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Guillem Feixas ^a; Luis Angel Saúl ^b; Alejandro Ávila-espada ^c

^a University of Barcelona, Barcelona, Spain ^b Universidad Nacional de Educación a Distancia (UNED), Madrid, Spain ^c Universidad Complutense de Madrid, Madrid, Spain

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VIEWING COGNITIVE CONFLICTS AS DILEMMAS: IMPLICATIONS FOR MENTAL HEALTH

GUILLEM FEIXAS

University of Barcelona, Barcelona, Spain

LUIS ANGEL SAÚL

Universidad Nacional de Educación a Distancia (UNED), Madrid, Spain

ALEJANDRO ÁVILA-ESPADA

Universidad Complutense de Madrid, Madrid, Spain

The idea that internal conflicts play a significant role in mental health has been extensively addressed in various psychological traditions, including personal construct theory. In the context of the latter, several measures of conflict have been operationalized using the Repertory Grid Technique (RGT). All of them capture the notion that change, although desirable from the viewpoint of a given set of constructs, becomes undesirable from the perspective of other constructs. The goal of this study is to explore the presence of cognitive conflicts in a clinical sample ($n = 284$) and compare it to a control sample ($n = 322$). It is also meant to clarify which among the different types of conflict studied provides a greater clinical value and to investigate its relationship to symptom severity (SCL-90-R). Of the types of cognitive conflict studied, implicative dilemmas were the only ones to discriminate between clinical and nonclinical samples. These dilemmas were found in 34% of the nonclinical sample and in 53% of the clinical sample. Participants with implicative dilemmas showed higher symptom severity, and those from the clinical sample displayed a higher frequency of dilemmas than those from the nonclinical sample.

The notion of cognitive conflict has a long tradition in psychology. Different theories address the issue of internal conflict, which ensnares people in hard and sometimes painful internal struggles. For instance, psychoanalytical theories employ the notion of conflict in order to account for psychic states in which contrary internal demands (or forces) oppose each other within the subject.

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Address correspondence to Guillem Feixas, Facultat de Psicologia, Universitat de Barcelona, Passeig Vall d'Hebron, 171; 08035 Barcelona, Spain. E-mail: gfeixas@ub.edu

Such conflicts can be overt or latent, and in certain cases the latter can reveal themselves in a different but related manner within the overt conflict and translate into the formation of symptoms, behavioral disorders, personality disruptions, and so on (Laplanche & Pontalis, 1967).

On the other hand, cognitive-social theorists such as Heider (1946) and Festinger (1957), with their respective theories on "balance" and "cognitive dissonance," address the issue of there being little internal consistency. These theories postulate that such dissonances generate a motivational tendency to elude or resolve these contradictory cognitions regarding social reality: "If no balanced state exists, then forces towards this state will arise. . . . If a change is not possible, the state of imbalance will produce tension" (Heider, 1946, p. 108).

Interestingly, the relevance of conflict has also been addressed by constructivist pioneers. Jean Piaget (e.g., 1974), proposed the term "cognitive conflict" for describing the contradictions encountered by a child when attempting to explain certain events. In this case, such conflicts cause a cognitive imbalance and the child is forced to reorganize his or her intellectual processes in order to rid him- or herself of the problem; hence the subsequent intellectual change.

However, Kelly's (1955) personal construct theory (PCT) probably represents the most elaborate framework for an understanding of cognitive conflict and its relevance for personality and clinical psychology. Its emphasis on human freedom and choice allow for a view of human beings facing personal dilemmas. Certainly, if human beings are not seen with a certain degree of freedom and agency, they can hardly have dilemmas. The central notion in Kelly's PCT is that of personal constructs. These, for him, are avenues of meaning with two poles. Because of their bipolar nature, they capture a difference. They also allow for similarity, when a third element (or more) is added to one of the two poles. Because the notion of personal construct is based on difference it allows the possibility of conflict.

A constructivist position is necessary to consider conflicts occurring in the context of the person's own constructions.

Over and over again, it appeared that our clients were making their choices, not in terms of the alternatives we saw open to them, but in terms

of the alternatives they saw open to them. It was their network of constructions that made up the daily mazes that they ran, not the pure realities that appeared to us to surround them. To try to explain a temper tantrum or an acute schizophrenic episode in terms of motives only was to miss the whole point of the client's system of personal dilemmas. (Kelly, 1969, p. 84)

Kelly goes on to propose PCT as an alternative view for Mowrer's (1950) neurotic paradox, for which it is seen as paradoxical that human beings persist in behaviors (symptoms) that make them suffer:

[T]he behavior of a so-called neurotic client does not seem paradoxical to him until he tries to rationalize it in terms his therapist can understand. It is when he tries to use his therapist's construction system that the paradox appears. Within the client's own limited system he may be faced with a dilemma but not with a paradox. (Kelly, 1969, p. 85)

Thus, for Kelly constructions may entail dilemmas (used as synonymous in the first quotation), and by understanding those dilemmas we can better grasp the nature of the person's behaviors and suffering. The fragmentation corollary (Kelly, 1955) provides an important cue for considering internal conflict in the context of the personal construct system. It suggests that humans are not logical, nor are their construct systems consistent or fully integrated. This idea has been seminal in understanding both clinical problems and health from a PCT perspective, as evidenced in the following section.

Cognitive Conflicts in PCT

Since the time of George Kelly, PCT has grown enormously in theory, research, and practice (see, e.g., Fransella, 2003; Walker & Winter, 2007). It has also been surrounded by other compatible constructivist approaches (see, e.g., Feixas & Villegas, 2000; Neimeyer & Mahoney, 1995). However, the notion of cognitive conflict has not become as visible as one would imagine attending to its theoretical, clinical, and self-apparent relevance. Some advances have been made, however.

