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LINKING TRAITS AND PERSONAL CONSTRUCTS: AN EXPLORATORY STUDY THROUGHOUT LEVELS OF PERSONALITY

This article presents a preliminary study of links between personal constructs and traits. The conceptual framework for this study is the domains of personality model postulated by McAdams (1995) and McAdams & Pals (2006), and we tried to find concomitances between variables of two different levels, the dispositional level and the identity level. A repertory grid and the NEO-FFI inventory were distributed to a total of 273 individuals, 146 representing the general population, and 137 having pathologies. By applying an exploratory design ex post facto in which Pearson's correlations and ANOVAs were used, we found associations between the content of the constructs used and the traits. The neuroticism trait was most closely related to the content of the constructs. There were also clear associations between construct structure and scores on traits. Neurotic subjects were more rigid, whereas agreeable and conscientious subjects were more complex. However, the type of sample (normal or pathological) is a basic modulator of the relationships between constructs and traits.

Key Words: Personality, Levels of Personality, Traits, Personal Constructs, Big Five Model, Repertory Grid Technique, McAdams' Model, Implicative Dilemmas.

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INTRODUCTION

Personality in psychology has been and still is being studied on the basis of multiple approaches. Perhaps one of the most fruitful approaches, from the point of view of the number of studies conducted, has been the one based on traits (Eysenck, 1990; Costa McCrae, 1992; Mathews & Deary, 1998). Even in spite of the criticisms made against it, such as the exclusive focus on structural aspects or its non-explanatory nature (Pervin, 1994a, 1994b), it remains the preferred way to deal with personality, since it places emphasis on the existence of basic patterns of behaviour.

The process-oriented approach based on socio-cognitive principles (Bandura, 1986; Cervone & Shoda, 1997; Cervone, Shadel & Jencius, 2001) has been another method widely used in research on personality. This second approach is intended to explain the regulatory processes that adjust behaviour to the environment. A third approach is that based on the study of the self (Epstein, 1990; Markus & Nurius, 1986) or on alternative constructs (Kelly, 1955). Of these three approaches, the latter is the least developed, probably because it places less emphasis on the ordinary aspects of process and structure (nomothetic) and focuses more on an idiographic study of the subject.

However, for the last decades new approaches have been developed. These approaches are aimed precisely at studying the links between different approaches, which do not represent different alternatives to the "essence" of personality, but study different levels, dimensions or domains of personality (Mischel, 1993). Perhaps, the most promising of these multilevel approaches is the one presented by McAdams (1995) and McAdams & Pals (2006). According to these authors, personality is a complex system in which three different explanatory domain levels are interconnected. These domain levels are parallel to each other, so that the laws and properties that regulate them are also different.

The first of them is the trait or disposition domain level. It is the level of comparative, stable, relatively decontextualized and generalized dimensions. However, at this level, the capacity to predict the final behaviour of a person in a particular situation is low. On the other hand, the specific expression of

traits is greatly mediated by culture. Therefore, this domain only provides a very general picture of the individual; it refers to what McAdams (1995) calls the *psychology of the stranger*.

The second domain level is that of characteristic adaptations. The variables that make it up are of motivational, cognitive or evaluative type, and are contextualized through situations, settings and roles. Contextualization is, precisely, the fundamental difference when compared with the first domain variables. Culture is the factor that gives higher or lower prevalence to the variables that make it up within a given context. However, given that the analysis units included in this domain are very diverse (personal projects, motivations, goals, plans, schemes, etc.), it is not entirely clear which units belong or not to this domain. Personal constructs, one of the variables that we use in our study, are one of these problematic inclusion units.

The third domain level consists of the identity narratives that provide unity and purpose to life, i.e. they make up the person as a whole. This integration is generated by rebuilding the past and forming an image of the future. Given that integration is the objective of this domain, the variables that make it up undergo a continuous change, since they have to reorganize continuously the data and information they receive.

The three domain levels interact with each other continuously and, in turn, they are influenced by the basic biology of the species and by the cultural settings in which people live, constituting a system that generates conducts, emotions and thoughts within the specific frameworks of life circumstances (McAdams & Pals, 2006).

McAdams' idea is suggestive and provides a very ambitious framework for research. But this idea of three big domains of personality is not a novelty at all. It reflects the old conception of Kluckhohn, Murray and Schneider (1965) about a personality level that would be universal (all people are similar) another level which would be contextual (some individuals are similar among themselves) and, finally, an actual identity level (there are no two individuals who are similar).

So far, several papers have been published which studied links between variables fitting in different domains, whether between traits and life stories (McAdams, Anyidoho, Brown, Huang, Kaplan & Machado, 2004), or between life stories and personal projects (McGregor, McAdams & Little, 2006). Our work follows that direction, too, but unlike the studies conducted by McAdams' group, who always uses narratives as a unit of analysis, we will focus on the study of personal constructs (Kelly, 1955).

