CLASSIFYING WHAT PSYCHOTHERAPISTS DO: A SECOND STEP

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Abstract

Classifications of psychotherapy procedures have not yet reached unanimous consent, as the wide range of theoretical terms used in the definitions produce linguistic barriers. The CLP project may change this by defining over 100 psychotherapy procedures clearly and operationally in plain language with minimal or no use of theoretical terms. Marks et al. (2012) first tried to lower the barriers by empirically classifying psychotherapy procedures using their features ("domains", Classification "A"). However, observers are not passive recorders and classification involves choices, so observer bias can't be totally excluded, especially if choices are not explicit a priori. We therefore decided that the first two Authors (also members of the Project Task Force) would make a second classification ("B") independently in order to compare Classifications A with B at a second stage.

Method: The same set of procedures as in Marks et al. (2012) was classified independently, but with different assumptions, using a definition of psychotherapy procedure which differentiates its therapeutic goal(s) from its components. The goal was defined as the psychological dimension which the procedure aims to modify (usually stated in the CLP definition), while the components are the steps taken to this end, inferred from the procedure's description and brief case illustration. The goal areas agreed a priori between the two Authors (S. Borgo & L. Sibilia) were chosen according to the main psychological response systems: cognitive, behavioral, emotional (affective) and somatic (sensations). Then the two raters (S.B. & L.S.) allocated independently the goals of each procedure to one of the four goal areas. The concordance rates were computed with a Chi Square analysis.

Results: Concordance was significantly better than chance for all 4 areas, the overall rate of agreement being 78%. 15 components were found in Classification B, which were also independently classified by the two raters; overall 85% of all procedures were classified.

Conclusion: Defining psychotherapy procedures in plain language with operational descriptions led raters to agree fairly well in classifying psychotherapy procedures, and to the identification of less than 20 procedural components in psychotherapies across orientations.

Aims of CLP project

The project for a Common Language for Psychotherapy Procedures (CLP) aimed to create a universally agreed lexicon of psychotherapy procedures (Marks, Sibilia & Borgo, 2010). It made several assumptions. First, it assumed that it is legitimate and possible to define psychotherapy procedures (what therapists do) independent of the patient-therapist relationship if clear operational definitions are used. Second, it assumed that we can define procedures in plain language, shorn of theory, which, in turn, confers advantages: a) reliable reproduction for teaching and research; b) understanding by people with average education; and c) a classification of procedures independent of theories.

The lexicon, in the same way as in many other disciplines (Marks & al. 2012) can reduce confusion among experts and so foster the development of psychotherapy into a science. It can also improve the understanding of psychotherapy by patients and others. The CLP Project began in the early 2000s. Many procedures have already been defined (80 by 2010, 100 by Aug. 29, 2014) across a wide range of approaches. This allows us to try to classify psychotherapy procedures.

Towards a classification of psychotherapy procedures

The need for a classification of psychotherapy procedures was underlined by Marks & al. (2012). Regarding the benefits of a classification, Gould (1989) noted:

> *"Taxonomy (the science of classification) is often undervalued as a glorified form of filing—with each species in its prescribed place in an album; but taxonomy is a fundamental and dynamic science, dedicated to exploring the causes of relationships and similarities ... Classifications are theories about the basis of natural order, not dull catalogues compiled only to avoid chaos."*

Any classification tries to achieve at least one of two scientific goals:

1) reduce a great variety of objects or events to a limited more manageable number of options; this usually means finding homogeneous areas to which objects pertain, to allow generalisations about them;

2) find a hidden order underlying the variety of objects, or find factors able to explain the variety of objects.

Marks et al. (2012) first tried to empirically classify psychotherapy procedures via their features ("domains", Classification "A"). While Marks & al. (2012) had inspected the features of each procedure from its definition and its case illustration and consensually assigned it to one or more of 16 "domains", which were found and labelled, the authors now decided instead to adopt a top-down approach. Rather than let the order arise from the data (a bottom-up empirical approach), this 2nd approach was deductive (rational), as it: a) stems from the definition of "psychotherapy procedure" given below, which differentiates goals from components, and b) defines a limited number of goal categories.