The issue of conflict and lack of consistency become central for the understanding of clinical problems from a personal

construct view. The program of research on schizophrenic thought disorder led by Bannister (e.g., 1960, 1962; see Adams-Webber [1979] and Winter [1992] for reviews), although more focused on the notion of loose construing, somehow also related to lack of integration. In reviewing this research, Adams-Webber (1981) gave a central role to excessive fragmentation due to the absence of superordinate permeable constructs that “under the pressure of events in a constantly changing environment will tend to be haphazard rather than systematic, and can lead ultimately to the collapse of all conceptual structure” (p. 56).

Along these lines, Space and Cromwell (1978) assigned to conflicts in the cognitive system a specific role in the process of breakdown and cognitive disorganization. Attempts to reduce conflict may give constructs idiosyncratic meanings so that “looseness and instability occur as the final effort for conflict resolution” (p. 188). Space and Cromwell viewed the development of thought disorder as an adaptive response to reduce internal inconsistencies that are deeply embedded in the construct system. Also, Carroll and Carroll (1981) considered that a lack of balance (consistency between affect and cognition) in interconstruct relations may result in fragmented and contradictory social perceptions. Thus, they saw balance as an integral aspect of mental health, as it promotes consistent, differentiated, and stable social perceptions.

In understanding the development of construct systems, Adams-Webber (1970) attributed a role to conflicts that parallels that of Piaget. In his works he suggested that new structures evolve to accommodate events that are ambiguous according to the person's existing structure.

A given event can be said to be ambiguous when it becomes the focus of expectations which are inconsistent with one another in terms of the specific relationships between constructs which articulate the ‘logical’ structure of an individual's system. (Adams-Webber, 1981, p. 55)

Under Kelly's supervision, Hinkle (1965) coined the term *implicative dilemma* to refer to a particular form of implication between two constructs (A-B and X-Y), and related it to the notion of conflict:

A and B imply X, and B implies Y; also A implies X and Y, and B implies X and Y. One subject, for example, when relating desirable-undesirable and realism-idealism, said that realism and idealism both implied desirable and undesirable aspects for him. Conflict theory and double-bind theory relate to these *implicative dilemmas*. (pp. 18–19, emphasis in the original)

As we can see, Hinkle considered the types of implication between two constructs, regardless of where the self and other elements were located. In the same work, however, he proposed the laddering and implication methods on the preferred pole of a construct for a given subject, which is a way of taking into account the person's goals or projects derived from his or her core structure.

Various personal construct theorists have followed this idea by pointing to the role of conflicts and dilemmas in understanding the construing processes involved in some clinical situations. Rowe (1971) conceptualized a case of a chronically depressed patient as embracing a construction whereby his or her choice was either being depressed and humane or being a destructive and unpleasant person. In this view, dilemmas occur when both of the alternatives apparently available within the construct system are seen as undesirable.

Stemming from Hinkle's (1965) notion of implicative dilemma, Tschudi (1977) proposed his ABC model. In it, the A construct describes the symptom or problem in one pole, and its positive contrast pole is regarded as a desired goal for the person. The construct B designates the disadvantages of the symptom on one pole and the advantages of change in A on the other. Thus, B provides further information on why the person wants to move on the A dimension. The "crucial step" (p. 324), however, lies on construct(s) C. This construct reflects the advantages of having the symptom, or the disadvantages of changing in the A construct. By exploring both B and C, it becomes clear that a symptom may have not only negative but positive implications. Certainly, construct C hinders movement, and "ABC is an implicative network of a special type, an implicative dilemma" (p. 324). In this situation, "the system is blocked, the person is stuck or "forced to" run in circles. . . . the symptom solves the problem, but the price is felt to be too high" (Tschudi, 1977, p. 325).

Along this view of conflict lies the work of Ryle (1979). His appreciation for the importance of dilemmas was one of the

seeds for his cognitive analytic approach which was developed later:

Dilemmas can be expressed in the form of “either/or” (false dichotomies that restrict the range of choice), or of “if/then” (false assumptions of association that similarly inhibit change). Two common dilemmas could be expressed as follows: 1) “in relationships I am *either* close to someone and feel smothered, or I am cut off and feel lonely”; ... 2) “I feel that *if* I am masculine *then* I have to be insensitive.” (Italics in the original)

In his studies with clients with social anxiety, Winter (1988, 1989) found that constructs related to social competence (e.g., social, outgoing) carried negative implications (e.g., selfish, inconsiderate, bossy), and the more pronounced these implications are, the more negative the outcome in social skills training groups. This type of pattern occurred in 80% of these group clients, which provides a substantial foundation for an explanatory model of resistance from a personal construct viewpoint: “The treatment which these clients were understandably resisting was therefore one which they appeared to construe as training in selfishness, contempt, and deceit, characteristics which were inconsistent with their core roles” (Winter, 1989, p. 4).

So, for these clients hypothetical change would generate guilt—that is, a dislodgement from one’s core role (Kelly, 1955). Resistance can be explained in this model (Winter, 1989) as a way of retaining personal coherence in order to avoid massive invalidation.

Other types of clinical problems have also been related to conflicts in construing. Drysdale (1989) found a greater tendency to associate having pain with being sensitive in chronic pain patients as compared to those with acute problems. Cromwell, Sewell, and Langelle (1996), in their study on traumatic stress and dissociative processes, suggested:

[W]hen a person is dealing with contradictory construction systems within self, he or she does not make the typical resolution to revise constructs. Instead, the dissonance is resolved by creating separate person icons (i.e., alternative personalities). Such icons would help remove the awareness of intrapsychic conflict. (p. 190)

In sum, for these cases where cognitive conflicts are found, the construction system generates two different personal goals (i.e., becoming social and remaining unselfish and considerate). But according to the structure (network of implications between constructs) of the system, these two goals are incompatible within that system (fragmentation corollary), so that accomplishing one is incompatible with the other. The conflict is “resolved” then by “choosing” according to the more superordinate of these two goals, as a way to protect the core of the system from invalidation and the negative emotions (McCoy, 1977) that would follow it. But this “solution” is obviously unsatisfactory for the sufferance derived from the symptoms and/or the blockage in the developmental process. Thus, the identification of these conflicts may be a crucial step for both personal construct case formulation and therapy.