From McAdams' perspective, personal constructs are one of the variables located in the domain of characteristic adaptations. Researchers working within the framework of the personal constructs theory (Neimeyer, 1993; Feixas & Saul, 2004; Walker & Winter, 2007) are more of the opinion that constructs should be located within an identity framework since they consider that constructs are one of the basic tools for the construction of identity. Besides, the repertory grids, - the basic personal construct research instrument—usually include elaborations of the self and the ideal self, therefore, its focus on the study of identity is, in this sense, unquestionable. It is true, however, that constructs do not have a narrative structure and McAdams covers the identity field expressly with a life history narrative approach. In any case, it is evident that trying to find links between traits and personal constructs is a task in which two clearly differentiated personality domains are connected.

With respect to the domain of personal dispositions, the theoretical framework better developed at present is the big five model. These big five factors represent basic trends of human behaviour (Costa & McCrae, 1992a; McCrae & Costa, 1996, 1999). The fundamental purpose of the trait research is to identify such dimensions that can be regarded as the basic and universal elements of the personality structure (Digman, 1990; Goldberg, 1993; McCrae & John, 1992). Within the five-factor approach, the way to find such dimensions is based on the analysis of language. It is supposed that language represents (in a denotative way) all those aspects of behaviour which are relevant to understand the human being, which is known as the *fundamental lexical hypothesis*. The factorial statistic techniques allow us to reduce the enormous amount of terms that refer to human behaviour tendencies (above all nouns and adjectives, but also some other types of words) to a group of data sufficient for description of the basic dimensions of personality. From the point of view of evaluation, the trait model opted for a psychometric approach, in which self-report questionnaires are mainly used. The more extended version of the big five model is that of Costa and McCrae (1992a; McCrae & Costa, 1996, 1999). These authors have implemented their model as the NEO-PI-R questionnaire (1992b, 2001). This inventory comprises five first-order factors: Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness. Each of these factors is made up of six facets. Facets are included only in one factor, always in that which they influence most.

The personal construct model was originally developed by Kelly (1955) and it is based on the notion that human beings develop, as from their own

experience, a number of bipolar individual dimensions which are useful for them both to describe reality and to regulate action. Those dimensions are called constructs. That is, it is the individual himself/herself who assigns meaning to the experience by constructing replications of it. These constructs are strongly variable as to the contents, application and range of convenience, and are regulated by a series of laws or corollaries that explain their functioning. The theory of personal constructs has been extended especially across the psychotherapy sphere, within which it is one of the better-known constructivist models (Neimeyer, 1993; Fransella, 2005).

There is some evidence for the links between personal constructs and traits. Chambers (1983) compared measures of logical incoherence constructs and of reductionist constructs, with the 16PF scores (Cattell & Eber, 1972). Logical incoherence is connected with several traits that suggested the presence of neuroticism. By using the Rep Test (Kelly, 1955), a technique prior to the repertory grid, Heidal-Schilz (1998) found that constructs reflect significant individual differences and that, when comparing the Rep Test scores with the NEO-PI-R scores, there is a close correlation in the case of the Conscientiousness scale.

By using directly the repertory grid technique, some studies have found that there exist correlations between the contents of the constructs and the Big Five. Although they cannot account for the whole variance generated by the grids, they definitely explain approximately 56% of the total variance of constructs (Grice, 2004; Grice, Jackson, & McDaniel, 2006).

McAdams (2005) points out that it is necessary to verify the interdependence relations between personality domains, in our case, between personal constructs and traits. If we take into account the opportunities offered by the Repertory Grid technique, once the data obtained with the computer program *gridcor* (Feixas & Cornejo, 2002) have been analyzed, it seems convenient to conduct a basically exploratory study of relations between constructs and the big five. Given that empirical evidence is still very poor and the indicators used in the repertory grid analysis do not converge across the few studies available, it is very difficult to establish a study in which operating working hypothesis are formulated.

METHOD

Subjects

Two-hundred and seventy-three (273) people participated in the study: 50 men and 223 women. They were initially distributed in three samples: 146 from the general population (mean age, M=23,04; SD=8,656), 43 patients with fibromyalgia (M=51,49; SD=8,438), and 84 abused women (M=42,58; SD=11,089).

For the total sample (N=273), mean age was: M=33,40 (SD=14,796).

Fifty percent (50%) of the participants (in the total sample) were single, 23% married and 27% separated, divorced or widowed. Thirty-nine percent (39%) of them were university students, 33% secondary school graduates, 22% of these people had completed primary school, and the remaining 6% could not read/write or did so with difficulty (in the total sample).

Aim

This was an exploratory study. By now, there has been little information about links between personality levels, in general; and between personal constructs and traits, in particular. Our aims were: a) looking for links between them; b) studying if those possible links are modulated by the type of sample, attending to two conditions: healthy and non-healthy samples. Comparisons between these samples could offer us a preliminary framework of the links between traits and personal constructs for healthy and non-healthy populations.

