Psychotherapy and psychological time: a case study

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SUMMARY. Aim. The present study is a comparative case study as part of research on the psychotherapeutic process. This research describes the perception of subjective time in two psychotherapeutic processes, one successful and one unsuccessful. Methods. We studied two psychotherapeutic processes of cognitive orientation, which were video recorded and fully transcribed in each session. First a qualitative analysis was applied for quality coding (Top-down) was performed to identify category types of subjective time, depending on psychological wellbeing. These were categorized as past, present, and future; each one in positive and negative forms. Secondly, two quantitative statistical analyses were applied: one of content analysis, which allowed us to observe the frequencies for the six categories, and another, a cumulative frequency analysis, which allowed us to identify a differential pattern in the analyzed cases. Results. These data showed different temporal profiles for both cases, differentiated by categories. This finding that would allow us to track the process of subjectivity in terms of specific components associated with psychotherapy success. Discussion and conclusions. We present a mixed method, a qualitative for initial coding of patient speaking turns and a quantitative methodology such as the cumulative frequency analysis in time in a therapeutic context. Those changes are progressive and must be observed as a continuous and dynamic evolution to allow for an interpretation in a naturalistic context.

KEY WORDS: process research, content analysis, effectiveness, perception of time, case formulation, cognitive psychotherapy.

INTRODUCTION

Man is essentially a temporal, historical, cultural, and narrative being. These dimensions are critical for understanding self-organization in mental states. Moreover, we are interested in understanding time based on intersubjective data, that is to say, data obtained in psychotherapeutic processes under natural conditions. We know that time is not reversible, it involves an evolutionary linear-
the perception of time was a tradition that mainly began with William James, who said it was one of the fundamental elements of cognition because it gives meaning to lived experiences. Other researchers interested in the tradition of the study of time have suggested, for example, that it contributes to regulate present behavior, anticipate the future, and is considered as an indicator of efficient social adaptation, as it allows us to understand the flexibility of social behavior. Nowadays, it is an increasingly studied variable in different areas in psychology.

The perception of time is one of the psychological elements in which all human beings organize and plan their different activities in daily life. Nowadays, we know that the perception of time is not due to a specific sensory modality, but it is considered a complex cognitive skill that involves multiple coordination processes of internal and external keys that include different brain areas, including structures such as the cerebellum, the basal ganglia, and large areas of the sensory, motor, and association cortices. Moreover, evidence from a neurobiological level is added where the perception of time and its subjective processing is distinguished.

From an evolutionary viewpoint, the perception of time is an adaptive function that allows us to efficiently predict, anticipate, and respond to any type of event that exists. Similarly, the capacity to estimate time correctly is fundamental in human daily activity. In addition, it is essential for the survival of human beings as it is a fundamental aspect for achieving different objectives in life within a range of time.

Moreover, as shown by research in recent decades, the subjective perception of time is not isomorphic to objective time (the clock) and it can be deformed by a number of factors. Those that have been addressed by various research paradigms exist between retrospective and prospective paradigms, which are the most important distinction in this regard. Historically, in short, a dichotomy between physical or objective time versus subjective or psychological time has been sustained.

More specifically, in the area of clinical psychology, the temporal nature of human behavior appears with explanatory relevance in various areas such as: psychopathological disorders, emotions and mood disorders, high-risk behaviors, type A personality, basic psychology, and psychotherapy processes. We know that the nature of temporality affects all human existence and psychopathology and therefore the psychotherapeutic process, that aims to achieve changes, forms a part of this.

From the viewpoint of the process of change in psychotherapy, the perception of psychological time is conceptualized as an indicator of the organization of temporal experiences regarding the sense of self. These indicators are seen as temporal orientations and also as temporal distortions that occur in various mental health problems, that we have denominated “perception of problematic time” (PT-p) for the presence of psychological distress, and the “perception of healthy time” (PT-h), normally understood as the presence of psychological wellbeing.

The present study has been guided by the objective to explore the perception of subjective time indicators (patient speaking turns) associated with therapeutic success (subjective perception, agreement between client and therapist to meet objectives, therapist evaluation, and psychological tests), using textual data obtained in naturalistic clinical practice.