The Identification of Cognitive Conflicts in Repertory Grids

Although conflicts and dilemmas have been reported in the literature following clinical observation and case studies (e.g., Rowe, 1971), several approaches to systematic identification have been proposed. As a way to organize the description of these proposals, we distinguish among triadic conflicts (those involving three constructs or elements), implicative dilemmas (involving two constructs), and “dilemmatic constructs” (involving only one construct).

1. Triadic Conflicts (TC)

The term *triadic conflict* (TC) is used here to describe a type of conflict that was proposed under the generic name of cognitive conflict. Its origins can be found in Heider’s (1946) cognitive balance or equilibrium theory in triads. Slade and Sheehan (1979; see also Sheehan, 1981) applied this idea to the study of personal constructs among triads to see whether balance or imbalance was displayed between them in repertory grids. They considered that a “conflict” (for our purposes a TC) existed whenever three constructs correlated between each other negatively,¹ or when two correlate positively and the third negatively. Another way to put it is that a triad of constructs was considered unbalanced when the

multiplication of their signs was negative. Thus, these authors proposed that the sign (+/−) of the correlations between constructs was a central aspect of the criteria to identify these unbalanced triads.

This measure was further investigated by Winter (1983), who conveniently detected a problem in Slade and Sheehan's (1979) measure. By considering only the signs of the correlations without taking into account the intensity or strength of the correlation trivial inferences can be made, especially in the case of low correlation coefficients. Certainly, a correlation coefficient of, say, 0.04 is quite indistinguishable of another one of −0.04. At these low levels of correlation intensity, coefficients may be negative or positive accidentally.

To exclude these low correlations, Feixas and Cornejo (1992) established a minimum value of 0.20 for the correlation coefficient.² The measure was kept unmodified in later versions of their computer program (Feixas & Cornejo, 1996, 2002) and tested for validity in Feixas, Bach, and Laso's (2004) study of construct differentiation. In it, their TC measure showed no significant association with other grid variables. Although it distinguished between randomly generated grids and human grids, this measure failed to discriminate between a clinical and a nonclinical sample.

Also using Heider's (1946) notion of balance, Carroll and Carroll (1981) provided a measure of (im)balance in repertory grids based on Morrisette's (1958) network model. For that measure to be computed, in addition to completing the repertory grids they asked subjects to express how much they liked or disliked each element. Also, they had to assign a positive or negative valence for each construct pole. Both judgments were made on an 11-point scale. The additional valuation task included in this method makes it different from those types of TCs mentioned above. They also underline this difference with respect to the work of Slade and Sheehan (1979), saying that in the latter method "no consideration is given to affective relations in personal construct systems" (Carroll & Carroll, 1981, p. 85). This method has scarcely been used recently, probably because of its singularity and the fact of not being available in a computer program.

Another type of triadic conflict was proposed by Bell (2004), this time between two constructs and one element. His method

assesses all possible triads formed by two constructs and each element to identify “conflicts/inconsistencies/contradictions” (p. 54) as defined by these two possible conditions:

1. An element is at the same time similar or close to two constructs that are themselves different or distant.
2. An element is similar or close to one construct’s pole and at the same time is different to or distant from another construct’s pole, where the two construct poles are similar or close (Bell, 2004, p. 54).

Similarities or differences between constructs and elements are operationalized as the rating of the element on the construct, and those among constructs as their Euclidean distances. The presence of conflict is assumed when the longest distance in any three points (two constructs and one element) does not exceed the sum of the other two (see Bell [2004] for more details and a case example).

2. Implicative Dilemmas (ID)

Originated in the context of PCT by Hinkle (1965) and further refined by others (Feixas & Saúl, 2004; Feixas, Saúl & Sánchez Rodríguez, 2000; Rowe, 1971; Ryle, 1979; Tschudi, 1977; Winter, 1982, 1992), an implicative dilemma (ID) can be regarded as a particular cognitive structure in which the pole of a construct representing a symptom or problem is associated to a positive pole of another construct, which might be at a higher level in the system’s hierarchy. Conversely, change to the opposite (desired) pole of the symptom construct carries negative implications in terms of the (presumably) superordinate construct.

The identification of dilemmas in repertory grids is based on finding unexpected correlations between constructs (see Winter, 1992). More specifically, Feixas, Saúl, and Sánchez Rodríguez (2000; see also Feixas & Saúl, 2004) proposed a structured procedure that lies at the basis of the Multi-Center Dilemma Project³ (MDP). They defined an implicative dilemma as a correlation between a discrepant and a congruent construct in a way that the desired change in the former is associated to an undesired change in the latter. This method, implemented in

the GRIDCOR v. 4.0 (Feixas & Cornejo, 2002) grid analysis program, is based on the distinction between these two types of constructs: *discrepant constructs* (e.g., “timid–social”) reflect a lack of satisfaction for the self as located at the pole representing the symptom or problem and viewing the ideal self represented by the opposite pole. On the contrary, *congruent constructs* (e.g., “modest–arrogant”) represent a construct where self and ideal self concur (e.g., both on “modest”). Thus, the subject doesn’t view any need for change in this construct.

