

# Verbal Behavior Analysis of Expert and Inexperienced Therapists Applying the Socratic Method

Rebeca Pardo-Cebrián , Ana Calero-Elvira  and María Cristina Guerrero-Escagedo 

Universidad Autónoma de Madrid (Spain)

**Abstract.** The Socratic method, as an eminently verbal procedure, will be analyzed from a behavioral perspective in order to clarify how verbal conditioning works within. This work compares the verbalizations that expert and inexperienced therapists emit during Socratic method to find out which and why certain therapist verbalizations are most successful in changing client responses. The sample consisted of 113 Socratic method fragments from 18 cases, analyzed by observational methodology. The expert therapists had more than 6 years of experience, the inexperienced less than 2. Experts had fewer failure Socratic method fragments, but there were no differences in successful ones. The way of questioning had a different pattern: Inexperienced therapists suggested more the response, experts used more didactic verbalizations; also, experts used the aversive component more and contingently. The creation of guidelines based on functional description of verbal interaction and the need for novice psychologists training are some implications of these results.

Received 25 October 2021; Revised 13 May 2022; Accepted 19 May 2022

**Keywords:** cognitive restructuring, clinical experience, Socratic method, verbal behavior analysis

Cognitive restructuring is a therapeutic approach, traditionally been used in cognitive therapy and cognitive behavior therapy, that includes a set of procedures oriented to teach individuals how to evaluate, identify and change their maladaptive thoughts (Clark, 2013). One of the most relevant tools of cognitive restructuring is the Socratic method: A dialogue to promote new insight and emerging perspectives (Overholser, 2018a).

Although cognitive techniques have been proven effective (Hollon et al., 2005), and there are detailed contributions regarding how to question (e.g., Beck, 1967; Beck et al., 1979; Ellis & Grieger, 1977; Overholser, 2011; Overholser, 2018b); none of the guidelines are based on empirical evidence to support it, and more importantly, the lack of clarity about the mechanisms by which this technique works remains an unresolved issue (Clark & Egan, 2015).

Socratic method consists essentially of speaking, therefore, a behavioral perspective on verbal processes can clarify how the procedure works. Thoughts, as an individual's private verbal behavior, are studied in behavioral science by inferring control relationships with respect to behavior that we either cannot observe

or we do not know their conditioning history (Schlinger, 2011). Private events are as any other behavior, they do not have any special status (Moore, 2000; Skinner, 1963). Thoughts could function either as responses or as stimuli; they can be explained based on principles of operant and classical learning. Therefore, cognitive techniques do not imply any special or different learning principle.

So, how is Socratic method explained by behavior analysis? From a broad perspective on verbal interaction, some authors believe verbal conditioning is ongoing in a therapy setting and verbal shaping as a key element for the change in therapy (Kohlenberg & Tsai, 1991; Schlinger & Alessi, 2011). Specifically, the dialogue in Socratic method could be understood as verbal shaping, results in verbal reinforcement through which the patient's rules are modified (Abreu et al., 2012; Poppen, 1989). In a debate, the therapist's questions discriminate the client's verbalizations that precede and reinforce the following ones: A process that closely resembles verbal shaping (Froján-Parga et al., 2018).

In addition to the theoretical proposals, what has been empirically proven has so far come from the line of work that precedes this study and focuses on the analysis of the verbal interaction between therapist and patient (Calero-Elvira et al., 2013; Froján-Parga et al., 2011). It was found

---

Correspondence concerning this article should be addressed to Ana Calero-Elvira. Universidad Autónoma de Madrid. Facultad de Psicología. Departamento de Psicología Biológica y de Salud. Calle Iván Pavlov, 6. 28049 Madrid (Spain).  
E-mail: [ana.calero@uam.es](mailto:ana.calero@uam.es)

**Conflicts of Interest:** None.

**Funding Statement:** This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

**Acknowledgement:** Authors thank the ACOVEO research group for their support.

#### How to cite this article:

Pardo-Cebrián, R., Calero-Elvira, A., & Guerrero-Escagedo, M. C. (2022). Verbal behavior analysis of expert and inexperienced therapists applying the Socratic method. *The Spanish Journal of Psychology*, 25. e19. Doi:10.1017/SJP.2022.14

that when therapists asked questions preceded by certain information, the Socratic method was also more effective. It would appear that the therapists' suggestion of certain information before questioning could be understood as a greater indication or guidance by therapists, which is contrary to what some of the classic authors of cognitive therapy, such as Beck, had proposed. Furthermore, these observational studies evidenced that there was a more successful shaping when therapists acted contingently with all verbalizations. A debate episode was classified as *highly successful* in occasions when the client makes at least one statement consistent with the goals of the debate (e.g., "I absolutely agree") and there is no recurrence of the target irrational verbalization. A debate was classified as *partially successful* in occasions when the client makes at least one statement that is partially consistent with the goals and there is no recurrence of the target irrational verbalization. Statements may include autoclitics denoting lack of emphasis (e.g., "Maybe I was a bit suspicious"). A debate may also be classified as partially successful if (a) the verbalization consistent with the debate goals occur on several occasions without emphasis incurring in subsequent recurrences of the target irrational belief, and (b) the verbalization consistent with the debate goals occurs only once with emphasis autoclitics and with subsequent recurrence of the target irrational belief. The debate is classified as a *miss* in occasions when the client fails to utter a single verbalization that would be fully or partially consistent with the debate goals. A debate could also be classified as a miss in occasions when a non-emphatic verbalization is partially consistent with the debate goal but there is a subsequent verbalization that contradicts it (i.e., recurrence of the irrational belief).