In conclusion, the present case study is situated in the research framework of psychotherapy processes in a naturalistic context.

**FRAME OF REFERENCE AND CODIFICATION OF SPEAKING TURNS**

We performed the qualitative codification (top-down) of patients’ speaking turns following the theory of time orientation of Zimbardo & Boyd as a reference and the “RMPS” model of case formulation.

Time orientation has been one of the most notable concepts in this field during recent years, being understood as people’s attitude and focus towards one or more of three dimensions or temporal zones: the past, present, and future. Regarding the temporal orientation and elaborated categories, it is maintained that focus tends to be relatively stable in time, and in general, people are focused on one dimension and that implies consequences in their cognitions, emotions, and behaviors. Zimbardo & Boyd, the model that we use as the main inspiration for this study, propose that the three time zones can be described in 5 temporal dimensions: Past-Positive (PP), based on the vision of positive life experiences that the person has had in the past; Past-Negative (PN) in which the attitude towards the past is focused on negative experiences that may be due to difficult or traumatic real situations, or a negative assessment of past life experiences; Present-Hedonistic (PH) represents the focus towards the search of enjoyment and pleasure; Present-Fatalistic (PF) represents a negative attitude towards current events and experiences, focusing on the loss of hope regarding what could happen in life; Future (F) is the dimension that characterizes a focus towards planning and achieving goals.

Moreover, the narrative categories were mainly supported in the Case Formulation Model RMPS. This model arises from cognitive tradition in psychotherapy, from clinical experience and from research of successful and unsuccessful psychotherapy processes in the non-psychotic spectrum. Finally, it is a model that aims to organize clinical data, session by session, to facilitate the effectiveness of psychotherapy.

Narratives from the formulation model are focused on content involved in the topic(s) that patients present and they can be analyzed from two complementary processes to be understood: Descriptive Narrative and Reflexive Narrative. Firstly, “Descriptive Narrative” (DN) is a narrative that refers to external aspects of what happened to the person that experienced discomfort. This implies a sequential and linear description of a fact. Answer the question: “What happened?” For the positive (healthy), this reveals an elaboration of the “what happened?” that shows a sequential and linear description that is useful to the patient for achieving a representation that contributes to psychological wellbeing. In contrast, for the negative (problematic), this refers to an elaboration of the “what happened?” that shows deficit and/or absence in the adequate sequential and linear description that is not useful for the patient to obtain a representation that contributes to psychological wellbeing.

Secondly, by “Reflexive Narrative” (RN) we mean a narrative that refers to aspects of internal elaboration and reflexive analysis of what happened and what the person...
Psychotherapy and psychological time: a case study

processed internally. It implies an elaboration of meaning and articulation of what happened and it answers the question: “what does the thing that happened mean?”. The positive (healthy) indicates a sequential elaboration and a healthy reflection about experiences that are being transformed into a new narrative frame of reference, facilitated by Piagetian processes of assimilation and accommodation, in order to progressively obtain a new narrative, which is alternative and psychologically healthy. In contrast, the negative (problematic) refers to an internal and reflexive narrative that indicates an absence of transformation of meaning about what happened. Put another way, there was no new information or integration of information, thus the narrative continues to have the quality of being non-adaptive.

METHODS

Participants

The form of case selection corresponded to a sample by accessibility. The inclusion criteria of the study cases were: (a) patients over 21 years; (b) that requested voluntary individual psychotherapy; (c) absence of present psychotic symptoms or history of psychotic episodes; (d) absence of drug addiction.

Moreover, the criteria to consider the appropriate therapist were: (a) the treating therapist was a psychologist; (b) he/she was an accredited psychotherapist; (c) had 10 years of clinical experience, and (d) had training in accredited cognitive psychotherapy.

The case study consisted of two psychotherapeutic processes of 18 and 6 sessions. The successful case corresponded to an adult patient, attended to in a private psychological center of psychotherapy, with a diagnosis of mixed adjustment disorder (anxiety-depression). The patient was a 25-year-old female university student in the process of graduating. The case was successful and had a duration of 18 sessions, including a follow-up session. The frequency of sessions was once a week until session 15. Subsequently, sessions 16 and 17 were performed every two weeks, and session 18, the follow-up and final session, was conducted one month after session 17.