Finding order in the large array of procedures used in psychotherapy motivated our endeavour to advance understanding of the processes of personal change.

Addressing the problem of the observers

As the CLP Project defines procedures in a common operational format without theoretical terms, and illustrates their use by brief clinical examples, it seems likely that the theoretical orientation of the author of each entry should not bias any attempt at classi-

fication. However, the theoretical orientation of classifiers might bias the classification. Observing similarities and differences among objects is not a neutral behavior. A "confirmatory bias" could always be present, as the work of observing requires some abstraction, based on the observer's assumptions, mental categories or constructs, and choices of which features are appraised more and which less.

The current attempt at classification

To reduce this problem, a different classification from the one by Marks & al. (2012) was developed independently by two members of the CLP Task Force (S. Borgo & L. Sibilia) who did not participate in the 1st attempt. Here we describe the 2nd of the 2 attempts at classification, based on the online definitions of the same 80 procedures published in 2010 on the CLP website: www.commonlanguagepsychotherapy.org.

The 2 authors of the 2nd attempt (Classification B) observed that many psychotherapy procedures share common goals independent of how those goals are pursued, and that those goals are generally stated in the definition of almost every procedure.

This observation prompted an inquiry into the definitions available of the activity of psychotherapy itself. Though there is no single universally agreed definition of psychotherapy, the authors gathered from inspection of the definitions in the CLP and by many other Authors of this wide field, that psychotherapy can be conceived as:

> "*An interpersonal activity that aims to produce a desirable change in a patient's psychologically relevant dimension by steps followed in a definite order*."

Any psychotherapy procedure should thus feature a goal (a desirable change in a psychologically relevant dimension of patients) as distinguished from its components (series of steps followed in a definite order), which allow therapists and patients to attain the goal.

Method

Any classification assumes that certain features of the objects being classified are more important than other features, so preliminary choices were made in an effort to make those choices explicit and stick to them. Two studies were then performed, as follows:

Study 1 – Procedures' goals

Based on the above distinction between a procedure's goals and its components, the main dimensions which any psychotherapy procedure aims to change (goal areas) are first agreed, after which one can classify the procedure.

The main areas which were 1st seen as possible goals of all psychotherapy procedures were the response systems around which psychological knowledge is usually organised: Cognitive, Behavioural, and Emotional-Affective, plus Bodily Sensations. Definitions appear in TABLE 1.

TABLE 1 – 4 agreed areas of procedures' goals:

1. *Behavioral*: any observable behaviors, including verbal behavior
2. *Cognitive*: cognitive contents (e.g. beliefs, attitudes) and processes (e.g. attentional focus)
2. *Emotional (Affective)*: any emotional (affective) response or state.
3. *Bodily sensations*: any physical sensation.

The data-base used for classification comprised 79 procedures from the 81 described in Marks, Sibilia & Borgo (2010). The two Authors (S.B. & L.S.) agreed that two of the 81 CLP entries published don't fit the above definition of psychotherapy procedure: "EMPATHY DOTS, USE OF", and "INTERNET-BASED THERAPY". In the former (entry no.19) no goals were specified for the patient, only for the therapist, while in the latter (no.38) the entry describes not a procedure but a communication channel (e.g.: internet-based therapy).

S.B. & L.S. decided to evolve a 1st level of classification based on these 4 goal areas of procedures. The two authors then allocated, independent of each other, the above 79 procedures to one or more of the four goal areas.

Results of Study 1

In Table II (APPENDIX) the whole list of procedures is allocated in each goal area. Results of Chi Sq. tests of significance of concordant allocations are in Tab.2. 85% (67) of the procedures were classified concordantly by the two raters into one of the four goal areas; only 15% (12) of the ratings were discordant. Overall agreement was 78% and significant (Chi square: 67.5; $p<0.0000001$).