Considering shaping also as a process occurring in the other protagonist of the Socratic method, the therapist's behavior could be modified through numerous trials (clinical practice). The divergences of different studies which define therapist's experience and isolate related variables such as age, training, etc., have led to a great deal of confusion interpreting the data (Beutler, 1997; Walsh et al., 2018). However, beyond this confusion, some studies show therapists can benefit from their experience in certain conditions (Leon et al., 2005). Also, the guidelines of Division 12 of the American Psychological Association (APA), Presidential Task Force on Evidence-Based Practice (2006), highlighted the importance of understanding the role of experience in clinical practice as a way to improve intervention outcomes.

Taking into account this background, the aim of this paper is to elucidate in detail what and why one type of therapist's verbal performances during the Socratic method is associated with effective discussions due to the different mechanisms of change that occur. We proposed to study morphological aspects and their

potential functional implications of verbal interaction in Socratic debate by looking at the clinical performance of experienced and inexperienced therapists through the following hypotheses:

Hypothesis 1. Regarding the success of the Socratic method:

1. The expert therapists will have a higher percentage of *total success* Socratic method fragments and the inexperienced therapists will have more *failure* fragments.
2. The expert therapists will be reaching more approximation responses than opposite responses per Socratic fragment. There will be a higher rate of patient's responses *approximating* the therapeutic objective and a lower rate of patient's responses *opposing* this objective in expert Socratic method fragments.

Hypothesis 2. Regarding the degree of guidance or indication, in total success fragments of the Socratic method:

1. There will be differences in the specificity of the discriminative verbal stimuli presented: The expert therapists will use more questions with an indication component (*exploring* and *questioning indicating*) and will give their patients the solution more frequently (*providing goal verbalization*).
2. Experts will make a greater use of explanations that accompany the debate questions ("didactic strategies"): *Explaining, using analogies, and training in reasoning rules*; than inexperienced therapists, who will use it less.

Hypothesis 3. Regarding the way of questioning, since the training in applying the Socratic method is not based on functional, but on morphological aspects:

1. The inexperienced therapists will employ more debate questions (*questioning*).
2. The inexperienced therapists will follow an order in the sequencing of questions more frequently than the expert therapists: In the first and second part of the Socratic method there will be more questions that evaluate evidence and logic (*questioning validity*) and in the third part there will be questions that evaluate severity and/or utility (*questioning severity and questioning utility*).

Hypothesis 4. Regarding the use of the aversive component:

1. The expert therapists will use it more than the inexperienced therapists.
2. Experts will use it with a higher probability than expected by chance after the patients' responses

opposing the therapeutic objective, or *intermediate* with respect to the objective, and not at all after patient's responses *approximating* this objective.

Hypothesis 5. Regarding other aspects of the Socratic method:

1. The experts will use technical explanations, motivating verbalizations and analogies more frequently than the inexperienced therapists.
2. In *total success* Socratic method fragments, experts will combine motivating verbalizations with reasoning rules.

## Method

### Sample

The sample consisted of 113 video recordings of Socratic method fragments (10 hours, 6 minutes and 39 seconds) from 18 clinical cases, and 11 therapists (90.9% were women) with different levels of experience: 10 cases correspond to the expert therapists and 8 to the inexperienced therapists. The experts had a continuous clinical experience of more than 6 years, and the inexperienced therapists had less than 2 years. Of the expert therapists, Therapist 1 was a Doctor in Psychology and clinical psychologist, and Therapists 2 and 3 were Masters in Clinical Psychology who worked mainly in psychological care. By contrast, all the inexperienced therapists were completing their masters training and received supervision in all their sessions by expert therapists. All therapists had a behavioral orientation and performed their clinical practice in a private psychological center. Both, expert and inexperienced therapists have similar cultural background, ethnicity and they were native speakers in Spanish.

The applicants for psychological services were all adults (the average age was 28.7 years and 77.7% were women) and received individual psychological treatment. The problems for which they came to therapy were: Depression (33.3%); marital problems (16.6%); hypochondria (11.1%); problems in the workplace (11.1%); eating disorder and body image (11.1%); social skills (5.5%); relationship problems (5.5%); and general emotional problems (5.5%).

The study fully complied with the ethical requirements approved by the ethics committee of the Universidad Autónoma de Madrid (Spain). It was a blinded study and none of the observers or supervisors had been therapists in the sample.

### Instruments

Therapist's verbal behavior during Socratic fragments were categorized according to the *Therapist System of*

*Categories* developed *ad hoc* for this study. The categories included in this system are included in Table 1.

Patient's utterances were coded following the *Patient System of Categories* developed in Calero-Elvira et al. (2013) (p. 628): *Verbalizations approximating the therapeutic objective of the Socratic method* (VAT); *Verbalizations opposing the therapeutic objective of the Socratic method* (VOT); *Intermediate Verbalizations with respect to the therapeutic objective of the Socratic method* (VIT).