DESIGN

Material

We used in this work the shortened NEO Inventory (NEO-FFI) in its Spanish version (Costa & McCrae, 2001) and the repertory grid technique (Kelly, 1955) analyzed with the gridcor statistic program (Feixas & Cornejo, 2002).

NEO-FFI Inventory

The NEO-FFI Personality Inventory is the brief version of the NEO-PI-R, one of the instruments most used in the evaluation of the Big Five, basic elements of personal structure obtained from the lexical hypothesis in the study of personality. We have used the Spanish adaptation done by TEA publishers in 2,000 people, which has yielded adequate indicators of reliability and validity (Costa and McCrae, 2001): alpha coefficients between 0.82

and 0.90; and structure identical to the original inventory. It consists of 60 items which are scored in accordance with a Likert-type 5-score scale. Briefly, the five scores offered by the inventory are Neuroticism (level of emotional instability), Extraversion (level of activity, energy and variability of behaviour), Openness (level of intellectual curiosity and aesthetic sensitivity), Agreeableness (level of the interpersonal tendencies of friendliness, or rejection towards others) and Conscientiousness (level of self-control and self-determination).

Repertory Grid Technique

From the point of view of evaluation, one of the most known tools of the model of personal constructs is the repertory grid technique. It consists of a very particular interview in which the examiner chooses a series of elements from which information from the client is obtained (Feixas & Cornejo, 1996; Fransella, Bell & Bannister, 2003). These elements are chosen for reasons of pertinence and relevance to the subject to be explored and represent relevant aspects of the subject's experience. The personal construct theory's assumption is that people elaborate the meaning of reality attaching importance to the experiences they live. The elements are usually aspects of the self (actual self, ideal self), symptoms or problems (e.g. fibromyalgia, battering) or people significant to the subject (e.g. partner, father). Elements are compared to each other either in trios (triadic procedure) or in duos (dyadic procedure), and the subject is asked in which psychologically relevant aspects they look alike and are different. From this contrast between resemblance and difference, there arises a construct.

The repertory grid is corrected by using several indicators, both of content and of a structural type. Structural indicators inform about the degree of complexity and flexibility of the construction system. The content refers to the subject matters that the constructs reflect.

The grid technique has always been administered during personal interviews. In the case of battered women, therapist have gained extensive experience with this technique and they have managed to solve many possible problems of interpretation for the participants, by using examples closely related to the personal experience of thess women.

Procedure

The general population sample was obtained through students of the Faculty of Psychology of the University of Seville (Spain), while they were doing

their training for the subject course *Theories of Personality*. They were trained by the subject course teachers, both theoretically and in the practical application of the two assessment instruments used. They were required to choose an adult person without a psychopathological diagnosis whose personality they assessed, under the permanent supervision of their teachers.

The sample of women suffering from fibromyalgia was recruited during a study about the role of personality in psychological adjustment to chronic pain, which was being developed in the *Distrito Sanitario Sevilla Sur de Atención Primaria*, specifically in the health centre "Doña Mercedes" in the town of Dos Hermanas (Seville, Spain). This is a public primary health care centre. Patients were individually evaluated by one of the authors of the paper as part of her doctoral thesis.

The sample of abused women was recruited in several locations of less than 20,000 inhabitants, most of them rural, thanks to a project coordinated by the University of Seville and financed by the *Diputación Provincial de Sevilla*, by means of which therapeutic assistance was offered to these women in their own towns of residence (Garcia-Martínez, Guerrero-Gómez, León-Serrano, Álvarez-Vela and Tovar-Sánchez, 2008).

Data of the three samples were collected in 2007 and in the first months of 2008.

In our study, we used the typical repertory grid of the *dilemma project* (Feixas & Saúl, 2004): a square grid with 15 elements practically predetermined but which are slightly modified to adjust them to each specific theme of research. The elements are: actual self, the self before a specific change (the nature of the change depends on the goal of each study), the self in 6 months, mother, father, partner, other significant relatives, three more significant people (if the grid is completed in a clinical setting, one of this is substituted by therapist or doctor), a pleasant male, a "*non-grata*" male, a pleasant female, a "*non-grata*" female and ideal self.

Grids were always applied during personal interview. The therapists who administered grids to abused women were specifically trained in constructivist techniques and they were well prepared to solve the problems that rural abused women could raise during grid administration.

The application procedure of the repertory grid followed the following criteria:

1) Constructs were generated through a dyadic comparison.

2) The grid was completed when the number of constructs equalled the number of elements (i.e., a square grid was obtained).

3) Once the grid was completed, all constructs were scored across all the elements, using a 7-score interval scale. Scores 1-3 assessed the intensity of the left pole, 5-7 the intensity of the right pole and score of 4 indicated the non-applicability of the construct to the element or the balanced position between the two poles. Thus, in the construct intelligent-insightful, 1 indicates that the person is very intelligent but not at all insightful, and 7 indicates that he or she is very insightful but not at all intelligent.

These scores allowed us to perform the statistical analysis of the data, which complements the qualitative analysis which comes directly from the content of the constructs.