Tab. 2 - Allocation of procedures goals in each area (1: First Author, 2: Second Author):

Areas:	yes1/yes2	no1/no2	no1/yes2	yes1/no2	Agreement	Chi	p <
Any area	a	d	b	c	(a+d)/(a+b+c+d)		
Behavioral	24	34	10	11	73.4%	14.89	.0002
Cognitive	33	25	11	10	73.4%	16.2	.00006
Emotive-affective	12	45	4	18	72.2%	9.79	.002
Bodily sensations	2	70	1	6	91.1%	5.45	.02
All	71	174	26	45	77.5%	67.51	.0000001

Study 2 – Components

As noted above, after this primary study, for a secondary classification S.B. & L.S. identified the components – the steps (operations) used by therapists as described in each entry in both its "Elements" and in its "Case Illustration" . The questions addressed in this study were:

· Can we identify basic independent components of the psychotherapy procedures?

· Does each component aim to change one or more specific goals?

Careful analysis of the 79 CLP procedures led to joint agreement on the following 15 components (Tab.3): AF = *Attention Focusing*; BP = *Behavioral Prescription*; CM = *Contingency Management*; CR = *Cognitive Restructuring*; EM = *Empathy*; ER = *Emotional Regulation*; ES = *Emotional Expression and Support*; EX = *Exposure*; IT = *Imagery Techniques*; MO = *Motivational Techniques*; PS = *Problem Solving*; RP = *Role Playing*; RX = *Relaxation*; SC = *Self Control*; SS = *Social Skills Training*.

S.B. & L.S. then tried to allocate each component to one of the above goal areas, based on its content. This was not completely possible, as most (11/15) were judged as fitting one of the four pre-agreed areas (Tab.1), but 4/15 needed two new intermediate areas: Cognitive-Behavioral and Emotional-Behavioural. Definitions of the 15 components appear in Tab.3, together with the areas to which they were thought to pertain. As Tab.3 shows, the names of the steps (operations) were chosen to follow as closely as possible those in the research literature.

Tab.3 - The 15 jointly identified components, goal areas, codes, names and definitions.

1	AF	Attention focusing	Focusing attention on external or internal stimuli (including unreported cognitions)
2	IT	Imagery techniques	Use of mental images
3	CR	Cognitive restructuring	Awareness raising, belief identification, rational debate, reality testing, belief reformulation, re-attribution, relabelling, re-phrasing
4	PS	Problem solving	Goal setting, brain storming (divergent thinking), decision making, self-appraisal, generalisation
5	MO	Motivational techniques	Motivational matrix, imagery, decision making
6	SC	Self control	Goal setting, discriminant training, self-observation, self-appraisal, self-talk, self-reinforcement, homework
7	SS	Social skill training	Modelling, rehearsal, home practice
8	CM	Contingency management	Prompting, differential reinforcement and punishment
9	BP	Behavioural prescription	Suggestions/requests to perform specific behaviours (including verbal behaviours)
10	RP	Role playing	Modelling, rehearsal
11	EX	Exposure	Prescriptions to face an avoided stimulus or stimulus complex, and cope with the resultant feelings and sensations
12	EM	Empathy	Providing empathic behaviour
13	ES	Emotional support	Providing emotional support
14	ER	Emotion regulation	Awareness raising, self-observation (AF on emotional stimuli and/or responses), BP, modelling, rehearsal
15	RX	Relaxation	Prescriptions of specific exercises to induce relaxation, home practice

Legend:

Cognitive	Cognitive-behavioural	Behavioural	Emotional-Behavioural	Emotional-affective	Bodily sensations

The frequencies of components detected in the 79 procedures were computed and ranked (TABLE 4). There is a wide variation in the frequency of psychotherapy components in the data set, ranging from 28/79 (35%) for Cognitive Restructuring (CR) to 3/79 (4%) for Emotional Support (ES). The four most-used components CR, AF, EX, and SC appear in two-thirds (67%) of all the procedures considered.

The allocation of all components in the 79 procedures appears in the APPENDIX (Table I), which groups the procedures from the most to the least frequent components.