The divergence between self and ideal self in the discrepant construct calls for a change (e.g., becoming “social”) that appears to be meaningful for the system because it is based on the subject’s own appreciation. However, the dilemma occurs when change in this construct is linked to an undesired change in a congruent construct (e.g., becoming “arrogant”). By virtue of this association, change is at the same time meaningful for the discrepant construct and meaningless for the congruent one. This contradiction reflects that the system has generated diverging, incompatible goals (e.g., being “social” and “modest”), a phenomenon that could be associated to fragmentation. To put it in other terms, a movement of the self to the opposite pole of the discrepant construct (symptom cessation) would result in validation. But, because this construct is connected by an implication line with a congruent construct, that change would result in invalidation. Therefore, we consider the situation as dilemmatic because remaining in the undesired pole (e.g., being “timid”) is at the same time validating and invalidating. Equally, the perspective of change is viewed as providing both validation and invalidation. In this situation, following the choice corollary, we can infer that the system “chooses” the present (problematic) position for the self as a way to prevent the congruent construct from invalidation. This notion of implicative dilemma (see Feixas & Saúl [2005] for a case illustration), and its operative definition in the grid, reflects the tradition of PCT in explaining the clinical phenomena called “neurotic paradox” and “resistance.”

3. Dilemmatic Constructs (DC)

A *dilemmatic construct* is that which does not offer the subject a clear course of action. The main function of constructs, as

expressed by the fundamental postulate, is to anticipate events. Kelly (1955) also stated that “the person builds his life upon one or another of the alternatives represented in each of the dichotomies. This is to say he places relative value upon the ends of his dichotomies” (p. 65). One way to appreciate this value in grids is by the way the “ideal self” element is scored. Usually, the person values one of the poles of one construct as appropriate for this “ideal self,” thus expressing his or her preferred pole, and also a sort of goal for him- or herself. With certain constructs, however, both construct poles are deemed undesirable by the subject, and a middle-point rating is given to the “ideal self.” Therefore, such constructs are ambivalent, each pole offering both advantages and disadvantages, and neither offering a clear-cut choice. For example, in the construct “talkative–reserved” a woman rates 4 (on a 7-point Likert scale) for her ideal self. This score means that she does not wish to be neither “talkative” nor “reserved.” Both of the options may involve advantages and disadvantages. For her, being “talkative” might be useful in facilitating the ease of social interactions, but it may also carry the implication of being “superficial” or “tedious.” Feixas and Saúl (2004) suggested that these constructs could be considered tentatively as dilemmatic—that is, deserving further conjoint investigation with the subject. Also they can be computed as a grid variable to ascertain the level of conflict in grids:

If many dilemmatic constructs appear in a subject’s grid, it means we can hypothesize that he or she has not developed meaningful constructions which are viable or useful to him or her. This condition may manifest itself in feelings of insecurity, hesitation or lack of action. The person may not know in which direction to go, but rather he or she may know where to avoid going, and may consequently adopt an uncertain or reluctant attitude towards actions involved with those constructs. (p. 73)

As reflected in this section, the notion of cognitive conflict emerges as a matter for research in the area of grid studies with a variety of measures. However, no comparative study has been done to clarify which measures have a higher potential to capture these conflicts. Once this is established, grounds are set for further validity and reliability studies, and for the inclusion of the best measure of conflict in future grid studies.

Objectives of the Study⁴

We want to compare the three types of cognitive conflicts in terms of their capacity to discriminate between clinical and nonclinical subjects. This study is limited to the two measures of conflict provided by the GRIDCOR v. 4.0 program (TC and ID) and to the criteria used in it to derive them. In addition, it includes DC, which is derived from direct grid scores. Subsequently, those measures showing significant differences between the two samples will be studied in terms of their correlation with psychopathological symptoms in order to explore the association of these cognitive conflicts with the level of mental health.

Method

Participants

This study includes two different samples with a total of 606 subjects. The first group consists of 322 participants (53% of the total), from now on “the nonclinical sample” (volunteers evaluated by trained psychology students). The second, with 284 participants (47% of the total), is the clinical sample (persons who attend a clinic in order to receive psychotherapy).

Gender is not equally distributed in both samples. In the nonclinical sample, no significant difference exists in the male/female ratio (44% and 56%, respectively). However, there is a noticeable difference in the clinical sample (27% male and 73% female). Indeed, this uneven proportion in the clinical sample reflects what is usually found in clinical psychotherapy services, wherein the majority of attendants are women (Caro, 2001).⁵

Concerning the age of the participants who make up the two samples, the average for the nonclinical sample is 27.66 years ($SD = 8.92$), and the average for the clinical sample is 30.89 ($SD = 9.38$). As these two samples are not comparable in terms of either sex or age, these variables are controlled in the data analysis process.

With respect to the type of diagnosis in the clinical sample, the most common are anxiety (29%), eating (29%), and mood disorders (19%). These three diagnoses represent over 76% of the

diagnosed clinical sample. Other diagnoses for the participants in the clinical sample are adjustment, somatomorphic, sexual, and sex-identity disorders, along with a group of conditions the DSM-IV (American Psychiatric Association, 1994) labels as “other conditions that may be a focus of clinical attention,” including occupational, marital, parent–child, academic, and identity problems.

Instruments and Measures

Repertory Grid Technique (RGT): Probably the most used and best = known assessment tool in PCT (see Feixas & Cornejo, 2002; Fransella, Bell, & Bannister, 2003; Jankowicz, 2003), the RGT is more of a method than an instrument. As such, it can be adapted to assess a variety of constructions with respect to a wide array of situations or elements. In our case, the type of grid used in the MDP has a focus on interpersonal issues. Then, the grids should have a minimum of 10 elements (to ensure that interconstruct correlations derived from it are based on at least 10 scores) and go up to about 20, thus varying across subjects to adapt to their interpersonal situations. In all cases the grid includes the “self now” and the “ideal self,” and usually also “father,” “mother,” brothers and sisters (if any, but not more than three), partner (and previous partners), male and female friends, and a “persona non grata.”