To analyze the contents of constructs, the categorization system created by Feixas, Geldschläger and Neimeyer (2002) was used. This system groups the contents of constructs under eight categories: Moral, Emotional, Relational, Personal, Intellectual/Operational, Values and Interests, Existential, and Concrete Constructs. Each category is subdivided into categories that are more specific and all of them have a final subcategory that refers to other constructs that can be included in the general category, but not specified in concrete subcategories. However, in this study, constructs were assigned only to the general category.

For the "general" and "fibromyalgia" samples (in which there had been no therapeutic contact with participants), the content determination was based on an analysis performed by three independent judges. The category was assigned to the construct when agreement was not less than 2/3.

In the case of the abused women sample, the content of constructs was assigned by means of a rational analysis, during therapeutic supervisions, with knowledge of each woman's history being taken into account, and based on the therapist-supervisor agreement. In fact, both procedures are similar, in both judges attend to the nature of constructs and look for a concurrent judgement, but in clinical cases we had more detailed information that permitted a better understanding of constructs' nature (information obtained during clinical sessions). This additional information is not available when we have only one or two sessions with the assessed person (as in the fibromyalgia or general population samples), so in these latter cases the only alternative is the usual judges' concordance criterion.

The ex-post facto correlational design was used in this study. The values of all variables were compared trough samples (general-patient) looking for differences between them. Descriptive statistics were used, both univariate (means, standard deviations, percentages, etc.) and bivariate (Pearson's r and

ANOVAs). For correlation and frequency analyses, direct values of variables were included as values of reference. For most analyses, ANOVA was used, except for the presence of dilemma (a qualitative variable). In this last case Pearson's chi square test was used.

All the data were processed by using the SPSS 16.0 program. The data obtained from the analysis of repertory grids were previously processed by means of the *gridcor* program (Feixas & Cornejo, 2000).

Variables

In the first place, basic socio-demographic variables were considered: gender, age, marital status and academic level.

In the trait domain, we used the direct score obtained in each of the big five factors of the NEO-FFI inventory: neuroticism (N), extraversion (E), openness (O), agreeableness (A) and conscientiousness (C).

In the domain of characteristic adaptations, we used four types of variables:

1. Those referring to the *content of constructs* were the *number of constructs* in each repertory grid for the moral, emotional, relational, personal, operational, and values categories. The value variable is the frequency of every type of content of constructs in the sample. The content analysis was made according to Feixas, Geldschläger and Neimeyer's (2002) proposal.
2. The variables referring to the *structure of the construction system,* were:

a) Functionally independent constructs. It is an indicator of the number of elements and constructs that are grouped together and indicates the level of the construct complexity. On an operating basis, it is the number of functional sets (data generated by the *gridcor* program in terms of the correlations between elements and constructs), divided by the total of elements and constructs in the grid. In our case: x/30.

b) Percentage of Variance Explained by First Axis (PVEF). It is the score of the main dimension of meaning, product of a previous simple correspondence analysis. The higher the score of such a dimension, the lower is the number of relevant components which are used in the construction of the experience. Taking into account that axes represent dimensions of meaning, the percentage of variance explained by first axis represents the magnitude of the main dimension of meaning. It is regarded as the best indicator of complexity. If the score is high, it indicates that the subject explains much about his or her world in only one axis, based on which we can understand a cer-

tain way of constructing his or her "one-dimensional" world. If the score were low, we would be in the presence of a subject with a greater cognitive complexity (Feixas & Cornejo, 1996). As regards the *gridcor* program (Feixas & Cornejo, 2002), data are always grouped in five axes arranged from higher to lower in terms of the percentage of variance explained.

c) Intensity. It is a measure of the degree of integration of the construct. It refers to the sum of the absolute score of the correlations of each construct with the others, divided by the total constructs less one. The higher the score, the higher the level of integration among constructs and the construction is less lax (Bannister & Fransella, 1966).
d) Discriminative potency (potency). It is an indicator intended to arrange hierarchically the constructs of the system. It is calculated by multiplying the number of different scores by the difference between the highest and the lowest score and dividing the product by the total number of scores. The higher the score, the more hierarchized the construction system.
e) Polarity. This indicator shows the degree in which the subject uses extreme scores (1 or 7). It is calculated by dividing the number of extreme scores by the total number of constructs. High scores are considered a form of cognitive rigidity. On the contrary, low scores gives us an idea of the cognitive "laxity" of the subject (Feixas & Cornejo, 1996).
f) Indefinition. It is the indicator opposite to polarity. The percentage of the non-extreme scores used by the subject. It indicates the incapacity to define in a precise way the nature of a given construct.