Tab.4 - Frequencies of components identified in the 79 procedures.

28	CR - Cognitive restructuring
16	AF - Attention focusing
15	EX - Exposure
12	IT - Imagery techniques
12	SC - Self control
10	CM - Contingency management
9	RP - Role playing
8	PS - Problem solving
8	SS - Social skill training
7	EM - Empathy
6	ER - Emotion regulation
5	RX - Relaxation
4	MT - Motivational techniques
3	BP - Behavioural prescription
3	ES - Emotional support

As the components are less numerous than the procedures, they co-occur frequently in many procedures. A map of their co-occurrence is in the APPENDIX, TABLE III.

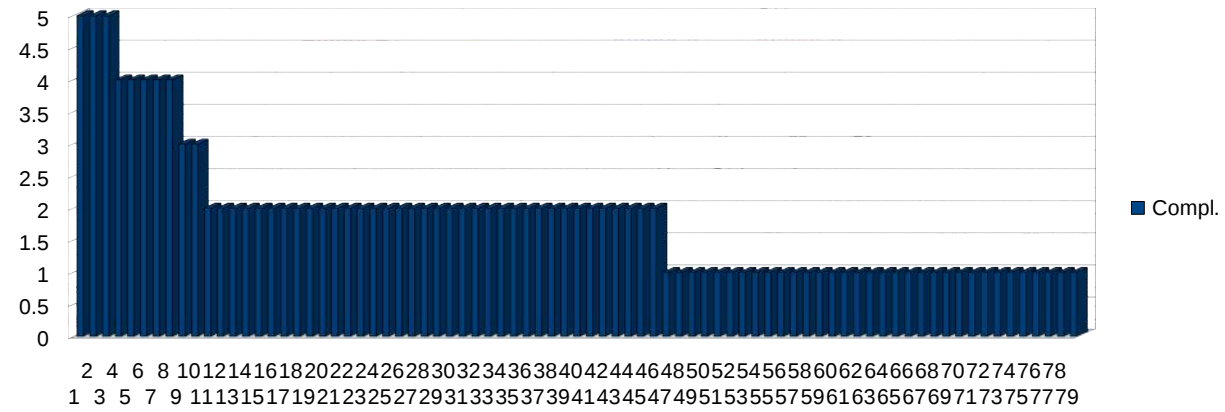
Moreover, as the co-occurrence of two components in procedures more often than by chance may cast doubts about their independence of each other, inter-correlations were computed among the 15 components on all procedures, based on presence/absence of each component. The C Sq. test of frequencies was calculated. Results are in Tab.5.

Significant co-occurrence of components in procedures, computed to test their individuality, yielded a great majority of chance associations; Tab.5 shows that the great majority of components are present jointly in the procedures with only chance probability: only 7 of 105 components associated significantly, a rate very close to the limits of normal sample variance.

Tab.5 - Significance of co-occurrence of components in procedures (values of p of X Sq.). Significant values in bold italics.

1	AF	-													
2	IT	0,77	-												
3	CR	0,15	0,92	-											
4	PS	0,59	0,21	0,33	-										
5	MO	0,31	0,56	0,14	0,50	-									
6	SC	0,06	0,12	0,45	0,21	0,39	-								
7	SS	0,59	0,21	0,55	0,79	0,50	0,39	-							
8	CM	0,09	0,16	0,08	0,99	0,44	0,65	0,99	-						
9	BP	***0,00***	***0,01***	1,00	0,17	0,69	0,46	0,56	0,51	-					
10	RP	0,49	0,18	0,41	0,19	0,47	0,74	0,29	0,90	0,53	-				
11	EX	0,46	***0,03***	0,19	0,16	0,33	0,86	0,64	0,90	***0,03***	0,13	-			
12	EM	0,54	0,25	0,24	0,36	0,56	0,25	0,36	0,30	0,59	0,78	0,19	-		
13	ES	0,38	0,46	0,20	0,17	0,69	0,36	0,56	0,26	0,73	***0,00***	0,40	0,59	-	
14	ER	0,39	0,29	0,41	0,56	0,53	0,89	***0,05***	0,34	0,08	0,65	0,33	0,47	0,08	-
15	RX	0,25	0,34	0,79	0,43	0,60	0,10	0,43	0,59	0,65	0,51	0,20	0,48	***0,05***	0,27	-
		AF	IT	CR	PS	MO	SC	SS	CM	BP	RP	EX	EM	ES	ER	RX
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Procedures also show notable variation in their number of components, reflecting their complexity. Procedures were also ranked for complexity; the result appears in Tab.6. This shows that most procedures (46, [58%]) had more than one component, 36 (45%) had 2 components, 10 (13%) more than two components, and 8 (9%) more than 3, while only 3 procedures (4%) had five components: *Dialectical Behavior Therapy* (DBT), *Well-being Therapy*, and *Promoting Resilience in Young Children*.