Constructs are elicited by comparing pairs of elements, or dyads, using both similarity and difference methods for each dyad. Thus, from each dyad several constructs can be obtained. Not all possible dyads are presented to the subject for elicitation: Usually, the “father–mother” dyad is the first one, followed by the “self–father” and “self–mother” dyads. Then dyads among siblings, partners, friends, and the persona non grata are formed, so that all elements are included in at least one dyad. Except for those obtained in the first dyad, elicited constructs are checked for repetition with the ones obtained previously. The elicitation process finishes when too much repetition occurs, when no further constructs are created, or “whenever interviewer and subject consensually felt no more new constructs would appear (what has been called the ‘saturation point’)” (Feixas, Bach, & Laso, 2004, p. 300). Therefore, each subject may elicit a different number of constructs (an average of 16,53 for the nonclinical

sample and 15,17 for the clinical one). Elements are rated on these constructs on a 7-point Likert-type scale for which 1 refers to the left or emerging pole, 7 the right pole, and 4 the middle point.

Of all the indices and measures that can be obtained through the RGT, only those relating to cognitive conflicts have been used in this study.

Triadic conflicts are determined by the imbalance in a triad of constructs. The proponents of this measure (Slade & Sheehan, 1979) identify a TC whenever three constructs correlate negatively, or when two correlate positively and the third negatively. As a criterion of association between two constructs, however, Feixas and Cornejo (1996; see also Feixas, Bach & Laso, 2004) established a cut-off point with a minimum magnitude of 0.20 in the Pearson's product momentum correlations among them as a more astringent criterion.⁶ Two measures can then be derived from this type of conflict. The first, presence/absence of TC, is categorical with two values: presence of at least one triadic conflict and complete absence of triadic conflicts.

We call the second measure the *index of triadic conflicts (ITC)*. This index was first used by Feixas and Cornejo (1996) and indicates the scale of triadic conflict that exists in a grid as regarding the number of possible triads based on the number of constructs. It is calculated by dividing the number of conflicts found in the grid by the total number of possible triads of conflict. It is a quantitative variable that ranges from 0 to 1, although its values are usually very low, as the number of possible triads of constructs (the possible combinations of constructs taken three at a time) is very large. For that reason it is multiplied by 100.

$$ITC = \frac{\text{no. of triadic conflicts}}{\text{no. of posible triads}} \times 100$$

In the context of the RGT, Feixas, Saúl, and Sánchez Rodríguez (2000) defined *implicative dilemmas* as an association between a discrepant construct and a congruent construct, whereby that which the subject wishes to change in the discrepant construct (changing the "self now" element toward the opposite pole, where the "ideal self" is located) is associated with the undesired

pole of the congruent construct. The authors provided as a criterion for such a relationship between these constructs a minimum correlation coefficient of 0.35.⁷

A construct is classified as discrepant when the ratings to the element “self now” and the element “ideal self” differ, with a difference equal to or greater than 4 points. In the 7-point scale used, this difference warrants that these two elements were scored at opposite poles for that construct. Conversely, a congruent construct is identified whenever the scores given to the element “self now” and the element “ideal self” coincide, or when there is no more than 1 point of difference. Cases in which either element is at the middle point (scored as 4) are excluded from this classification.

The presence (or absence) of implicative dilemmas in the subject’s grid constitutes the first measure, dichotomous in nature, involving this type of cognitive conflict. The value of presence is defined by the identification of at least one implicative dilemma. The second measure, quantitative in nature, is the *percentage of implicative dilemmas* (PID), which reflects the number of implicative dilemmas in a grid, taking into account its size. Obviously, the number of constructs elicited during administration influences the possible number of implicative dilemmas found, so a correction is applied for the PID. This measure is calculated by dividing the number of dilemmas that appear in a given grid by the total number of possible combinations of constructs of that grid taken two at a time. In order to find the percentage, the proportion of implicative dilemmas obtained from this operation is multiplied by 100.

$$PID = \frac{ID}{(n!/2[(n-2)!])} \times 100$$

ID: number of implicative dilemmas identified in a grid

n: number of constructs in a grid

As stated earlier, *dilemmatic constructs* are those in which the subject places the element “ideal self” at a middle point between both poles of a construct—that is, those who score it with a 4 (on the 7-point scale that we use for the RGT). The presence of a DC is a dichotomous variable and reflects the presence of at least one DC or the complete absence of those constructs in the subject’s

grid. As with the previous types of conflict, its quantitative aspect is also taken into account by the *proportion of dilemmatic constructs* (PDC). This variable informs us as to the proportion of dilemmatic constructs displayed in relation to all the constructs contained in the grid that the subject has completed. The PDC index is obtained by dividing the number of dilemmatic constructs among the total number of constructs in the grid.

$$\text{PDC} = \frac{\text{no. of DCs}}{\text{no. of constructs}}$$

Symptom Checklist-90-Revised (SCL-90-R) (Derogatis, 1977, 1983): This is a clinical inventory aimed at evaluating the number and level of psychopathological symptoms. It encompasses 90 items that reflect nine primary symptom dimensions believed to underlie suffering in the domain of mental health—*Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism*—and three General Indices of disorders—*Global Severity Index* (GSI), the *Positive Symptom Distress Index* (PSDI), and the *Positive Symptom Total* (PST). Of these three general indices, the GSI was selected for this study, as it is the most sensitive indicator of the level of discomfort suffered by the subject, combining information on the number of symptoms and the intensity of discomfort.

The GSI is a generalized, indiscriminate measure of the intensity of overall psychic and psychosomatic suffering. This general index of the SCL-90-R is the coefficient of the division of the sum of all the values assigned to the items (which range from 0 = nothing at all to 4 = very much or extreme) by the total number of items in the questionnaire, which is 90. Thus, the value of the global index ranges from 0 to 4.

$$\text{GSI} = \frac{\sum \text{of all the items}}{90}$$

Procedure

The data from the clinical sample were gathered from various psychotherapy services, both public and private, cooperating in

the context of the MDP: Universitat de Barcelona, Universidad de Salamanca, Barnet, Enfield and Haringey Mental Health Trust (UK), Universidad Autónoma de Madrid, Hospital Universitario la Paz, Universidad Nacional de Educación a Distancia, and private psychotherapy clinics. The RGT and the SCL-90-R were completed as part of the pretherapy assessment. The only criterion for exclusion was a diagnosis of schizophrenia or mental retardation. The nonclinical sample was recruited by psychology students (both undergraduate and graduate) from their natural environments (friends, class mates, parents, relatives, etc.) after a minimum of 8 hours training on the RGT.

