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**MALADAPTIVE SCHEMAS, IRRATIONAL BELIEFS,  
AND THEIR RELATIONSHIP WITH  
THE FIVE-FACTOR PERSONALITY MODEL**

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**Abstract**

This paper examined the relationship between the Five-Factor model of personality and some maladaptive schemas and irrational beliefs as suggested by the Cognitive-Behavioral Therapy (CBT) framework. Data were gathered from 154 undergraduate students who completed four measures: DECAS Personality Inventory (a Romanian validated instrument for the Five-Factor model of personality), YSQ – L2 (Young Schema Questionnaire), ABS-2 (Attitudes and Beliefs Scale 2), and GABS-SV (General Attitudes and Beliefs Scale – Short Version). Emotional stability and agreeableness were negatively related to maladaptive schemas and irrational beliefs. While emotional stability was negatively associated with almost all schemas and irrational beliefs, agreeableness was inversely linked with schemas involved in externalizing psychopathology, such as mistrust, abandonment, entitlement and domination.

**Keywords:** five-factor model of personality, big-five, irrational beliefs, schema, psychopathology, DECAS

It is now common knowledge that our behavior is a natural consequence of the interaction between personality and situation (Mischel, 1968), which often leads to difficulties in predicting how an individual might behave. However, regardless how foolish an act might look like, people make use of reasoning in an attempt to justify their behavior. Designated as “if-then behavioral signatures” these decisions are seriously influenced by cognition, such as encoding strategies (ways of interpreting past or present situations) and expectancies (predictions of results in the future).

This approach is entirely supported by various forms of cognitive-behavioral psychotherapy (CBTs) (Beck, 1976; Ellis, 1994). For example, a key aspect of Rational Emotive Behavior Therapy (REBT) is that people are not disturbed by events *per se* but by the views and beliefs they have of the events (Davies, 2006). Ellis (1994) argued that endorsement of certain irrational ideas,

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and of the corollaries they normally lead to are the main causes of emotional disturbances. Similarly, one of the main assumptions of Beck's (1976) cognitive theory of psychological disorders is the existence of maladaptive schemas, which essentially reflect deeply the rooted patterns of distorted thinking about the world, oneself and one's relationship with others.

Despite the very promising evolution of various forms of CBTs, there are very few attempts to link personality to irrational beliefs and schemas, particularly if we take into account the most common approach to personality which is the five-factor model, otherwise known as the Big-Five model. A PsycInfo literature search on the five-factor model of personality returns over 2800 entries in the last 20 years, out of which 1000 recorded in the last five years (Sava, 2008). However, based on our data, there are only two previous attempts that link the five-factor model of personality to irrational beliefs and schemas. Davies (2006) found that the global irrationality score (IR) positively correlates with neuroticism and conscientiousness, and is negatively related to openness. However, this result should be interpreted with caution since the author used the 10-item short version of the NEO (Gosling, Rentfrow, & Swann, 2003) for which an average Cronbach's alpha of .55 was reported. Similarly, Muris (2006) found that neuroticism was positively related to the entire range of maladaptive schemas included in Young's set of core maladaptive schemas (Young, Klosko, & Weishaar, 2003). In another study, the five-factor model was related with the individual's ability to dispute irrational beliefs (Blau & Fuller, 2006). The main results suggest that anti-awfulizing beliefs positively correlate with emotional stability (low neuroticism), anti-low frustration tolerance beliefs are directly linked to emotional stability and agreeableness, and anti-self-downing beliefs are positively associated with emotional stability, conscientiousness and extraversion. Such results, confirm a more generalized link between various personality traits and irrational beliefs as presented in previous findings such as ten of Gough's CPI empirical scales, some of Catell's 16PF scales, Eysenck's neuroticism scale, Adorno's right-wing authoritarianism or Welsh's dimensions of orrignence and intelectence (Forman & Forman, 1978; Walter, Thorpe, & Kingery, 2001; Wicker, Richardson, & Lambert, 1985).

There are additional shortcomings in linking the five-factor model of personality to irrational beliefs due to measurement concerns involving the latter construct. One line of criticism was advanced by Demaria, Kassinove and Dill (1989) who found most irrational beliefs measures inappropriate because they did not measure beliefs independently from the affect they were supposed to cause. A more in depth critique of REBT instruments is provided by Szentagotai and Kallay (2006). One of the most important shortcomings is that many irrational beliefs scales do not include the central aspects of irrational thinking such as proposed by Ellis (1994); thus these scales do not link well with their basic theory. According to Ellis (1994) there are four categories of processes that represent the core of irrational thinking: (a) demandingness (DEM) (inflexible

standards and demands, e.g., “I absolutely must pass the exam”); (b) awfulizing/catastrophizing (AWF) (e.g. “Failing the exam would be the worst thing that could ever happen to me”); (c) low frustration tolerance (LFT) (e.g. “I can’t stand failing the exam”); and (d) global evaluation of human worth and self-downing (SD) (e.g. “I’m a total failure for not passing the exam”).