Tab.6 - N. of components (complexity) identified in the 79 procedures.

In the APPENDIX, based on their components, all procedures were grouped in “families” (Table IV), and TABLE V shows the largest sets of procedures with at least two

components.

Results of Study 2

15 components were jointly detected, as steps functional to attain changes in the four psychological areas found in the previous study, with two more goal areas (Cognitive-Behavioral and Emotional-Behavioral) needed to accommodate four components. With few exceptions (*Behavioral Prescription* and *Exposure*), almost all components did not co-occur significantly in the procedures, which is indirect confirmation of their independence.

From 1 to 5 of these components are present in all the 79 psychotherapy procedures considered. 67% of the procedures contained the first 4 most frequent components (*Cognitive Restructuring*, *Attention Focusing*, *Exposure*, *Self-Control*). Adding two more components (*Imagery Techniques* and *Contingency Management*) led to 80% of all the procedures being covered.

Conclusions

The approach used in the above two studies seems applicable to all psychotherapy procedures. It just separates the goal(s) of any psychotherapy procedure from its specific operation, whatever the goals might be. The above studies bolster the idea that most psychotherapy procedures use a limited number (15) of independent components, and that each component involves a variable pertaining to 1-2 of four psychological areas which we call goal areas (Cognitive, Behavioural, Emotional-Affective and Somatic Sensations). Here too, though there might be some arbitrariness in these categories, they stem from generally-agreed views of response systems (motor, cognitive, autonomic). Moreover, the components identified are independent as they co-occur in the same procedures no more often than one would expect by chance.

The psychotherapy procedures we considered have various levels of complexity, as their numbers of components are distributed unevenly across procedures: a minority (42%) have just one component, and most (58%) have up to five components, examples being *Dialectical Behaviour Therapy* (DBT), *Well-being Therapy*, and *Promoting Resilience in Young Children*. Classifying procedures by their components does reduce some of the complexities involved by classification, though it loses some information. However, as Gould (1985) noted:

> "*We often think, naively, that missing data are the primary impediments to intellectual progress – just find the right facts and all problems will dissipate. But barriers are often deeper and more abstract in thought. We must have access to the right metaphor, not only the requisite information. Revolutionary thinkers are not, primarily, gatherers of facts, but weavers of new intellectual structures.*" (Essay 9).

Perfect order is unlikely to arise from the data for a long time to come, but work continues to that end.