Finally, each debate fragment was categorized according to the *Verbal Effectiveness Scale* developed in Calero-Elvira et al. (2013) (p. 629). This scale categorizes each debates fragment on an effectiveness scale according to three levels: *Total success*; *Partial success* and *Failure*, that involved the grade in which client's verbalizations approximate to the Socratic method goals.

All session fragments were observed and coded through *The Observer XT 12.5* software (Noldus®). This software was also used for the calculation of percentage of agreement and inter- and intra-rater reliability index. The *Generalized Sequential Quierier 5.1* (GSEQ®) (Bakeman & Quera, 1995) was used for sequential analysis of recorded data and *SPSS Statistics 22* (IBM®) for other statistical analysis of the data.

## Procedure

### *The Development of the Therapist System of Categories*

This study is based on previous research with the same methodology and theme: A verbal interaction analysis during the Socratic method in cognitive restructuring; more precisely it was based on its categorization systems (Calero-Elvira et al., 2013; Froján-Parga et al., 2011). The present study delves into some of the categories not previously explored in order to test new hypotheses.

Observations and transcripts of the Socratic method fragments were made by 3 different observers: Observer 1, an expert in behavioral therapy and also expert in research from a verbal behavior analysis perspective; and Observers 2 and 3, graduates in psychology and with clinical training. Meetings were held periodically between the three observers and the supervisor of the team, a professor in Clinical Psychology. The team analyzed and refined the proposed definitions and categories, working on the definition of the categories until a preliminary categorization system was created. At that point, Observer 2 began to categorize the fragments that Observer 1 had registered, and the percentages of agreement and the Cohen's Kappa coefficient of the fragments were calculated. The final version was achieved once the appropriate agreement levels and Kappa coefficient were reached (Cohen  $\kappa$ , .53 to .92).

**Table 1.** Therapist System of Categories

Categories	Definition
Exploring	Verbalizations, usually questions, that request information about unknown aspects. E.g., “ <i>What is love for you?</i> ”
Questioning	Verbalizations, mainly questions that challenge or discuss the patient’s approach, not with the aim of acquiring information (it is already known or obvious) but to make the patient doubt it. <u>Validity.</u> Questions aimed at challenging logic or evidence. E.g., “ <i>What proof do you have to think that?</i> ” <u>Severity.</u> Questions aimed at challenging the impact of the consequences. E.g., “ <i>Would the consequences be so terrible?</i> ” <u>Utility.</u> Questions aimed at challenging the utility of the description of contingencies. E.g., “ <i>If so, how could you benefit from that way of thinking?</i> ”
Questioning and exploring categories can be, in turn:	
<ul style="list-style-type: none"> <li>• Indicating the direction of the response. E.g., “<i>Don’t you think that, according to what we have said, that would be politically correct?</i>”</li> <li>• Without indicating the direction of the response. E.g., “<i>Is it politically correct?</i>”</li> </ul>	
Explaining	Verbalizations that explain, inform or argues an alternative approach to the one proposed by the client. <u>Technically:</u> Functional explanations and explanations about some psychological aspect. E.g., “ <i>A hypochondriac is someone who worries about having a disease and constantly checks his health.</i> ” <u>Non-technically:</u> Alternative explanations or explanations about some other aspect. E.g., “ <i>Maybe he goes out, because he doesn’t want to stay home alone, not because he wants to see someone else.</i> ”
Motivating	Verbalizations that explain the consequences of patient’s behavior will have in the clinical change. E.g., “ <i>The moment you start not to assume that others may think something bad of you, you’ll start to be happy.</i> ”
Using analogies	Verbalizations, usually examples or metaphors, in which a comparison is made. E.g., “ <i>Trying to make someone change is like putting up a wall in the middle of the ocean. No matter how much effort it takes to build it, it will always be knocked down and it will be pointless.</i> ”
Training in reasoning rules	Verbalizations, in form of a rule or instruction, aimed at teaching the patient how he/she should or should not reason. E.g., “ <i>These two approaches are exclusive, if you think one you can’t think the other.</i> ”
Providing goal verbalization	Verbalizations that he/she wants the patient to express explicitly. The therapist leads to the goal verbalization clearly. E.g., “ <i>It would be better to say ...</i> ”, “ <i>What you should think in those cases is ...</i> ”.
Modifier	Definition
Aversive component	Verbalizations that may be aversive to the patient. In general, strategies in which irony, sarcasm or extreme examples are used (non-applicable to the patient’s situation or absurd). E.g., Patient: “ <i>Yeah, but I endure a lot, I’m able to withstand very high frustration situations.</i> ” Therapist: “ <i>Yes, that can also be said by a battered person, a person they use to steal on the street, one who is abused...</i> ”

#### *Training and Reliability in the Patient System of Categories and the Verbal Effectiveness Scale*

To analyze the patient’s behavior and the effectiveness of the Socratic method fragments, it was not necessary to develop new systems of categories because existing categorization systems were used. Instead, Observers 1 and 2 were trained in the following systems: The *Patient System of Categories* and the *Verbal Effectiveness Scale* (Calero-Elvira et al., 2013). They were trained until they achieved, according to the *Patient System of Categories*, at least 10 consecutive sessions with a Cohen’s Kappa coefficient of at least

.60, which is the minimum value required to consider a good agreement (Bakeman, 2000; Landis & Koch, 1977); and, in the *Verbal Effectiveness Scale*, a Intraclass Correlation Coefficient (ICC) that was at least .80 in at least 6 consecutive records. This value was taken as the criteria because the intraclass correlation coefficient values can range between 0 and 1, and those that exceed .80 are considered optimal (Quera, 1997).