3. Variables related to the *construction of the self.* These are the Pearson's correlations between actual self, ideal self and those containing the element of others. *Others* is the result obtained as the mean of all elements not related to the self (Feixas & Cornejo, 1996). These correlations allow us to study the subject's self-esteem, specifically:

a) The correlation between actual self and ideal self: It is a measure of the subject's direct self-esteem. It measures the degree of proximity between the subject's self-perception and ideal image.
b) The correlation between actual self and others. It is the degree of proximity between self-perception and perception of the others. It evaluates the degree of social isolation perceived (the higher the score, the less the isolation).

c) The correlation between ideal self and others. It is the degree of proximity between the ideal self-image or personal goal and the perception of others. It evaluates the extent to which others become idealized, which implies the degree of adequacy attributed to others.

4. Implicative Dilemma (dilemma). The last variable considered in our analysis is the presence of the implicative dilemma. The implicative dilemma is the evidence of incoherence in the subject's construction system, which implies that the person should have difficulties in the elaboration and development of his or her behaviour when, in order to carry out an activity, he or she has to use simultaneously the two constructs involved in the dilemma.

To understand the notion of dilemma, we should distinguish between congruent constructs and divergent constructs (Feixas & Saúl, 2004). The former are those constructs in which the position of the actual self coincides with that of the ideal self, so that the person places both aspects of the self in the same pole of the construct and with a similar intensity. The latter are those constructs in which the position of the actual self and that of the ideal self diverge, so that the actual self is located in a pole different from that of the ideal self. Mathematically, the divergent construct is defined as that in which the difference between the score assigned to the ideal self and to the actual self is less than four absolute scores (for example, in the construct intelligent-skilled, if actual self had a score of 2, but the score for the ideal self were 7, the following difference would result, 2-7 = 5. Score 5 would indicate that this construct is divergent for the subject).

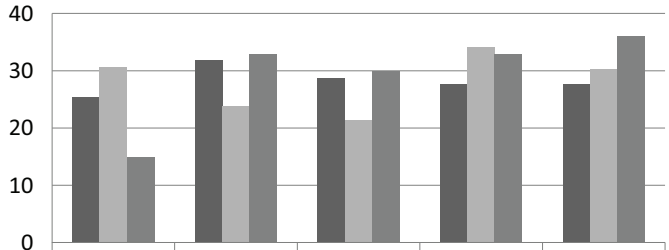
The implicative dilemma occurs when a congruent construct and a discrepant construct are simultaneously activated, and *besides*, they are positively correlated between each other, so that a change in a construct (a change in the location of the actual self between the poles) results in a change in the other (also a change in the location of the actual self between the poles).

RESULTS

In the first place, we performed several comparative analyses to determine if there were statistically significant differences between the two samples not taken from the general population. Only in very few variables, which are mentioned in the following paragraphs, there were such differences. That is why we decided to group together these two samples, subjects with fibromyalgia (N=43) and abused women (N=84), in the so-called *sample of patients* (N=127).

Descriptive data and the effect of the sample type

Figure 1 shows the descriptive data of traits sorted by sample. Mean values of Spanish population (Scale) are included, too, to facilitate comparisons between general Spanish population, general sample and patient sample. People who form part of the patient sample (fibromyalgia or abuse) manifested higher levels of neuroticism, agreeableness and conscientiousness, as well as lower levels of extraversion and openness.



	N**	E**	O**	A**	C**
Normal	25,4	31,8	28,7	27,7	27,7
Patients	30,6	23,9	21,4	34,1	30,3
Scale	15	33	30	33	36

Figure 1. Mean values for traits (N: Neuroticism; E: Extraversion; O: Openness; A: Agreeableness; C: Conscientiousness). Scale: Mean of the Spanish General Population. ANOVA. **p<0,01

Figure 2 shows the average number of constructs in any content category generated by the participants. The ANOVA analysis indicated that the general population sample exhibited a greater amount of relational, personal and value constructs. In contrast, the participants from the patient sample used a greater number of moral and emotional constructs, especially participants from the sub-sample of abused women.

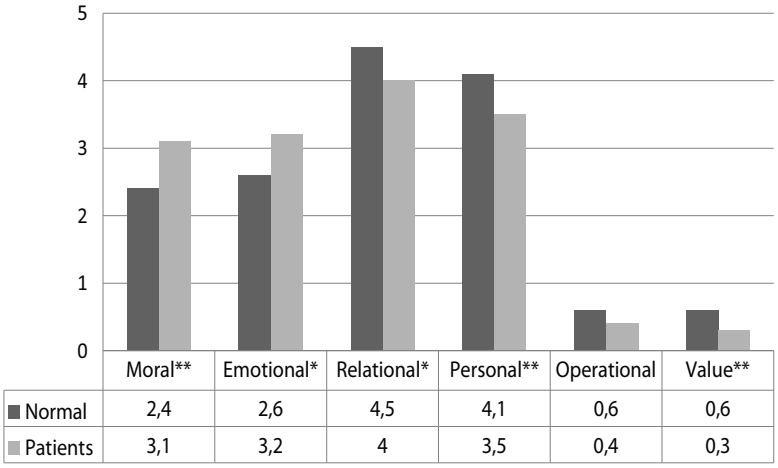


Figure 2. Mean values for the content of constructs (ANOVA). **p<0,01; *p<0,05

Table 1 shows the data on cognitive structure. The general population sample showed a statistically significantly greater number of functionally independent constructs, lower polarization levels and higher cognitive complexity, indefinition and dilemma presence. The dilemma presence is a nominal category, therefore, the Chi square test was applied here.