The unsuccessful case corresponded to an adult patient, who was attended to in a private psychological center of psychotherapy, with a diagnosis of agoraphobia. The patient was a 38-year-old male who had completed university studies. The case had a duration of 6 sessions with a frequency of once a week.

Regarding the end of the therapeutic processes, different criteria were used. For the successful case, the criteria were as follows: (a) an agreement between the client and therapist about the completion of objectives; (b) client perception of psychological wellbeing; (c) psychometric tests that indicate remission of symptoms/signs and therapeutic results (Tables 4 and 5); (d) one follow-up session held one month later, that showed both maintenance of remission of symptoms/signs and maintenance of psychological wellbeing.

Moreover, the criteria used for the unsuccessful therapeutic process were: (a) expert opinion of the treating therapist, no progress was not achieved in the agreed therapeutic objective (significantly reduce symptoms and agoraphobic signs) and (b) abandonment treatment.

Subsequently, regarding the ethical safeguards, the informed consent of the patients was requested, guaranteeing the confidentiality of the information provided.

Instruments

Beck Depressive Inventory II (BDI-II): updated version of the BDI by Beck, Steer & Brown58, and adapted into Spanish by Sanz et al.59. It is a self-administered questionnaire designed to assess depressive symptoms in adolescents and adults with 13 years or more. It presents 21 items with four response alternatives, which are assigned scores of 0 to 3 according to the intensity of depressive symptoms60. In Chile, the instrument has been shown to effectively discriminate between clinical population and non-clinical. The internal consistency (0.91), and the factor structure observed are similar to those of other studies61. The latter study showed that the cutoff score of 19 proposed by Beck et al.58.

Beck Anxiety Inventory (BAI): the BAI is a self-report instrument widely used internationally, with high levels of internal consistency and ability to discriminate between normal and pathological anxiety62,63. A Chilean study aimed to evaluate the prevalence of anxiety and depression in high school students observed the alpha value was 0.95.

The Outcome Questionnaire-45 (OQ-45): was developed by Lambert & Cok46 in order to help improve outcomes of treatment. It was validated in Chile in 2000 by Von Bergen & De la Parra47. This self-administered questionnaire has shown high sensitivity and reliability for the quantitative measurement of psychotherapeutic results64,65. This instrument consists of 45 items summarized in a total score and in three subscales: Symptoms of Distress (SD); Interpersonal Relations (IR); Social Role functioning (SR)66.

Derogatis Symptom Inventory (SCL-90)67: it is a self-report assesses the degree of current psychological distress experienced by a person over 90 psychiatric symptoms of varying severity. The respondent must indicate to what extent has bothered or disturbed each of these problems during the last week using a Likert scale of five points. The results are organized into nine primary symptom dimensions (somatization, obsessions, sensitivity interpersonal, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism) and three global indices of psychopathology: Global Severity Index (Global Severity Index, GSI), Discomfort Index Positive (Positive Symptom Distress, PSDI) and Positive Symptom Total (Positive Symptom Total, PST)68.

Procedure

Qualitative analysis

The analyzed psychotherapy processes were video recorded and fully transcribed in Microsoft Word. The transcription was carried out by Psychologists and supervised by the treating therapists. In both cases all data that could identify patients, were modified in order to maintain confidentiality. The transcripts were then exported from Microsoft Word to the program Atlas.ti 6.2 for its qualitative coding (top-down). Then the category generation qualitative analysis was divided into three phases. The first two phases were carried out by reading the transcriptions in Word format and the third phase was carried out using the program Atlas.ti 6.2. First, a team of three psychologists individually proceeded to the selection of topics in both therapeutic processes and then the topics selected by each psychologist were agreed on. The therapeutic objectives were used as selection criteria for the topics. Secondly, one therapeutic objective in its entirety was analyzed for each therapeutic process. Two clinical psychologists with cognitive training agreed on this.
To obtain the categories in the successful case, a case analyzed in a previous study, the relevant topics were selected from the 1st to the 18th session. Based on the agreed objective, speaking turns were selected from 10 sessions: 1st, 2nd, 3rd, 4th, 5th, 6th, 12th, 13th, 15th, 16th, 17th, 18th.