#### *Sample Registration*

The sample was registered once adequate levels of reliability were guaranteed for all the categorization



systems. The *Therapist System of Categories* and the *Patient System of Categories* were combined to record the therapist's and the patient's verbal behavior during the Socratic method. Reliability analysis was submitted to more than 10 % of the total study sample and records were maintained as long as the level of reliability achieved was at least .60 (Cohen  $\kappa$ , .61 to .90).

Once the verbal behavior of therapist and patient was recorded, the effectiveness of the Socratic method fragments was recorded using the *Verbal Effectiveness Scale*. The ICC was .947 ( $F = 18.78$ ,  $p = < .001$ ) for intra-rater comparisons and for inter-rater comparisons the value was 1.00 (due the determinant of the covariance matrix is 0, the statistic program SPSS does not calculate the value of the  $F$  test neither the critical value of the statistic  $p$ ).

## Results

### *Differences in the Success of the Socratic Method Fragments (Hypothesis 1)*

Statistically significant differences were found in partial success fragments and in failure fragments according to Pearson's Chi Square test, as shown in Table 2. The experts had more fragments categorized as *partial success* than the inexperienced therapists, and fewer fragments classified as *failure*. However, there were no differences between total success fragments. Adjusted standardized residuals enabled us to see which comparison differences are found, and the direction of the relationship; those values lower than  $-1.96$  i.e., a negative relationship, or higher than  $+1.96$  i.e., a positive relationship.

The Mann-Witney  $U$  test was applied to find out the differences in the rate of patient verbalization that approach the therapeutic objective (VAT) and that move away from it (VOT). No statistically significant differences were found in the VAT rate between the expert and inexperienced therapist fragments ( $z = -1.748$ ;  $p = .08$ ). However, statistically significant differences were found in the rate of VOT ( $z = -2.549$ ;  $p = .01$ ), with the inexperienced therapists having a higher rate in their fragments.

### *Differences in the Degree of Guidance of the Socratic Method Fragments (Hypothesis 2)*

In order to elucidate the differences between experts and inexperienced therapists in the issuance of verbalizations related to the degree of guidance in total success fragments, the fragments classified as a *total success* were selected, and the Mann-Witney  $U$  test was applied to establish if there were any differences in the degree of indication. Statistically significant differences were found: Expert therapists used fewer questions with an indication component, and inexperienced therapists used more questions *indicating* the direction of the response. Likewise, in order to interpret this hypothesis more completely, the use of the questions without indicating was also taken into account. It was found that inexperienced therapists used more questions *without indicating* the direction of the response; i.e., the inexperienced therapists used more questions, both indicating and without indicating, than the experts. Regarding the effect sizes found which were measured according to Cohen's  $d$  index, they are considered to be medium at between .50 and .80 (McGraw & Wong, 1992). On the other hand, no statistically significant differences were found between experts and inexperienced therapists in providing the goal verbalization to the patient.

Finally, regarding the use of explanations that accompany and guide debate questions, statistically significant differences were found between the use of 'didactic' strategies (*explaining, using analogies, training in reasoning rules*), between expert and inexperienced therapists, although the effect size of this relationship is considered to be small at between .20 and .50. Table 3 shows the data related to this second hypothesis.

### *Differences in the Way of Questioning (Hypothesis 3)*

Figure 1 shows that inexperienced therapists employed more questions aimed at questioning validity, severity and utility than experts. These differences are statistically significant as indicated by the values of the Mann-Witney  $U$  test. On the other hand, a nominal variable

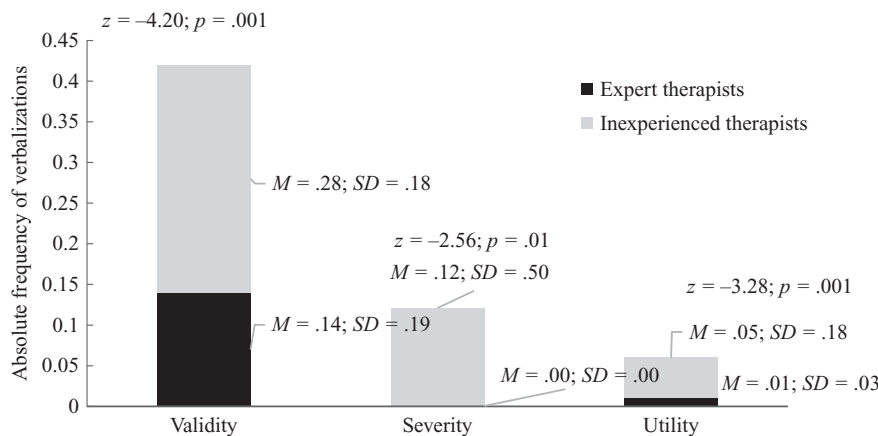
**Table 2.** Experts and the Inexperienced Therapists in the Success of Socratic Method Fragments

Fragment's success	Expert therapists (n = 60)			Inexperienced therapists (n = 53)			$\chi^2$	p
	n	%	R	n	%	R		
Total success	37	61.67	-.5	35	66.04	.5		
Partial success	19	31.67	2.1	8	15.09	-2.1	6.70	.03
Failure	4	6.67	-2	10	18.87	2	1	5

Note. R = Adjusted standardized residuals.