Table 1. Mean values and standard deviations for the indicators of cognitive structure (ANOVA), including percentage of presence of dilemmas (Chi-square).

	Normal	**Patients**	**Range**
FIC** (Anova)	9,6 (3,3)	6,5 (3,1)	(0-15)
PVEF** (Anova)	42,2 (11)	46,6 (10,6)	(0-100)
Intensity (Anova)	0,18 (0,6)	0,19 (0,5)	(0-1)
Potency (Anova)	1,7 (0,31)	1,7 (0,29)	(0,13-2,8)
Polarity** (Anova)	25,7 (13)	36,1 (17,4)	(0-100)
Indefinition** (Anova)	15 (8,18)	8,2 (7,9)	(0-100)
Dilemma presence* (Chi Square)	62%	46%	(0-100)

**p<0,01; *p<0,05

Table 2 presents the indicators for the construction of the self. Participants in the general population sample showed higher self-esteem and lower self-perceived isolation than subjects in the patient sample.

Table 2. Mean values and standard deviations for the indicators of construction of the self. ANOVA.

	Normal	Patients
Self-ideal correlation**	0,35 (0,33)	0,14 (0,35)
Self-others correlation**	0,4 (0,26)	0,21 (0,29)
Ideal-others correlation	0,36 (0,28)	0,37 (0,27)

**p<0,01; *p<0,05

Links between personal domains

Table 3 contains the data concerning the association between the two personal domains: traits and personal constructs.

With regard to the content of the constructs, neuroticism was related to the production of more emotional and less operational constructs. Introversion was associated with the production of moral constructs. Openness correlated positively with the number of constructs on values (though only in the sub-sample of abused women). Openness was related to the verbalization of emotional constructs, unlike what happened with conscientiousness.

Table 3. Statistically significant correlations between traits and personal constructs (N: Neuroticism; E: Extraversion; O: Openness; A: Agreeableness; C: Conscientiousness). Pearson's r. ANOVA.

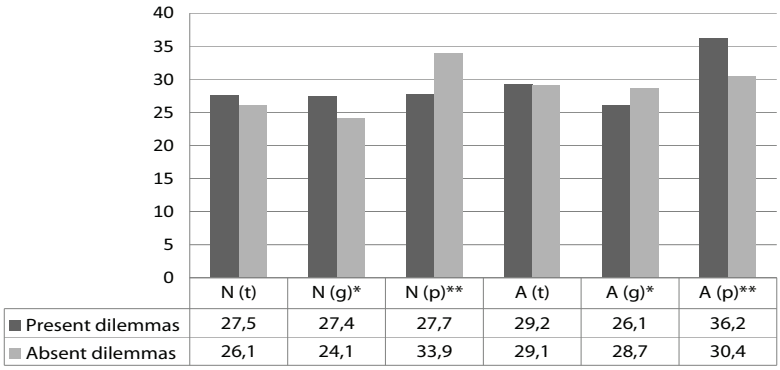
	N	E	O	A	C
Content of constructs					
N moral constructs		-0,16*			
N emocional constructs	0,15*			0,24**	-0,15*
N operational constructs	-0,17*				
N values constructs			0,45**[1]		
Cognitive structure					
FIC	0,20*[2]	-0,16*[2]		-0,24**	-0,28**
PVEF				0,27**	0,21**
Intensity				0,22**	0,21**
Potency			-0,29*[3]	-0,17*	-0,2**
Polarity	0,16*				0,29**
Indefinition		-0,34*[3]			-0,19**
Construction of the self					
Self-ideal correlation	-0,23**	0,23**	0,19**		
Self-Others correlation	-0,16*	0,23**			

**p<0,01; *p<0,05

[1] Only in the battered women sample.
[2] Only in the general population sample.
[3] Only in the patient sample.

With regard to the presence of implicative dilemmas, as depicted in Figure 3, only two traits showed statistically significant associations. Individuals from the general population samples with dilemmas scored higher on neuroticism and lower on agreeableness, while the contrary occurred in the sample of patients.

Finally, as regards the construction of the self, better levels of self-esteem were associated with extraversion, openness and stability, while neuroticism and introversion were linked to self-perceived social isolation (Table 3).



	N (t)	N (g)*	N (p)**	A (t)	A (g)*	A (p)**
Present dilemmas	27,5	27,4	27,7	29,2	26,1	36,2
Absent dilemmas	26,1	24,1	33,9	29,1	28,7	30,4

Figure 3. Statistically significant associations between traits and the presence of dilemmas (N: Neuroticism; A: Agreeableness; t: Total sample; g: General population sample; p: Patients sample). ANOVA. **p<0,01; *p<0,05

DISCUSSION

The basic objective of our work was to find links between the variables of two personality domains: personal constructs—variables located in characteristic adaptation level from McAdam's point of view—and traits—typical variables of the personal disposition level. We can conclude that such links do exist and affect the set of indicators used in this study.