The relevant topics were selected to obtain the categories in the unsuccessful case. Speaking turns were extracted and analyzed from sessions: 1st, 2nd, 3rd, 4th, 5th, 6th, based on the agreed objective (Table 1).

Thirdly, using the program Atlas.ti 6.2, qualitative coding of patient speaking turns was carried out, following an established tabulation (top-down) as orientation based on the Time Orientation Model of Zimbardo and Boyd (Table 2), where one time category was uniquely applied to each turn and this tabulation was carried out by two clinical cognitive psychologists. Subsequently, the narrative categories based on the Model of Case Formulation (Table 3) were applied to the turns described by the time categories.

In total, 10 categories were generated. These were as follows: positive past, negative past, positive present, negative present, positive future, negative future, positive descriptive narrative, negative descriptive narrative, positive reflexive narrative, negative reflexive narrative. Consistency was obtained (inter-judges) higher than 0.81, which is considered exceptional.

Quantitative analysis

Regarding the quantitative analysis, first, a Microsoft Excel spreadsheet of the 6 time categories was applied (top-down) and the data were exported to the statistical program SPSS version 19, to perform the correlation and cumulative frequency analyses. Secondly, a matrix with 4 categories was applied: Positive Descriptive Narrative, Negative Descriptive Narrative, Positive Reflexive Narrative, and Negative Reflexive Narrative, to analyze the time orientation from a narrative perspective.

Moreover, to estimate the therapeutic results, we applied a series of tests, which were validated and adapted in Chile: BDI-II, BAI, OQ-45, SC-L-90. These Instruments were applied in the first session and at the fifteenth session.

The results of the tests applied in the successful case indicate:

1. The BDI-II and BAI scales show, in the first application, the presence of mild symptoms, coherent with the diagnostic hypothesis that the patient had a mixed adjustment disorder at the beginning of the therapy, with depressive and anxious symptoms. These symptoms showed a remission in the second application of both instruments, which were not applied at the end of the therapy, because from the point of view of the treating therapist, the clinical judgment did not advise their application (Table 4).

2. In the OQ-45, the overall score indicated that the person being evaluated belonged to the dysfunctional population, in the first application. In the second application, the results of the total scale indicated that the client no longer belonged to this population, which is expressed on the scales that assess symptomatology and social roles. Despite this change, the client still showed dysfunctionality in the area of interpersonal relations. In the third and final evaluation, both the overall scale and the scores of all the subscales indicated that the patient had returned to a healthy functioning level. For the last application, the Reliable Change Index (RCI) exceeded in the overall result of the questionnaire, as well as in the areas of symptomology and interpersonal relations, which indicated that the change was statistically significant (Table 4).

3. The results of the SCL-90 indicated that: in the first application, while the T scores in all scales were less than T63, the risk indicator, the scales of "somatization", "depression", phobic anxiety had a score equal to or higher than T55, corresponding to the "overall severity" index of a T value of 57. The scales with similar values to the risk indicator provided information consistent with the descriptive clinical hypothesis.

In the second application (session 15), an evident decrease in T values was observed in all scales and indices measured by the SCL-90, with T scores between 30 and 45, which indicate a significant decrease in associated discomfort. This information is consistent with the clinical assessment of remission of the mixed adjustment disorder.

On the scales of somatization, depression and anxiety, the patient showed an initial profile of 1.58% (T61), 1.69% (T58), and 1.2% (T55), and a final profile of 0.08% (T35), 0.15% (T35), and 0.3% (T40), respectively (Table 5).

Moreover, the results of the tests used in the unsuccessful case, not published in this study, were also applied in the second session, showed anxious symptomology consistent with the diagnosis of agoraphobia. These results are not published here because there were no subsequent applications, therefore, they were not considered relevant.

Data analysis

A mixed methodology is used, a qualitative for initial coding of patient speaking turns and a quantitative for cumulative frequency analysis in time in a therapeutic context.