The main goal of this paper is to establish the relationship between the five-factor model of personality and a set of various beliefs relevant to the clinical setting such as the core irrational beliefs proposed by Ellis (1994), and the maladaptive schemas proposed by Young (Young, Klosko, & Weishaar, 2003), respectively. The latter concept refers to 16 (later on, 18) hypothesized core maladaptive schemas that can be allocated into five schema domains: (a) disconnection and rejection; (b) impaired autonomy and performance; (c) impaired boundaries; (d) other-directedness; and (e) overvigilance and inhibition. These core maladaptive schemas have been successfully identified in patients suffering from various types of psychopathology (Davies, 2006).

The relationship between irrational beliefs as proposed by Ellis, and Young’s maladaptive schemas is not very well established. However, some irrational beliefs such as DEM and SD are considered cold cognitions, thus schemas, as it is the case with Young’s maladaptive schemas, while AWF and LFT are considered hot cognitions, appraisals (Szentagotai et al., 2005).

Consequently, a secondary goal was to establish the empirical relationship between Ellis’ core irrational beliefs and Young’s maladaptive schemas.

## Method

### *Participants*

One hundred fifty-four undergraduate students (56.5% females, median age = 21), representing a convenience sample, volunteered to participate in this study. In exchange for their effort, they could save an extra credit for an intermediate data analysis course.

### *Measures*

The DECAS Personality Inventory (Sava, 2008) is a 95-item test which requires a dichotomic answer (“true”/“false”). The items are distributed into five content scales: openness, extraversion, conscientiousness, agreeableness, and emotional stability (its reversed score is neuroticism), representing the five-factor model of personality. The internal consistency of the scales as measured on a Romanian representative sample (N = 1250) varies between .70 for conscientiousness and .75 for emotional stability. Six weeks test-retest correlations range between .79 for agreeableness and .92 for emotional stability. Reliability coefficients for this study are presented in Table 1. Concurrent validity

showed very good relationship with the Romanian version of the NEO PI-R, uncorrected correlation coefficients ranging from .57 for agreeableness to .81 for

**Table 1.** Means, standard deviations and correlation coefficients among study variables (alpha values presented on main diagonal)