Few correlations between the content of the constructs and the traits could be found in the work conducted by other researchers (Grice, Jackson & McDaniel, 2006). Given the idiosyncrasy of personal constructs, they should go beyond traits and their range of convenience should be more diffuse, since traits can only explain a part of the total variability of constructs. However, there can be found some associations that show certain levels of agreement between both variables.

On the one hand, as regards the content of the construct, it is emotional contents that are more strongly associated with traits. Indeed, traits are associated with different affect components, and although they cannot be reduced to emotions, they do explain an important part of the emotional life. It should be taken into account that a construct always evidences a dichotomy, therefore, it is very difficult to separate aspects of positive affect and negative affect in it. They are expected to go always together by contrast. The nature of the construct indicates the significance of this subject matter (in this case, emotions) for the life of the individual, and we find that subjects that attribute much importance to emotional explanation of their experience (greater number of emotional constructs) are more neurotic and agreeable but less conscientious. This indicates that they are more prone to emotional instability (they need to regulate negative affect), they are more willing to cooperate and have more positive relationships with others, but are less resolute and self-controlled. All in all, from a perspective based on the stress control, they would prefer an approach based on emotions over the one based on the resolution of tasks (Lazarus & Folkman, 1984).

Beyond this result, we can only establish two facts. Extroverted subjects define their experience less in terms of morality, which agrees with Eysenck's view (1997) who maintained that extroverts are less concerned about social or moral rules and are more indifferent to them.

Finally, openness correlates with the number of constructs related with values. This is consistent with the proposal of the big five model, since focusing on values is characteristic for subjects with greater openness (Costa & McCrae, 1992b).

As regards the structure of the construct, there is a set of data that indicates that subjects who are more complex and who use a greater number of dimensions to explain their experience (high scores on FIC, and low on PVEF), are less agreeable and more conscientious, that is, they care more about the control of the environment than about the quality of relationships with others.

Agreeableness and conscientiousness traits are also associated with the discriminative potency and the intensity of the construction system. Intensity is an indirect measure of the system's integration and the potency of its hierarchization degree (where we find constructs that are more predominant than others). Participants who are more agreeable and more conscientious, in addition to being more complex, have a more integrated and less hierarchical construction system, which enables them to give more subtle and adaptable

explanations. This conclusion is also consistent with the perspective of traits, agreeable and conscientious subjects tend to be more effective and handle their relationships better, which means that they are more adaptable to different circumstances (Costa & McCrae, 1992b). On the other hand, subjects scoring higher on openness are less hierarchized (lower score on discriminative potency), which indicates that the different perspectives with which they contemplate experience have a similar meaning for them, and should be taken into account simultaneously.

With respect to polarity and indefinition, the usual result is higher polarity in neurotic subjects, which indicates a greater rigidity in their constructions (Winter, 1992). In general, high scores on polarity are found in many pathological samples, because the capacity of these individuals to adopt a perspective different from the usual one is much more reduced (Baker, Neimeyer and Barris, 1997; Neimeyer, 1985; Winter, 1992).

In turn, subjects scoring higher on conscientiousness are more rigid and less undefined, which means, in this case, that they have a clearer perception (better defined) of their experience, which makes them more resolute.

As to the construction of the self, those individuals who have positive perception of themselves are more open, more extroverted and less neurotic, which matches the general results of the work done on traits (they are more prone to positive affect, less prone to negative affect, and take into account their own points of view). The same profile is displayed in the case of the social isolation measure (negative correlation between the self and others): more socially isolated subjects are also less extraverted and more neurotic.

Findings based on personal constructs converge to a great extent with those expected from a trait perspective. This indicates that, at least in part, the laws of the two personality levels converge, and it is possible to generate predictions, at least to a certain degree, about how the variables of one of the domains will be affected by those of the other. Our study is correlational in nature, therefore, we cannot make any progress about the direction of the prediction. In the future, with larger samples and more powerful statistical designs, we might formulate predictive and regulatory type hypotheses and verify which of the two domains affects more the functioning of the other.

However, beyond the concordances between personality domains, our study indicates that the type of sample is an essential modulating variable in the relationships of constructs and traits. If we consider normal and clinical samples, significant differences are found for the big five traits, with patients scoring higher on neuroticism and agreeability and conscientiousness

and lower on extraversion and openness. Generally, the patients showed a higher level of emotional disturbances, as expected, but at the same time they displayed an acceptable social image (disciplined and agreeable), but they are less open to their own experience and are more isolated and concerned with themselves. This still presents an expectable picture, indicative of greater negativity and personal rigidity. The fact that they are less open to experience is one of the determinants of their state of abnormality. It is known that effective psychotherapy makes people more open and more prone to personal change (Adler, Wagner & McAdams, 2007).