Repertory grid data was analyzed using GRIDCOR program version 4.0⁸ in order to obtain indicators of cognitive conflicts in the participants. These indices, along with GSI data and sociodemographic variables, were progressively entered into the database of the MDP and subsequently analyzed using the SPSS 11.5 program.

The statistical tests used in this study mainly include those that determine the dependency or differences between groups, such as chi-squared or the student's *t*-test. Logistic regression is used to estimate the influence of age and sex on the previously found effects. For rejection of null hypotheses, the confidence level is set at 95%.

Results

In this section, incidence levels are shown for each conflict type by samples, with the results from the comparative statistical analyses performed. Next, and only for participants with each type of conflict, comparative results for the quantitative conflict indices (ITC, PID, PDC) in the two samples are shown. Such indices are even more reliable as frequency indicators than the raw frequency of cognitive conflict, as they do not depend on the size of the grid applied.

After having established which type of conflict displays the strongest differences between clinical and nonclinical samples, the relationship between that type of cognitive conflict and the level of symptom severity (GSI) will be explored.

Triadic Conflicts

TC appeared in a 40.70% of the grids of subjects of the nonclinical sample, and in a 39.10% in the clinical sample. The comparative statistical analysis produced a statistic $\chi^2_{(1)} = 0.19$ ($p = 0.665$), whereby it cannot be affirmed that the presence of TCs is related to the type of sample.

By taking into account only those participants presenting with TCs, similar results for the ITC measure in both samples were obtained: 0.61 ($SD = 0.69$, $n = 131$) for the nonclinical sample, and 0.64 ($SD = 0.61$, $n = 111$) for the clinical sample. The student's t -test, with a contrast statistic $t_{(240)} = -0.37$ ($p = 0.709$), revealed that such differences are not statistically significant.

Implicative Dilemmas

IDs were found in a third of the nonclinical sample (33.90%), and in over half of the clinical sample (52.10%). In the comparative statistical analysis of the two samples, a $\chi^2_{(1)} = 20.61$ ($p = 0.000$) was obtained, indicating a significantly greater presence of implicative dilemmas in the clinical sample than in the nonclinical sample.

Among the participants presenting with dilemmas, and from all the possible combinations that can be established between the constructs that make up their grids, 2.11% ($SD = 2.01$, $n = 109$) of these combinations (PID) in the nonclinical sample coincide with what has been defined as an ID. In the clinical sample, the PID amounts to 4.01% ($SD = 3.74$, $n = 148$). By applying a student's t -test for independent samples, a $t_{(235.669)} = -5.23$ ($p = 0.000$) was obtained, indicating that the differences between the clinical and the nonclinical sample are statistically significant in terms of the PID. The clinical sample showed a greater number of IDs than the nonclinical sample.

Dilemmatic Constructs

DCs were present in 66.10% of the nonclinical sample, and in 73.20% of the clinical sample. The comparative statistical analysis produced the statistic $\chi^2_{(1)} = 3.58$ ($p = 0.059$), indicating that

the incidence of dilemmatic constructs is unrelated to the type of sample.

Among participants presenting with DC, the mean PDC for the nonclinical sample was 0.19 ($SD = 0.12$, $n = 213$), whereas in the clinical sample it was 0.17 ($SD = 0.11$, $n = 208$). The student's t -test produced a nonsignificant value of $t_{(419)} = 1.57$ ($p = 0.117$).

Up to this point we have studied which of the three types of conflict (TC, ID, and DC) differentiated between the clinical and the nonclinical samples, with the result that the only type of conflict that clearly did so was ID. In order to explore the relationship between ID and clinical problems in greater depth, and to assess the possible influence the variables of gender and age may have on this relationship, we performed a logistic regression analysis.

The sample (clinical or nonclinical) was taken as the dependent variable. Predictive variables were age, gender, the presence of IDs, and the interaction between these three variables. The variable selection method used in this logistic regression was the forward Wald method, and the analysis was completed in four steps. The percentage of cases correctly classified was 64%, affording the model an adequate goodness of fit to the data based on the Hosmer and Lemeshow test ($\chi^2_{(6)} = 10.15$, $p = 0.119$). On the other hand, the proportion of variance in the dependent variable explained by the model was 14% (Nagelkerke's $R^2 = 0.14$).

In the model produced by this regression analysis, the first variable to enter was the presence (or absence) of IDs, and the following variables were added in consecutive steps (in this order): gender, the interaction of age and gender, and the interaction between the presence of dilemmas and age, which was on the verge of significance (the Wald statistic was 3.81, with 1 df , $p = 0.051$). For this reason, it was decided to consider only the first three steps of the model, having observed that the final step added only 0.8% of predictive power, and the adjustment to the model in Step 3 is greater than that of Step 4, taking into account the Hosmer and Lemeshow test (a value $\chi^2_{(4)} = 3.31$ ($p = 0.508$) in Step 3 as opposed to a value $\chi^2_{(6)} = 10.15$ ($p = 0.119$) in Step 4. Thus, by taking these first three steps, power and parsimony were increased. The explanatory model correctly classifies 64% of the cases (76% of the cases from the nonclinical sample and 50% of the clinical sample). This model suggests that the probability of belonging to the clinical sample is increased in participants with

IDs and in women. Besides, but only among women, this probability decreases with age.

Looking at the correlations among the quantitative measures (ITC, PID, PDC) of each type of conflict might provide some information about their relationships. To avoid skewed distributions (with more than half of the subjects with a 0 value), the sample used to compute these correlations was composed only by the subjects who had at least one of each of the three types of dilemmas ($n = 88$ from the total sample of the study). The only significant correlation was between ITC and PID ($r = 0.43$, $p = 0.01$), whereas the other two were close to zero.