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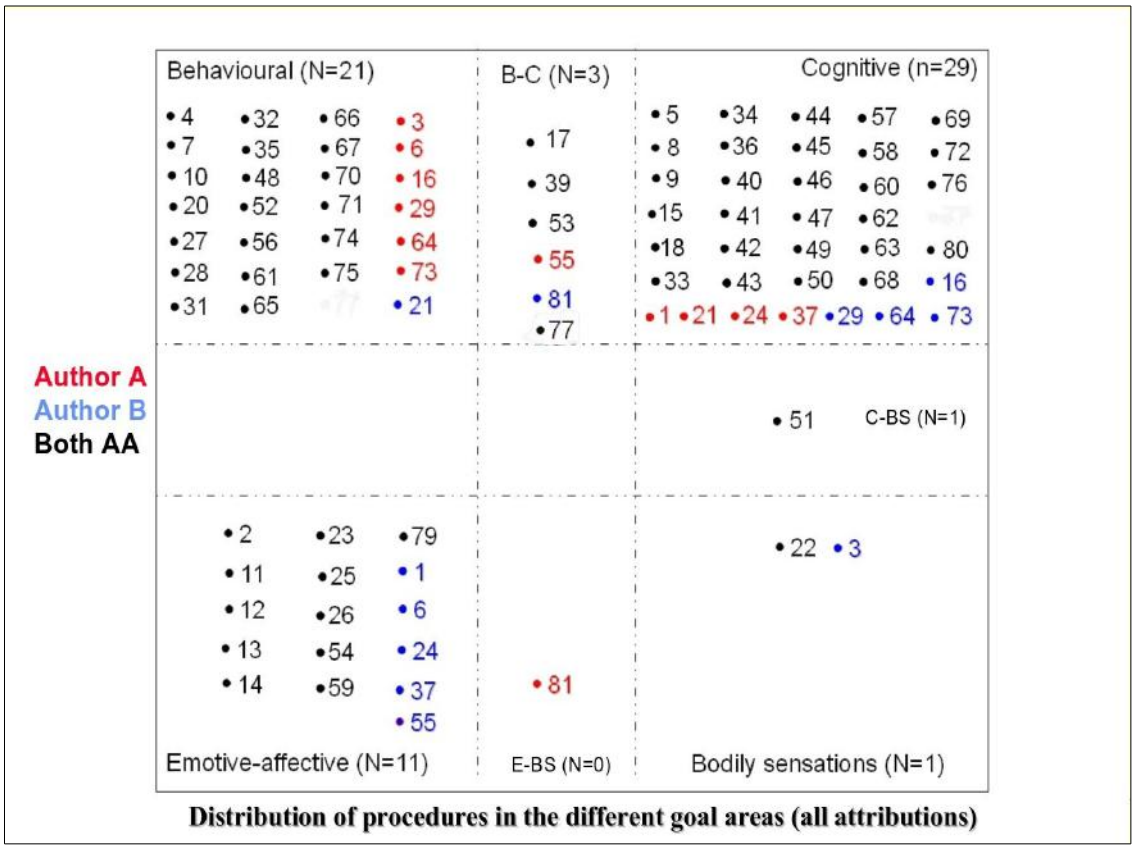
APPENDIX

TABLE I. List of procedures

All procedures in CLP at 2010 (*Non procedures in italics*)
1)ACCEPTANCE, PROMOTING OF
2)ANGER MANAGEMENT
3)APPLIED RELAXATION
4)ASSERTIVENESS (ASSERTIVE, ASSERTION) TRAINING
5)ATTENTION TRAINING (AT)
6)BECOMING THE OTHER
7)BEHAVIORAL ACTIVATION
8)COGNITIVE DEFUSION
9)COGNITIVE RESTRUCTURING
10)COMMUNITY REINFORCEMENT APPROACH (CRA)
11)COMPASSION-FOCUSED THERAPY
12)COMPUTER-AIDED VICARIOUS EXPOSURE (CAVE)
13)COPING CAT TREATMENT
14)COUNTERTRANSFERENCE, USE OF
15)DANGER IDEATION REDUCTION THERAPY (DIRT)
16)DECISIONAL BALANCE
17)DIALECTICAL BEHAVIOUR THERAPY (DBT)
18)DREAM INTERPRETATION
19)EMPATHY DOTS, USE OF
20)EVOKED RESPONSE AROUSAL PLUS SENSITIZATION
21)EXPERIMENT
22)EXPOSURE, INTEROCEPTIVE (TO INTERNAL CUES)
23)EXPOSURE, LIVE (IN-VIVO, LIVE DESENSITIZATION)
24)EXPRESSED EMPATHY
25)EXPRESSIVE WRITING THERAPY
26)FAMILY FOCUSSED GRIEF THERAPY
27)FAMILY WORK FOR SCHIZOPHRENIA
28)FIXED-ROLE THERAPY
29)FREE ASSOCIATION
30)GUIDED MOURNING
31)HABIT REVERSAL
32)HARM REDUCTION
33)IMAGERY REHEARSAL THERAPY OF NIGHTMARES
34)IMAGERY RESCRIPTING THERAPY
35)IMAGO RELATIONSHIP THERAPY
36)INFLATED RESPONSIBILITY, REDUCING
37)INTERNALIZED-OTHER INTERVIEWING
38)INTERNET-BASED THERAPY
39)INTERPERSONAL PSYCHOTHERAPY (IPT)
40)INTERPRETING DEFENSES AGAINST UNPLEASANT FEELINGS
41)LIFE-REVIEW (REMINISCENCE) THERAPY
42)LINKING CURRENT, PAST AND TRANSFERENCE RELATIONSHIPS
43)MENTALIZING, PROMOTION OF
44)METACOGNITIVE THERAPY (MCT)
45)METAPHOR, USE OF
46)METHOD OF LEVELS (MOL)
47)MINDFULNESS TRAINING
48)MORITA THERAPY
49)MOTIVATIONAL ENHANCEMENT THERAPY (MET)