Differences were also found between the contents of the construct across the investigated samples. The samples of patients used mainly moral and emotional constructs, while the general population sample used more relational and personal constructs. This indicates that patients tend to use constructs that make overall assessments that refer to contents, that are more determining or wide-ranging (good-bad, acceptable-unacceptable, happy-sad, controlled-out of control), while the healthy individuals tend to use categories predominantly referring to personal characteristics or relational styles. It seems, thus, that the tendency to use a given type of construct content is associated with the degree of normality-abnormality of the individuals. In this regard, the general recommendations of narrative therapy are also appropriate: the change in the contents of narration is a clear indicator of recovery (Singer & Rexhaj, 2006).

Differences between the samples were also reflected in the construct structure and in the construction of the self. The general population sample is more complex in its construction (higher scores on FIC and lower scores on PVEF) and less rigid (lower scores in polarity). It is worth stressing the differences in the indefinition scores between both samples; indefinition does not score high in any of the samples (the mean of 15 for the general population sample, and 8.2 for the patient sample), therefore, none of the two samples is clearly undefined, which would render it impossible to make a decision in terms of the theory of personal constructs (Winter, 1992). This indicates that the sample of patients is less prone to adopt more flexible perspectives in the application of personal constructs to experience.

With regard to the construction of the self, the normal sample shows a profile of greater positivity, as expected, while the correlations between the self, the ideal, and others are higher, which indicates a better construction of personal esteem.

Perhaps, the less expected result is that of the stronger presence of dilemmas in the general population sample. Although dilemmas are present in around one third of the normal population, their presence is stronger in clinical samples - around 66% (Saúl, 2005; Feixas & Saul, 2001). In our case, the proportion is practically reversed.

The presence of dilemmas also showed a significant association with some traits, but only if the general population sample and the patient sample are analysed separately. If we analyse the total sample, no differences in the scores obtained in any of the big five factors were found, although the neuroticism and agreeableness traits show significant effects due to the presence of absence of dilemmas. These results are quite paradoxical, since neuroticism scores are higher in the general population sample and lower in the patient sample. It would have been reasonable for neuroticism to be always linked to greater presence of dilemmas, since the emotional vulnerability characteristic of neuroticism can be consistent with the cognitive instability that implies the presence of a dilemma.

As to the agreeableness trait, the dilemma scores point to a similar direction, the scores are higher in the patient sample, and lower in the general population sample, as if cooperation and cordiality with the others meant a clear dilemma for patients, but not for individuals in the general population sample.

Such paradoxical results with respect to the relationship between dilemmas and traits are probably due to the type of clinical samples chosen. The sample of abused women contained 58% of women with dilemmas, which brings it closer to the typical clinical samples. But only 37.5% of female patients with fibromyalgia experienced dilemmas. Therefore, the sample of patients with fibromyalgia lowered the presence of dilemmas in the overall sample of patients.

We do not know the cause for this effect. We understand that samples of patients with chronic pain must be carefully studied to elucidate the nature and number of dilemmas they can experience. In any case, dilemmas seem to be a very determining variable of the construction system and their link to indicators of other personality levels must be analysed thoroughly in the future.

There remains so much to be done in the study of links between traits and personal constructs, but as from this study, we believe that it will be possible to formulate working hypothesis somewhat more adjusted than those available so far. As a general conclusion, we can say that there are links between constructs and traits, but that the type of sample with which

we work seems to be a basic mediator of the relationships established between the variables of two different personality levels.

Some limitations of this study are as follows:

a) The great number of females in the sample. Probably, it is necessary to replicate this study with more gender-equilibrated samples, in order to study potential differences related to gender. Anyway, our samples are good representations of the selected populations. In the case of general population, at least in Spain, women coursed psychology much more than men (80% of women, Freixa, 2005). Fibromyalgia incidence is much more frequent in women, 87% of patients are women if we attend to world prevalence (Wolfe, Ross, Anderson, Russell & Herbert, 1995). In Spain, 96% of fibromyalgic patients are women (Carmona, Ballina, Gabriel & Laffron, 2001). And, obviously, all the participants in the sample of battered women are women. Due to this, our study inform more about the relationships between traits and personal constructs in females than in the general population, but it does not invalidate its preliminary character.

b) It is necessary to select a better contrast sample for fibromyalgia in order to understand in a more accurate way the characteristics of the personality of fibromyalgic patients. Probably, a control sample from general population is not adequately useful to capture well the problematic of chronic pain.

c) The study must be replicated with a larger and better defined sample and using more powerful statistics. Based on the results of solely our study, it is impossible make any causal explanations for the differences between the general population and clinical samples.

d) Age differences between the samples are another limitation of our study; the samples with psychological or physical problems are older than the sample from general population. Perhaps it could affect results.

On the other hand, it is necessary to obtain a better location of variables into personality domains: any identity-related variable (as personal constructs) could be situated in the identity level, or it is only possible for life histories and narratives as McAdams says. However, this theoretical issue extends much beyond the aims of our study.

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