Relationship Between IDs and Symptom Severity (GSI)

Symptom measures (GSI of the SCL-90-R) were available for only 204 of the subjects of our study. Of these, 156 pertain to the non-clinical sample and 48 pertain to the clinical sample. The former present an average in the GSI of 0.44 ($SD = 0.22$), and the latter of 1.10 ($SD = 0.55$). These differences are statistically significant ($t_{(51.571)} = 8.24$; $p = 0.00$). As expected, the clinical sample presented a higher level of symptoms.

For participants with IDs, an average score in the GSI of 0.69 ($SD = 0.45$; $n = 84$) was obtained, whereas for the remainder it was of 0.52 ($SD = 0.40$; $n = 120$), and the difference was significant ($t_{(202)} = -2.86$; $p = 0.005$). Thus, the participants with IDs presented higher levels of symptom severity than participants without such dilemmas. Finally, considering only those participants presenting with IDs, a significant correlation was found between the PID and the GSI measures ($r = 0.34$; $p = 0.01$; $n = 84$). Correlations with GSI were likewise computed for ITC ($r = -0.08$) and PDC (-0.09) but were nearly zero.

Discussion

The data obtained from this study do not appear to confer any clear role for TCs or DCs in relation to mental health. However, they do reveal differences between the clinical and nonclinical samples in regard to IDs. The clinical sample displays a greater

presence of IDs as compared to the nonclinical sample. Nevertheless, it can also be assumed that IDs are common among the general population. Actually, up to a third of the nonclinical sample presents IDs, but they are found in just over half of the participants in the clinical sample. These results may be considered as consistent with Kelly's (1955) reasoning:

[T]he failure of the construct system to embrace urgent events may accompany one's use of incompatible subsystems of constructs. Most of us can tolerate some amount of incompatibility. Our Fragmentation Corollary assumes that one may successively employ a variety of construction subsystems which are inferentially incompatible with each other. The Modulation Corollary ... assumes that the variation in a person's construction system is limited by the permeability of the constructs within whose range of convenience the variants lie. Taken together, these two corollaries assume that one can tolerate some incompatibility but not too much. (p. 496)

The role of IDs is also reinforced by the discovery that, not only is it more likely for participants with IDs to belong to the clinical sample, they also have more of them, as can be seen from the significant difference in the PID. However, the acute typical deviations found in both samples mean that this statement should be taken cautiously. Indeed, even the fact of presenting with many IDs may not be a decisive factor for differentiating between clinical and nonclinical participants. Obviously, psychological problems are not only due to having dilemmas. From our understanding, the presence of IDs is not an indicator of pathology, although it appears to play a relevant role in mental health.

The fact that the logistic regression analysis predicted only 50% of the subjects of the clinical sample suggests that while the issue of IDs, along with gender and age, may have a role to play in mental health, it does not provide an exhaustive explanation as to what distinguishes one sample from another. To do so, obviously, additional predictive variables need to be considered. This is also corroborated by the proportion of variance of the dependent variable explained by the model, which was only 14%. However, such a level of variation could be deemed acceptable if we take into account that the analysis included only three variables and their corresponding interactions.

At this point, it is important to consider that the reason for applying this logistic regression analysis was not simply to establish a model oriented to identify participants who could or could not be regarded as patients, but rather to establish whether the variables included—in this case gender, age, and their interactions—influence the relationship found earlier between the presence of IDs and the type of sample. The main outcome of this regression analysis is that the influence of IDs on mental health is not merely due to gender and age.

As expected, and consistent with previous findings, the clinical sample obtained significantly higher scores in the GSI.⁹ Participants presenting with IDs displayed higher levels of symptom severity, measured with the GSI of the SCL-90-R. Also, the higher the proportion of IDs found in their grids, the greater their symptom severity. These data further support the relationship between IDs and mental health.

Interestingly, these results confirm our clinical observations in many respects. To focus on just one of those, we had used TC for more than a decade but, despite its theoretical interest and appeal, we found substantial difficulties regarding the use of this notion. To begin with, it was difficult for therapists in training to understand a given conflict found in a patient's grid among three constructs by considering the six poles involved in the conflict. Worse, only a few times did we succeed at explaining such a conflict to a patient in a way that was understandable to her or him or made it relevant to her or his problems. Therefore, its use for therapy was limited. In contrast, after formulating the notion of ID in operative grid terms, it has been helping trainees for the last 7 years to understand the notion of fragmentation, conflict, and resistance from a constructivist perspective. Further, it has proven useful in clinical practice for case formulation and, more important, for designing therapy (see Feixas & Saúl, 2005; Fernandes, 2007). Usually, clients understand the IDs formulated from the grid analysis, find them useful for understanding their problems, and are amenable to working on the direction of resolving them.

The clinical observations made with respect to DCs, however, have not been confirmed by this study. It might well be that some middle point ratings on the “ideal self” element of the grid do

not reflect cognitive conflict as it was predicted from our understanding of constructs and their role on self-regulation in the context of PCT. Still at this theoretical level, the issue of middle-point ratings on the “ideal self” (and maybe in the “self now”) is open to discussion, criticism, and further elaboration. More systematic observation is needed to formulate a hypothesis about the role of DCs in mental health, maybe related to some specific clinical conditions. Consequently, further studies are needed to test these hypotheses.

A substantial caution must be made with respect to the results of this study. The three conflicts under test are defined according to operational criteria (i.e., the threshold of 0.20 for TC and that of 0.35 for ID) defined in previous published works and included in the GRIDCOR program (Feixas & Cornejo, 2002). The results obtained might vary substantially with different criteria. Moreover, in neither the GRIDCOR manual nor the published studies using these measures (e.g., Feixas, Cipriano, & Varlotta, 2007; Feixas & Saúl, 2004) can a solid justification be found for the precise thresholds used. Although they might seem appreciatively adequate, more research should be done on their justification or, alternatively, on providing other, more accurate thresholds. Also, as with many other grid studies, the conflict definitions and results of our study are tied to the particular grid design applied. Variations in terms of the type of constructs and elements, the rating scale, and method of elicitation require further refinement and exploration.

