.

Apart from the specific results from this preliminary descriptive study, we would like to comment on some central features of our approach to the analysis of the therapeutic phenomenon in terms of possible future developments for this line of research. On the one hand, it is necessary to carry out a "micro-analysis" of the state-event categories.

This analysis permits us to identify which kind of potential functions could involve *Information*, *Motivation* and *Instruction* codes. On the other hand, while our overall objective was to identify the functional relations underlying the patient-therapist interaction, this will be achieved only once the patients' verbal behavior is included in the analysis. The first step in our research is the description of the therapist's verbal behavior. As we stated before, the reason for starting with the therapist and not the patient was clear: cognitive-behavioral clinical treatment is directive. This first step involves an exhaustive and detailed description of verbal behavior; after this we shall do the same with the patient's behavior and, once we have managed to classify both behaviors in exhaustive categories, we will start to relate them, in other words, study the interaction and see how far the appearance or presence of one is related to the appearance or presence of the other. This is essentially the functional analysis of therapist-patient interaction. Consistent with Schlinger's viewpoint on the study of rules (Schlinger, 1990), we argue that the dissection of the formal properties of this verbal interaction actually completes the analysis of its functions rather than detracting from it. From our point of view, a preliminary descriptive approach to the clinical phenomenon is needed in order to formulate a theoretical account of therapeutic change (Froján, Montaña, & Calero, 2007). We will not be able to understand *how* and *why* people change in therapy unless, prior to that, we know *what happens* in the clinical intervention. It is necessary to observe and describe the behavior of persons interacting before we are in a position to propose hypotheses about the interaction itself, in terms both of the efficacy of one form of acting or another, and the variations that may occur due to level of experience, type of problem being treated or techniques used (Critchfield, Henry, Castonguay, & Borkovec, 2007). Eventually, it will be essential to join this *third person* evaluation with a *first person* evaluation of the therapeutic process carried out by therapist and client. Only in this way it could be possible to get a complete outlook of how and why clinical change occurs.

From a methodological viewpoint, our descriptive data analysis should be complemented with more complex strategies for analyzing observational registers. Here Truax's work (1966) and more recently the *lag sequential approach* (Girbau, 2002; Follette, Naugle, & Callaghan, 1996; Friedlander, Lambert, Escudero, & Cragun, 2008) are the main referents for studying the behavioral sequences identified in psychotherapy. We find this analysis particularly important, as it will allow us to develop and assess a general theoretical model of cognitive-behavioral interventions such as the one suggested in previous works.

Focusing on the differences in therapists' performances rather than their similarities raises several important questions: For example, did the psychologists who used lower rates of reinforcement, like therapist B (figure 1), obtain poorer outcomes? Did treatment adherence improve in

cases with more motivational verbalizations? Was homework compliance higher when tasks were explained using instructions rather than information? It might be feasible to focus on specific features of psychotherapy and study them in depth, just as our research group has been doing with the analysis of the cognitive restructuring technique (Froján, Calero, & Montaña, 2006; 2009; in press).

Clearly, many different fields of study could be approached using the present research strategy. We are aware that much remains to be done in this perspective: we need to increase the number of observed cases, improve the reliability of our coding system and develop an observational code to categorize patients' verbal behavior. However, we believe that the first stage of this research is promising. Our efforts to develop a system of observation with a high inter-rater reliability as well as the use of *The Observer XT* software should promote the precision and accuracy needed for a rigorous scientific investigation of the therapeutic phenomenon. Describing this first line of study will allow not only start an interesting debate which helps to improve the quality of our research, but also stimulate other researchers to dedicate some of their efforts to this area what is essential to fully understand therapeutic phenomenon.

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APPENDIX 1

EXAMPLE OF CODED THERAPIST A'S VERBAL BEHAVIOR IN CASE 1 (T = THERAPIST, P = PATIENT)

ASSESSMENT

- T: When did this begin? (*Discriminative stimulus*)
- P: It began some years ago but it wasn't my responsibility so it was easy for me to accept the situation. Even though I had to work overtime, I wasn't in charge of everything so it was ok. But now I am.
- T: And when did you take charge? (*Discriminative stimulus*)
- P: Around September or October.
- T: It was then when you started to feel worse, wasn't it? I mean... (*Discriminative stimulus*)
- P: Yes.
- T: ... from that moment on you began to feel anxious... (*Discriminative stimulus*)
- P: I got more and more stressed.
- T: O.K. (*Reinforcement*). How old are you now? (*Discriminative stimulus*)

EXPLANATION OF FUNCTIONAL ANALYSIS AND TREATMENT PROPOSAL

- T: I'll try to explain to you why you react in the way that you do. Anxiety, your nerves... those are learned responses. But even though you reacted in that way, it doesn't mean you aren't able to control it. People who react as you did in new situations, unfamiliar situations, or situations out of their control... do it because of a conditioning process, that is, an associative process. I will explain it to you. This very same situation might not cause the same kind of reaction in another person that it does in you, even though that person might seem insecure in other aspects of his or her life. Every single person faces these kinds of situations in very different ways (*Information*). However, if I hit your finger with a hammer, what happens? It doesn't matter if I hit you or anybody else, in both cases the reaction will be the same, won't it? (*Discriminative stimulus*)
- P: Yeah.
- T: It'll be the same (*Reinforcement*). That is not a learned reaction but an automatic reaction. (*Information*).

TREATMENT

- T: Let's look at some of the strategies you need to use. In your work place, deep breathing reduces your anxiety level considerably (*Motivation*).
- P: Yes, it does.
- T: If there is a specific request, pressure, or if someone asks you to complete something... Then try breathing deeply and saying "I'm sorry, I can't do it"... in a cooperative manner, without aggressiveness. It may be helpful (*Instruction*).
- P: OK, I'll try it.
- T: Gradually (*Instruction*). If you change little by little, other people's behavior toward you will also change (*Motivation*). Don't react immediately. Take a deep breath in... wait for a moment, 30 seconds, a minute.. and then say: "I'd really like to finish this and I'm doing my best but I can't work overtime" (*Instruction*).
- P: Perfect. So they'll get used to my job ending at 7 p.m..
- T: Exactly, that's the idea (*Reinforcement*).

CONSOLIDATION OF THERAPEUTIC CHANGE

- T: So are you comfortable dealing with your son? (*Discriminative stimulus*)
- P: Yes, I am.
- T: And your wife? (*Discriminative stimulus*)
- P: Yes.
- T: And you're able to handle the situation at your work place... (*Discriminative stimulus*)
- P: I try to control it.
- T: Of course, to "control," that is the important word (*Reinforcement*). Your job isn't laid-back, but you can be laid-back in your approach to work (*Motivation*).