First, we perform a content analysis assisted by the program Atlas.ti 6.2 and a matrix of the 3 identified categories was applied: Past, Present, and Future. It is worth noting that each category had two presentation possibilities: a positive indicator that refers to psychological wellbeing and a negative indicator that refers to psychological distress.

Table 1. Summary of Qualitative process data collection methods, data forms, and analysis method.

<table>
<thead>
<tr>
<th>Case</th>
<th>Data collection Method</th>
<th>Data Form</th>
<th>Total Sessions</th>
<th>Selection speech turn</th>
<th>Sessions</th>
<th>Analysis Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful case</td>
<td>Sessions Psychotherapy</td>
<td>Transcript psychotherapy sessions (Speaking Turns)</td>
<td>18th</td>
<td>For one therapeutic objective (Themes)</td>
<td>1st, 2nd, 3rd, 9th, 12th, 13th, 15th, 16th, 17th, 18th</td>
<td>Content analysis</td>
</tr>
<tr>
<td>Unsuccessful case</td>
<td>Sessions Psychotherapy</td>
<td>Transcript psychotherapy sessions (Speaking Turns)</td>
<td>6th</td>
<td>For one therapeutic objective (Themes)</td>
<td>1st, 2nd, 3rd, 4th, 5th, 6th</td>
<td>Content analysis</td>
</tr>
</tbody>
</table>
psychological discomfort. Therefore, one could expect to find 6 categories. To analyze how these categories are interrelated in the overall continuous process, a matrix that registers the presence and absence of each category was constructed for each sequence of patients speaking turns in both coded therapeutic processes.

Second, we perform a relative frequency analysis during the accumulation of turns from each category, during therapy sessions, to compare the presence of each one in relation to the other. In the analysis of cumulative frequencies, a total of 262 patient speaking turns were registered for the successful case and 220 patient speaking turns for the unsuccessful case.

We emphasize that all speaking turns selected (262 and 220) correspond to the selected therapeutic objective.

The narrative categories were then applied to all speaking turns that were previously coded by applying the 6 time categories. The types of the applied narrative categories were: Positive Descriptive Narrative (DN+), Negative Descriptive Narrative (DN−), Positive Reflexive Narrative (RN+), and Negative Reflexive Narrative (RN−).

### Table 2. Categories time orientation.

<table>
<thead>
<tr>
<th>Categories (Top-down)</th>
<th>Phase 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive past</td>
<td></td>
</tr>
<tr>
<td>Negative past</td>
<td></td>
</tr>
<tr>
<td>Positive present</td>
<td></td>
</tr>
<tr>
<td>Negative present</td>
<td></td>
</tr>
<tr>
<td>Positive future</td>
<td></td>
</tr>
<tr>
<td>Negative future</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3. Categories narratives.

<table>
<thead>
<tr>
<th>Categories (Top-down)</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive descriptive narrative</td>
<td></td>
</tr>
<tr>
<td>Negative descriptive narrative</td>
<td></td>
</tr>
<tr>
<td>Positive reflexive narrative</td>
<td></td>
</tr>
<tr>
<td>Negative reflexive narrative</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4. Results of applications BDI-II, BAI and OQ-45.

<table>
<thead>
<tr>
<th>BDI II</th>
<th>BAI</th>
<th>OQ-45</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>IR</td>
<td>SR</td>
</tr>
<tr>
<td>1st session</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td>15th session</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>PC</td>
<td>43</td>
<td>16</td>
</tr>
</tbody>
</table>

### Table 5. Results of SCL-90 applications.

<table>
<thead>
<tr>
<th>SCL-90 Scales</th>
<th>T (1st application)</th>
<th>T (2nd application)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatization</td>
<td>61</td>
<td>35</td>
</tr>
<tr>
<td>Obsessions y compulsions</td>
<td>53</td>
<td>30</td>
</tr>
<tr>
<td>Interpersonal sensitivity</td>
<td>54</td>
<td>37</td>
</tr>
<tr>
<td>Depression</td>
<td>58</td>
<td>35</td>
</tr>
<tr>
<td>Anxiety</td>
<td>55</td>
<td>40</td>
</tr>
<tr>
<td>Hostility</td>
<td>56</td>
<td>30</td>
</tr>
<tr>
<td>Phobic anxiety</td>
<td>59</td>
<td>45</td>
</tr>
<tr>
<td>Paranoid ideation</td>
<td>47</td>
<td>45</td>
</tr>
<tr>
<td>Psychoticism</td>
<td>53</td>
<td>43</td>
</tr>
<tr>
<td>Index of overall severity</td>
<td>57</td>
<td>34</td>
</tr>
<tr>
<td>Total positive symptoms</td>
<td>61</td>
<td>36</td>
</tr>
<tr>
<td>Positive symptomatic discomfort</td>
<td>48</td>
<td>30</td>
</tr>
</tbody>
</table>