**Table 3.** Verbalizations Related of Guidance in Total Success Fragments

	Expert therapists (n = 37)		Inexperienced therapists (n = 35)		z	p	Cohen's d
	M	SD	M	SD			
Indicating questions	.03	.03	.05	.05	-2.76	.01	.63
Unindicated questions	.24	.17	.78	.43	-3.59	.00	.74
Providing goal verbalization	.09	.15	.03	.05	-1.45	.15	.41
'Didactic' strategies	.59	.23	.45	.19	-2.63	.00	.32

**Figure 1.** Types of Questioning During the Socratic Method by Expert and Inexperienced Therapists

Note: Absolute frequency of verbalisations aimed at questioning issued in each Socratic fragment. Mean, standard deviation and results of the Mann-Whitney U test are specified in each of the categories: Validity, severity and utility.

(order) was created to check whether the therapists followed any order throughout the Socratic method in question sequencing. It was classified that an order was followed as long as *questioning validity* appeared in the first or second part, but not in the third part and, in turn, *questioning severity* and *utility* appeared in the second or third, but not in the first part (following the traditional proposals for the Socratic method). Although it was found that the general trend was not to follow an order, the inexperienced therapists followed it to a greater extent (15.22%) than the experts (0%). These differences are statistically significant as proven by the Mann-Whitney U test ( $\chi^2 = 8.45; p = .04$ ).

#### *Differences in the Use of the Aversive Component between Expert and Inexperienced Therapists (Hypothesis 4)*

Firstly, we wanted to determine whether expert and inexperienced therapists used the aversive component with the same frequency in the Socratic method. The frequency of use of this category was 14 for inexperienced therapists and 75 for experienced therapists. The results

indicated that experts used it more frequently ( $M = .67; SD = .12$ ) than inexperienced therapists ( $M = .05; SD = .04$ ). These differences are statistically significant, as shown by the Mann-Whitney U test values ( $z = 1240.5; p = .01$ ).

Secondly, although it was not part of the hypotheses of the study, we also wanted to investigate whether the differences in use by experts and inexperienced therapists occurred in all the Socratic method fragment groups according to their success. Therefore, fragments classified with either *total success*, *partial success* and *failure* were selected, and the use of the aversive component was compared according to experience. Statistically significant differences were found in total success fragments, in terms of their frequency of use, using the Mann-Whitney U test ( $z = -2.16; p = .03$ ). No differences were found in the partial success fragments ( $z = -1.193; p = .30$ ) or the failure fragments ( $z = -.93; p = .63$ ).

Regarding the sequences of interaction between the therapist and the patient in the use of the aversive component, sequential analysis was used to verify if there was a relationship between the behavior that occurred adjacent to another by calculating the

probability of the transition of one certain behavior and another behavior occurring either before (positive delay) or after (negative delay).

Thus, statistical significance associated with the probabilities of +1 delay between the patient’s behavior categorized as VAT, VOT and VIT and the therapist’s verbalizations with an aversive component, was analyzed. Statistically significant differences were found: Expert therapists used this component contingently only after *intermediate* patient verbalizations or verbalizations *opposing* the therapeutic objective (VIT and VOT). By contrast the inexperienced therapists used it after verbalizations *approximating* the therapeutic objective (VAT), as can be seen in Figure 2.

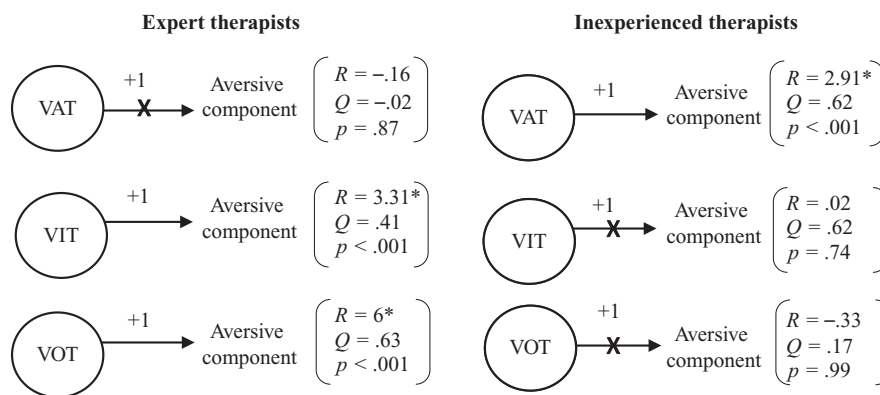
**Differences in the Use of Analogies and Technical Explanations between the Expert and the Inexperienced Therapists (Hypothesis 5)**

The frequency emission of analogies was 39 for inexperienced therapists and 25 for expert therapists; motivating verbalization was 26 and 38, respectively; and 117 and 171 for explanation techniques. No statistically significant differences were found between the inexperienced therapists and the experts in the use of analogies ( $z = -.74; p = .476$ ), motivating verbalizations ( $z = -1.36; p = .17$ ), or explanation techniques ( $z = -1.02; p = .229$ ). Regarding the sequential analysis, we investigated whether the training in reasoning rules was followed by motivating verbalizations in total success fragments. In the case of the inexperienced therapists, it was not found that with a greater probability than expected by chance, they chained these sequences ( $R = -.21; p = .841$ ). However, this contrasted with the results of the expert therapists ( $R = 6.16; Q = .91; p = .01$ ).