Obviously, the present study must be considered only as a limited opening step in what should become a much larger research program in the context of the MDP. Several studies should follow this one with a wide variety of specific clinical conditions. This would allow us to determine whether IDs have a general effect on all types of problems or only on some conditions. For those conditions showing an effect for IDs, a further exploration of the dilemmas found could be pursued using the classification system for personal constructs (CSPC; Feixas, Geldschläger, & Neimeyer, 2002). This might allow us to identify prototypic types of dilemmas for each disorder (as Winter [1988] did with people with social anxiety). Also, it could be tested whether, following our clinical observations, congruent constructs are coded as moral more frequently than other constructs. Finally, following an initial step

already taken (Feixas & Saúl, 2005), therapy manuals or protocols could be designed to work with dilemmas in specific clinical populations.

Conclusions

Of the three types of cognitive conflict examined in this study, ID is the only one that discriminates between our clinical and non-clinical samples. Effectively, there seems to be a relationship between the presence of IDs and the fact of pertaining to the clinical sample. This relationship is not due to gender and age variations in the two samples. However, the mere presence of IDs is not an indicator of psychopathology. We found this type of cognitive conflicts in over half of the clinical sample and around a third of the nonclinical sample. Moreover, among the participants presenting with IDs, those from the clinical sample show a greater number of IDs in their grids.

In terms of symptom severity, participants presenting with IDs display the highest levels of severity. Furthermore, the number of IDs found in the grids of these subjects also appears to be related to the level of symptom severity.

This study has found that the type of cognitive conflict defined by Feixas, Saul, and Sánchez Rodríguez (2000) as ID may be relevant in the understanding of mental health problems. This result warrants conducting further studies with specific, well-defined, different clinical samples to investigate its differential effect. It also points to the interest of including therapeutic work with IDs in future treatment protocols developed for those clinical populations in whom a high prevalence of such conflicts is found.

Despite the long tradition of clinical thinking that links internal conflicts to mental health, this study appears to be among the few that considers various types of cognitive conflicts (while admittedly there might be other forms) with a defined procedure to measure them, and shows the relevance of one of them (IDs) with respect to mental health problems. This might allow for a series of further developments, both for clinical case conceptualization and for treatment, which may apply to a wide variety of clinical conditions.

Notes

1. An example of a TC of this kind, provided by Feixas and Cornejo (2002), consists of the following three negatively correlated constructs: "up in the air vs. is aware of problems," "balanced vs. has outbursts," and "pessimistic vs. optimistic." This conflict can be expressed as follows: People who are "up in the air" are neither "balanced" nor "pessimistic." However, balanced people are not pessimistic, either. Taking the opposite poles into account, this could be interpreted as: To be balanced and aware of problems involves not being optimistic, although being optimistic is simultaneously related to being balanced!
2. Another solution to this problem was provided by Bassler, Krauthauser, and Hoffmann (1992), who developed the Correlation Test program in cooperation with a software company: "This program evaluates signs as well as the magnitudes of correlation coefficients, in that the two greatest correlations are brought into a proportional relation by multiplying them. The result is equivalent to the proportion of variance jointly accounted for by these two variables. The minimum value for the third correlation is then determined in that it has to account for the same amount of variance in this now three-dimensional, jointly occupied space" (p. 99). More details on this algorithm and the program, as well as an illustrative case study, are also provided in their article.

Later, Krauthauser, Bassler, and Potratz (1994) provided some validity data with respect to other grid measures. The number of balanced triads detected by their program was affected by the number of constructs and elements, and "extreme percentages of unbalanced triads always coincide with a quite monolithic cognitive system" (p. 293). Also, they found very low test-retest reliability for their measure. One of their theoretical conclusions is that "*conflict* is not necessarily the proper term for the processes described by this method of triadic comparisons of correlation coefficients. There are contradictions in the construct system, but they do not have to be considered conflicts" (p. 292; italics in the original).

3. Information and overview about this collaborative research project can be accessed at www.usal.es/tcp.
4. This study is part of the doctoral dissertation of Luis Ángel Saúl at the Universidad de Salamanca (July, 2005), where it won the award as best dissertation of the year.
5. Most of the participants who make up the clinical sample come from university-based psychological care services. For instance, the activity report (2000–2001) for services at Salamanca University (UAPSMU) shows that between 1996 and 2000, women represented 80% of service users, with just 20% being men.
6. No justification is provided by authors with respect to the 0.20 criteria besides this being a more restrictive criterion than taking just the sign of the correlation. Nevertheless, we used the same criterion because this was the program used for grid analysis, and because there is published data in the literature (Feixas, Bach, & Laso, 2004) with this criterion.

7. The only rationale provided by the authors for the use of this criterion was that it excludes low correlations as indicators for an ID. Again, we used this criterion because the program used was GRIDCOR, and because there are other studies using the same criterion (e.g., Feixas & Saúl, 2004; Feixas, Cipriano, & Varlotta, 2007).
8. This program, available in Spanish with the name RECORD, was developed by Feixas and Cornejo (2002) in order to conduct a statistical analysis of the data matrix obtained by applying the RGT, and to provide the implicit structure of the data both quickly and clearly. A full RGT manual and a limited-use version of this program can be found at www.terapiacognitiva.net/record/gridcor-3.htm.
9. Checking the GSI scores obtained in both groups with respect to the Spanish norms, we found that, whereas the nonclinical sample bears quite comparable levels to those of the norms, the clinical group scores below the psychiatric samples. This suggests the participants in the clinical group of this study were not showing high levels of symptoms. Therefore, further studies with more severe or acute samples are required.

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