**RESULTS**

In the successful case, analyzed in a previous publication by Quiñones et al.34, a cumulative frequency analysis was carried out for a total of 262 patient speaking turns, selected from different sessions. The previous the reported data, a change in relative frequencies was shown between categories (from the possible 6) accumulated during the sessions. The main result showed a practically perfect negative correlation between the Negative Past and Negative Present categories in the first 150 turns, a correlation that later becomes positive and close to the maximum value. Another interesting result from this study, is that when we observed a chance in the correlation value (around turns 150-160) (Figure 1a) between the before mentioned categories, there is an increase in frequency in the Positive Present category, which in turn, almost perfectly negatively correlates with Negative Past and Negative Present.

In the present study, in addition, we report a different level of analysis for this successful case, in which we associated the main changes in frequency of the time categories with a specific type of narrative detected in the sessions of the therapeutic process (Figure 1), the descriptive narrative and reflexive narrative both in its positive and negative variants. When the type of Positive Reflexive Narrative is observed, there is an inverse relationship in the cumulative frequency between Positive Present and Negative Past ($r=-0.987$ and $p=0.000$). Moreover, when the Positive Reflexive Narrative it presents (from the speaking turn number 161), the Positive Present cat-
**DISCUSSION**

Our main finding in the successful case is that by cumulative frequency analysis in a succession of speaking turns during therapy where, in the first 150 turns, we observed a negative correlation between the Past Negative and Present Negative categories, which then changed dramatically to a positive correlation between the same categories, significantly increasing the relative presence of the Present Positive category. This change, in the sense of category correlation, is associated with a change in the narrative, showing a change in the transition to a Positive Reflexive Narrative. We interpret this aspect as re-construction and self-observation conducted by the therapist who managed to facilitate the delimitation and integration of information in the patient, which transforms into possibility and ends up being understood as information of itself, and not in a past that has a type of damning fate (“no escape”). The flow of information of the sense of time (Past) begins to gradually change, since awareness now allows us to re-read the past (information) as present, and it is gradually transformed into learning and possibility in the now. It is a kind of evolutionary coherence, to be in harmony with oneself, and with the possibilities of an information processing system, focused on solving problems from an evolutionary perspective.

In the second cross analysis of narrative-type categories, we see the type of narratives involved in the process of change in the temporal information flow. In our opinion, it indicates that chronological time is critical to follow a higher level of information processing that we call reflexive narratives, which refers to subjective and personal time that is in reference to chronological time but goes further. Chronological time is a possibility of primary elaboration and is necessary, but not sufficient. We understand it as necessary to nurture a sense of the canonical,
CONCLUSIONS

It is important to note the critical dimension of the temporal profiles in the present study. This allows us to affirm, in an exploratory manner, that different temporal profiles are observed for both cases, successful versus unsuccessful, in relation to psychological wellbeing.

The phenomenological analysis of the patients’ experience, analyzed here, shows that the perception of psychological time (temporal profile) has an impact over the psychological discomfort versus psychological wellbeing. Therefore, in our view, it should be considered as a variable to identify and gradually intervene in the therapeutic process, which is inserted in a naturalistic context of research.

Finally, this case study has limitations mainly associated with such studies (for example, the problem of generalization of results). The case study has played a key role in clinical psychology, despite all the limitations of which are known in the scientific literature. However, our opinion is that this research enriches the perspective gradually start studying and better understanding; “subjective experience of temporality” in therapeutic processes in a naturalistic context.

Conflict of interest: the authors declare that there is no conflict of interest.

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Quiñones A et al.