**Discussion**

The present study shows interesting differences in the way in which the Socratic method is carried out by experts and inexperienced, although not always in the expected direction. We found before (Calero-Elvira et al., 2013) that Socratic method could be understood as a verbal shaping. In the present study, we have tried to study morphological aspects of the verbal interaction to know how this verbal shaping could be more successful and with this aim we have analyzed differences between expert and inexperienced therapists. In this section, we analyze the differences we have found in the proposed morphological categories and we also indicate the potential functional implications.

Contrary to our hypothesis, both expert and inexperienced therapists had total success with Socratic method fragments. However, experts failed less often, had very few failure fragments but did have more partial success fragments. There was also no difference regarding the VAT rate, but the fragments of inexperienced therapists contained more VOT than the experts’ fragments. Thus, Hypothesis 1 (a and b), were partially confirmed. It could be that despite the difficulties that expert may encounter in changing patient’s verbalizations, most of them continue with their questioning and probably use better arguments and strategies until the patient’s approximation response is achieved. In this case, it seems that experience does at least help to make fewer mistakes or to fail less often. There is a certain parallelism with outcome studies of experts and inexperienced therapists, in which the differences are not so much by being more successful, but the fact that the experts have fewer dropouts (Stein & Lambert, 1995). As a result of these findings, observing the performance of expert therapists in partial success Socratic method fragments could be taken as a model to guide novice therapists or



**Figure 2.** Transition Diagrams between Therapist’s Aversive Component and Client’s Verbalizations

Note. Q = Yule’s Q; R = adjusted standardized residuals; p = p value.

\* Significant contingencies.

therapists in training to be able to identify the performances that may enhance their success.

A classical controversial aspect of the Socratic method in cognitive restructuring is whether it is preferable to provide the solution to the patient or let them discover it by themselves. Both styles can be identified with each of the 'fathers' of cognitive restructuring: The *didactic dispute* is the style proposed by Ellis (Ellis & Grieger, 1977) and the non-confrontational style of *guided discovery* through the Socratic method proposed by Beck (Beck, 1967; Beck et al., 1979). The findings of this study suggest that in the successful fragments of the Socratic method, both expert and inexperienced therapists guide their patients to the solution, although they use different methods. There were no differences in the frequency in which they gave their patients the goal verbalization, but the inexperienced therapists tended to suggest or indicated the response when they questioned more than experts did, which leads us to reject hypothesis 2(a). However, the experts use strategies that are more *didactic*, which supports Hypothesis 2(b).

When it comes to questioning, the inexperienced therapists did this to a greater extent and also tended to follow an order in the sequencing of questions compared with the performance of the experts. These data support Hypothesis 3 and concur with the data found in a previous study on the use of the Socratic method, which also found that the inexperienced therapists used an order in questioning to a greater extent (Pardo-Cebrián & Calero-Elvira, 2017). However, none of these performances relates to total success fragments of Socratic method. It is possible that inexperienced therapists used it to a greater extent because they have recently been trained in the application of the Socratic method and they follow the few existing guidelines. For example, Beck et al. (1979) talk about specific types of questions i.e. validity, severity and utility, and the importance of ordering them carefully. It is more likely that the inexperienced therapists tend to follow rules and instructions when applying a new technique in the beginning. This leads us to consider whether during their training it would be more effective to teach novice therapists: (a) Knowledge about the functional analysis of verbal behavior; together with (b) argumentation and logic techniques to improve their questioning; instead of using Beck or Ellis's model guidelines that have no functional perspective that support them.

Based on the results of this study, we can confirm Hypothesis 4: The experts use the aversive component more, and after patient verbalization they want to reduce or modify. Regarding the interaction, it is very striking that inexperienced therapists pair the aversive component with patients' adaptive verbalizations. Inexperienced therapists may not know how to discriminate that these verbalizations are an approximation to the

therapeutic objective. This could indicate that one of the aspects that may be learned through practice is to identify, properly and at every moment, when patients' verbalizations approach or move away from the therapeutic objective of the Socratic method.

Another possible reason is that the use of the aversive component in therapy does not have a good reputation. Outside the scope of behavior analysis, psychologists often do not know the meaning, or technical use of the term punishment and relate it to aversive stimulation and responses of discomfort and suffering. Therefore, inexperienced therapists may have some fear of using it.

Finally, both experts and inexperienced therapists use analogies and technical explanations with a significantly similar frequency in the total success fragments of the Socratic method, which leads us to reject Hypothesis 5(a). On the other hand, the results allow us to confirm Hypothesis 5(b), because the successful fragments of the expert therapists are characterized by chains of instructions, and motivating verbalizations, which is unlike what happens with the fragments of the inexperienced therapists. As has been shown in studies of instructions (De Pascual Verdú & Trujillo Sánchez, 2018; Marchena Giráldez, 2017), when these are accompanied by motivating verbalizations, their compliance is more likely outside the clinical context. It makes sense that using the instructions in this way, the experts have been reinforced by a greater accomplishment of them by the patients.