50)MOTIVATIONAL INTERVIEWING (MI)
51)NARRATIVE EXPOSURE
52)NIDOTHERAPY
53)PROBLEM-SOLVING THERAPY (PST)
54)PROLONGED EXPOSURE COUNTERCONDITIONING
55)PROLONGED-GRIEF THERAPY
56)PROMOTING RESILIENCE IN YOUNG CHILDREN
57)PUPPET PLAY PREPARING CHILDREN FOR SURGERY
58)RECIPROCAL ROLE PROCEDURES, DESCRIBING & CHANGING
59)REPAIRING RUPTURE
60)REPERTORY GRID TECHNIQUE
61)RITUAL (RESPONSE) PREVENTION
62)SCHEMA FOCUSSED EMOTIVE BEHAVIOR THERAPY (SET)
63)SELF AS CONTEXT
64)SELF-CONTROL SKILLS TRAINING
65)SELF-PRAISE TRAINING
66)SIBLING FIGHTING-REDUCTION TRAINING
67)SKILLS-DIRECTED THERAPY (SDT)
68)SOCRATIC QUESTIONING
69)SOLUTION-FOCUSED QUESTIONING / BRIEF THERAPY
70)SPEECH RESTRUCTURING
71)STIMULUS CONTROL OF WORRY
72)TASK CONCENTRATION TRAINING (TCT)
73)TIME-BOUNDARY SETTING AND INTERPRETING
74)TIME-IN MANAGEMENT
75)TOKEN ECONOMY
76)TRANSFERENCE INTERPRETATION
77))TRIPLE P – POSITIIVE PARENTIING PROGRAM
78)TWO-CHAIR TECHNIQUE
79)VALIDATION OF FEELINGS
80)VALUES EXPLORATION AND CONSTRUCTION
81)WELL-BEING THERAPY (WBT)

TABLE II - Procedures allocated in each goal area. N. is computed only on the basis of concordant allocations (black):



Distribution of procedures in the different goal areas (all attributions)

TABLE III – N. of co-occurrence of the components:

	AF	CR	IT	PS	MO	SC	SS	CM	BP	RP	EX	ER	EM	ES	RX	
AF	16															Attention focusing
CR	8	28														Cognitive restructuring
IT	2	4	12													Imagery techniques
PS	1	4	0	8												Problem solving
MO	0	0	1	0	4											Motivational techniques
SC	0	3	0	0	0	12										Self control
SS	2	2	0	1	0	2	8									Social skill training
CM	0	1	0	1	0	1	1	10								Contingency management
BP	3	1	2	1	0	0	0	0	3							Behavioural prescription
RP	1	2	0	2	0	2	0	1	0	9						Role playing
EX	4	3	5	1	0	2	1	2	2	0	15					Exposure
ER	2	3	0	1	0	1	2	0	1	1	2	6				Emotion regulation
EM	2	1	0	0	0	0	0	0	0	1	0	1	7			Empathy
ES	0	0	0	1	0	1	0	1	0	2	0	1	0	3		Emotional support
RX	0	2	0	1	0	2	1	1	0	1	2	1	0	1	5	Relaxation