Some studies have not found any differences in the differential efficacy of therapy when comparing the level of therapist experience (Norton et al., 2014; Okiishi et al., 2006). However, some differences were found in finer analyses (Leon et al., 2005). We believe that this is the case of the present study, in which the analysis type on the specific performance of clinicians, enabled us to find specific differences that otherwise might not be visible.

Taking up the contributions of the APA Presidential Task Force on Evidence-Based Practice (2006), the data from this study can provide a brief guideline on how to use the Socratic method in cognitive restructuring based on morphological and functional aspects: (a) To use the aversive component, both classical conditioning pairings or operant conditioning consequences (verbalizations with morphology as: Extreme examples, irony, etc.), frequently and contingently on those verbalizations that are subject of; (b) to conduct a Socratic method full of explanations, analogies and reasoning rules ("didactic strategies") as a way to discriminate more specific client responses; and (c) to accompany instructions about how to reason with motivating verbalizations (establishment or abolition operations), describing the consequences that will follow the behavior. All these



indications would be framed and linked to those indicated in previous studies (Calero-Elvira et al., 2013), in which the steps for proper verbal shaping have been proposed.

The above results should be taken with caution taking into consideration the limitations of this study. On the one hand, when comparing the results according to the level of experience, it is better that the therapist's variables are specified and controlled (Leon et al., 2005). Therefore, it would have been desirable to specify and control more the type of therapists' training analyzed and the type of concrete experience, like the number of cases, specialization by clinical areas and educational level. On the other hand, for future studies it would be desirable to know if the success of the Socratic method also translates into a change in the patients' behavior out of session.

To date, this study is the first in which the performance of expert and inexperienced therapists in cognitive restructuring technique has been analyzed in a comparative way. The findings presented here represent a contribution towards the creation of a guideline based on evidence and not only on morphological but also potential functional aspects of verbal interaction on how to apply the Socratic method.

## References

- Abreu, P. R., Hübner, M. M. C., & Lucchese, F. (2012). The role of shaping the client's interpretations in functional analytic psychotherapy. *The Analysis of Verbal Behavior*, 28, 151–157. <https://doi.org/10.1007/BF03393117>
- American Psychological Association, Presidential Task Force on Evidence-Based Practice. (2006). Evidence-based practice in psychology. *American Psychologist*, 61(4), 271–285. <https://doi.org/10.1037/0003-066X.61.4.271>
- Bakeman, R. (2000). Behavioral observation and coding. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 138–159). Cambridge University Press.
- Bakeman, R., & Quera, V. (1995). *Analyzing interaction: Sequential analysis with SDIS and GSEQ*. Cambridge University Press.
- Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. Hoeber. <https://doi.org/10.7326/0003-4819-68-2-502>
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. Guilford Press.
- Beutler, L. E. (1997). The psychotherapist as a neglected variable in psychotherapy: An illustration by reference to the role of therapist experience and training. *Clinical Psychology: Science and Practice*, 4(1), 44–52. <https://doi.org/10.1111/j.1468-2850.1997.tb00098.x>
- Calero-Elvira, A., Froján-Parga, M. X., Ruiz-Sancho, E. M., & Alpañés-Freitag, M. (2013). Descriptive study of the Socratic method: Evidence for verbal shaping. *Behavior Therapy*, 44(4), 625–638. <https://doi.org/10.1016/j.beth.2013.08.001>
- Clark, D. A. (2013). Cognitive restructuring. Part one. General strategies. In S. G. Hoffman (Ed.), *The Wiley handbook of cognitive behavioral therapy*, (1<sup>st</sup> Ed., pp. 1–22). John Wiley & Sons. <https://doi.org/10.1002/9781118528563.wbcbt02>
- Clark, G. I., & Egan, S. J. (2015). The Socratic method in cognitive behavioral therapy: A narrative review. *Cognitive Therapy and Research*, 39(6), 863–879. <https://doi.org/10.1007/s10608-015-9707-3>
- De Pascual Verdú, R., & Trujillo Sánchez, C. (2018). Estudio de la relación entre las verbalizaciones motivadoras y el seguimiento de instrucciones en la terapia psicológica [A study of the relation between motivational utterances and instruction compliance in psychological therapy]. *Revista Clínica Contemporánea*, 9, Article E14. <https://doi.org/10.5093/cc2018a11>
- Ellis, A., & Grieger, R. (Eds.). (1977). *Handbook of rational-emotive therapy*. Springer Publishing Company.
- Froján-Parga, M. X., Calero-Elvira, A., & Montañó-Fidalgo, M. (2011). Study of the Socratic method during cognitive restructuring. *Clinical Psychology & Psychotherapy*, 18, 110–123. <http://doi.org/10.1002/cpp.676>
- Froján-Parga, M. X., Calero-Elvira, A., Pardo-Cebrián, R., & Núñez de Prado-Gordillo, M. (2018). Verbal change and cognitive change: Conceptual and methodological analysis for the study of cognitive restructuring using the Socratic dialog. *International Journal of Cognitive Therapy*, 11(2), 200–221. <https://doi.org/10.1007/s41811-018-0019-8>
- Hollon, S. D., DeRubeis, R. J., Shelton, R. C., Amsterdam, J. D., Salomon, R. M., O'Reardon, J. P., Lovett, M. L., Young, P. R., Haman, K. L., Freeman, B. B., & Gallop, R. (2005). Prevention of relapse following cognitive therapy vs. medications in moderate to severe depression. *Archives of General Psychiatry*, 62(4), 417–422. <https://doi.org/10.1001/archpsyc.62.4.417>
- Kohlenberg, R. J., & Tsai, M. (1991). *Functional analytic psychotherapy: Creating intense and curative therapeutic relationships*. Springer New York. <https://doi.org/10.1007/978-0-387-70855-3>
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159–174. <https://doi.org/10.2307/2529310>
- Leon, S. C., Martinovich, Z., Lutz, W., & Lyons, J. S. (2005). The effect of therapist experience on psychotherapy outcomes. *Clinical Psychology & Psychotherapy*, 12(6), 417–426. <https://doi.org/10.1002/cpp.473>
- Marchena Giráldez, C. A. (2017). *Estudio de las instrucciones durante la interacción terapéutica* [Study of instructions during therapeutic interaction]. (Doctoral dissertation). Universidad Autónoma de Madrid, Spain.
- McGraw, K. O., & Wong, S. P. (1992). A common language effect size statistic. *Psychological Bulletin*, 111(2), 361–365. <https://doi.org/10.1037/0033-2909.111.2.361>
- Moore, J. (2000). Thinking about thinking and feeling about feeling. *The Behavior Analyst*, 23(1), 45–56. <http://doi.org/10.1007/bf03391998>
- Norton, P. J., Little, T. E., & Wetterneck, C. T. (2014). Does experience matter? Trainee experience and outcomes during transdiagnostic cognitive-behavioral group therapy for

- anxiety. *Cognitive Behaviour Therapy*, 43(3), 230–238. <https://doi.org/10.1080/16506073.2014.919014>
- Okiishi, J. C., Lambert, M. J., Eggett, D., Nielsen, L., Dayton, D. D., & Vermeersch, D. A. (2006). An analysis of therapist treatment effects: Toward providing feedback to individual therapists on their clients' psychotherapy outcome. *Journal of Clinical Psychology*, 62(9), 1157–1172. <https://doi.org/10.1002/jclp.20272>
- Overholser, J. C. (2011). Collaborative empiricism, guided discovery, and the Socratic method: Core processes for effective cognitive therapy. *Clinical Psychology: Science and Practice*, 18(1), 62–66. <http://doi.org/10.1111/j.1468-2850.2011.01235.x>
- Overholser, J. C. (2018a). *The Socratic method of psychotherapy*. Columbia University Press. <http://doi.org/10.7312/over18328>
- Overholser, J. C. (2018b). Guided discovery: A clinical strategy derived from the Socratic method. *International Journal of Cognitive Therapy*, 11(2), 124–139. <http://doi.org/10.1007/s41811-018-0017-x>
- Pardo-Cebrián, R., & Calero-Elvira, A. (2017). Applying cognitive restructuring in therapy: The clinical reality in Spain. *Psychotherapy Research*, 29(2), 198–212. <https://doi.org/10.1080/10503307.2017.1341655>
- Poppen, R. L. (1989). Some clinical implications of rule-governed behavior. In S. C. Hayes (Ed.), *Rule-governed behavior: Cognition, contingencies and instructional control* (pp. 325–357). Springer. [https://doi.org/10.1007/978-1-4757-0447-1\\_9](https://doi.org/10.1007/978-1-4757-0447-1_9)
- Quera, V. (1997). Los métodos observacionales en la Etología. In F. Peláez del Hierro & J. J. Veà Baro (Eds.), *Etología: Bases biológicas de la conducta animal y humana* [Ethology: Biological basis of animal and human behavior] (pp. 43–83). Pirámide.
- Schlinger, H. D. (2011). Introduction: Private events in a natural science of behavior. *The Behavior Analyst*, 34(2), 181–184. <http://doi.org/10.1007/bf03392248>
- Schlinger, H. D. A., Jr., & Alessi, G. (2011). Verbally conditioning client behaviors in the therapeutic setting. *Clínica y Salud*, 22(3), 245–255. <https://doi.org/10.5093/cl2011v22n3a5>
- Skinner, B. F. (1963). Behaviorism at fifty. *Science*, 140(3570), 951–958. <https://doi.org/10.1126/science.140.3570.951>
- Stein, D. M., & Lambert, M. J. (1995). Graduate training in psychotherapy: Are therapy outcomes enhanced? *Journal of Consulting and Clinical Psychology*, 63(2), 182–196. <https://doi.org/10.1037/0022-006X.63.2.182>
- Walsh, L. M., Roddy, M. K., Scott, K., Lewis, C. C., & Jensen-Doss, A. (2018). A meta-analysis of the effect of therapist experience on outcomes for clients with internalizing disorders. *Psychotherapy Research*, 29(7), 846–859. <https://doi.org/10.1080/10503307.2018.1469802>