TABLE IV – Families of procedures by components:

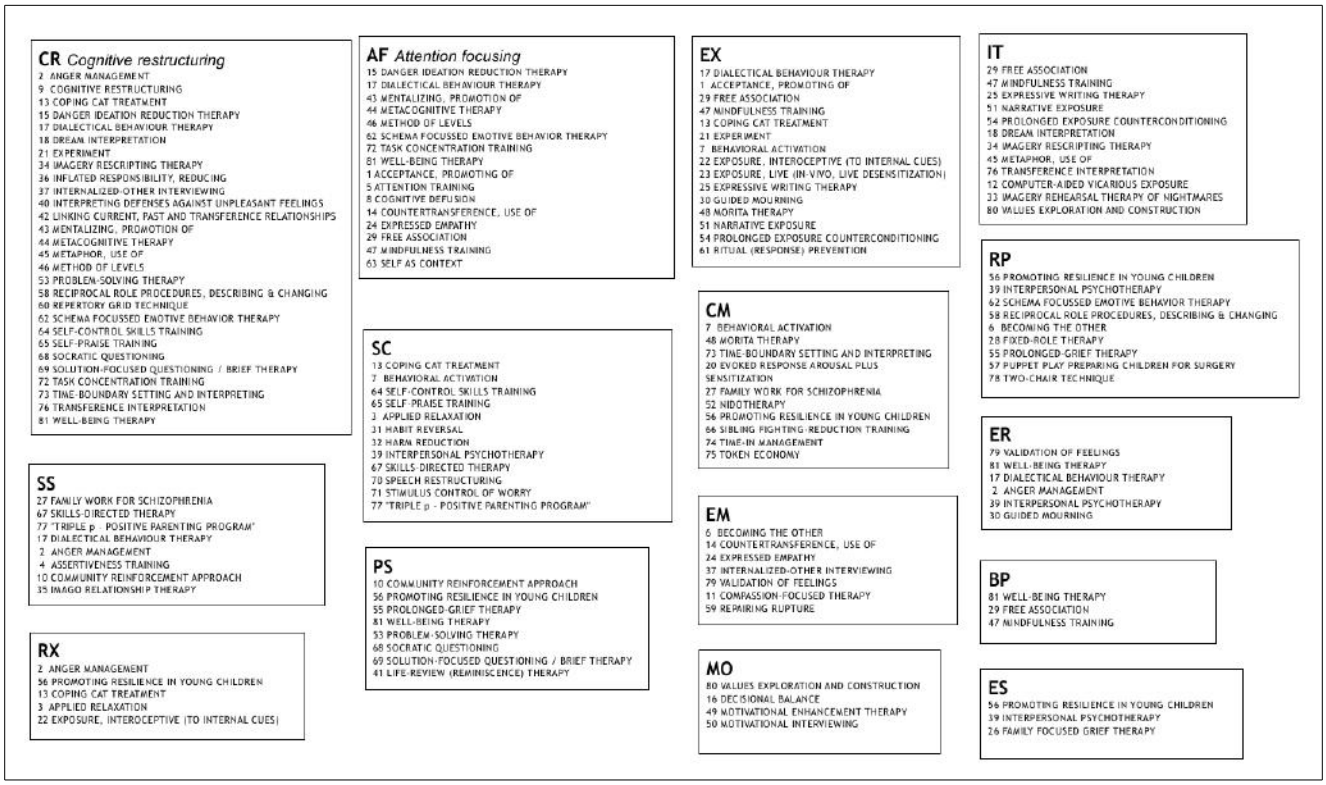


TABLE V – Largest sets of procedures by two components.