	M	SD	E	A	C	ES	O	YS	ED	AB	MA	SI	DS	FA	DI	VH	EM	ET	IS	SB	SS	SU	EI	US	IR	Gac	Gap	GC	
1. Personality – DECAS																													
E – Extraversion	11.32	3.94	80																										
A – Agreeableness	9.10	3.53	<i>01</i>	71																									
C – Conscientiousness	9.95	3.66	<b>-25</b>	<i>10</i>	72																								
ES – Emotional stability	8.38	4.08	<i>17</i>	<i>20</i>	<i>-05</i>	81																							
O – Openness	8.95	3.37	<i>27</i>	<i>16</i>	<i>01</i>	<i>15</i>	68																						
2 Schemas YSQ-L2 - YS total																													
ED – Emotional deprivation	18.60	7.54	-16	<b>-33</b>	01	-12	-14	--	86																				
AB – Abandonment	36.10	10.42	-19	<b>-44</b>	<b>-05</b>	<b>-48</b>	-10	--	<b>49</b>	86																			
MA – Mistrust / abuse	40.77	12.00	-16	<b>-64</b>	<b>-06</b>	<b>-33</b>	-13	--	<b>57</b>	<b>68</b>	88																		
SI – Social isolation	20.94	6.80	<b>-27</b>	<b>-47</b>	<b>-04</b>	<b>-32</b>	-16	--	<b>61</b>	<b>59</b>	<b>68</b>	80																	
DS – Defectiveness / shame	26.35	7.90	<b>-25</b>	<b>-38</b>	<b>-10</b>	<b>-26</b>	-02	--	<b>53</b>	<b>70</b>	<b>62</b>	<b>72</b>	84																
FA – Failure to achieve	16.21	5.47	-19	-19	<b>-02</b>	<b>-51</b>	-13	--	<b>35</b>	<b>67</b>	<b>48</b>	<b>51</b>	<b>64</b>	85															
DI – Dependence	28.44	8.98	-12	-18	<b>-16</b>	<b>-46</b>	<b>-22</b>	--	<b>23</b>	<b>69</b>	<b>42</b>	<b>46</b>	<b>60</b>	<b>79</b>	88														
VH – Vulnerability to harm	27.93	8.32	-20	<b>-40</b>	05	<b>-49</b>	-13	--	<b>31</b>	<b>69</b>	<b>62</b>	<b>56</b>	<b>56</b>	<b>51</b>	<b>56</b>	81													
EM – Enmeshment	22.87	7.19	-16	-16	07	<b>-41</b>	-04	--	<b>18</b>	<b>53</b>	<b>41</b>	<b>42</b>	<b>39</b>	<b>52</b>	<b>53</b>	<b>46</b>	76												
ET – Entitlement / grandiosity	32.53	7.11	04	<b>-62</b>	<b>-05</b>	<b>-22</b>	02	--	<b>35</b>	<b>48</b>	<b>67</b>	<b>44</b>	<b>36</b>	<b>19</b>	<b>33</b>	<b>42</b>	<b>28</b>	71											
IS – Insufficient self-control	37.18	9.92	08	<b>-43</b>	<b>-31</b>	<b>-37</b>	03	--	<b>32</b>	<b>56</b>	<b>58</b>	<b>45</b>	<b>43</b>	<b>43</b>	<b>58</b>	<b>48</b>	<b>26</b>	<b>66</b>	82										
SB – Subjugation	22.11	5.94	-17	-12	06	<b>-45</b>	-12	--	<b>35</b>	<b>62</b>	<b>50</b>	<b>49</b>	<b>57</b>	<b>70</b>	<b>59</b>	<b>51</b>	<b>67</b>	<b>26</b>	<b>29</b>	71									
SS – Self-sacrifice	54.49	12.36	-01	-03	<b>23</b>	<b>-38</b>	07	--	<b>32</b>	<b>38</b>	<b>31</b>	<b>30</b>	<b>29</b>	<b>39</b>	<b>27</b>	<b>26</b>	<b>35</b>	<b>29</b>	<b>22</b>	<b>54</b>	84								
SU – Social undesirability	15.97	4.14	<b>-32</b>	<b>-31</b>	<b>-01</b>	<b>-38</b>	-20	--	<b>47</b>	<b>63</b>	<b>54</b>	<b>63</b>	<b>70</b>	<b>57</b>	<b>66</b>	<b>52</b>	<b>46</b>	<b>25</b>	<b>39</b>	<b>61</b>	<b>25</b>	58							
EI – Emotional inhibition	21.06	6.95	-17	<b>-41</b>	<b>-02</b>	<b>-34</b>	00	--	<b>51</b>	<b>59</b>	<b>68</b>	<b>67</b>	<b>64</b>	<b>42</b>	<b>45</b>	<b>52</b>	<b>35</b>	<b>59</b>	<b>59</b>	<b>48</b>	<b>44</b>	<b>51</b>	80						
US – Unrelenting standards	49.53	10.06	06	<b>-35</b>	15	-15	12	--	<b>30</b>	<b>35</b>	<b>47</b>	<b>33</b>	<b>30</b>	<b>20</b>	<b>22</b>	<b>32</b>	<b>19</b>	<b>64</b>	<b>41</b>	<b>30</b>	<b>48</b>	<b>24</b>	<b>51</b>	76					
GABS SV IR- Irrational scale																													
Gac – Achievement	9.79	3.40	05	<b>-22</b>	03	-01	10	15	07	15	08	09	05	17	07	06	16	11	15	11	07	14	07	16	--	80			
Gap – Approval	6.46	2.00	07	-10	-15	-09	-02	<b>23</b>	-02	<b>33</b>	15	04	18	<b>28</b>	<b>32</b>	19	18	11	16	<b>23</b>	08	14	15	06	--	<b>44</b>	67		
GC – Comfort	9.06	2.70	-06	-20	03	<b>-21</b>	-10	<b>24</b>	14	<b>24</b>	20	08	20	<b>31</b>	<b>24</b>	<b>26</b>	<b>29</b>	13	16	<b>21</b>	03	<b>23</b>	16	00	--	<b>51</b>	<b>50</b>	65	
GJ – Justice	12.72	3.42	03	<b>-23</b>	11	<b>-24</b>	03	<b>22</b>	00	16	20	09	00	02	08	20	18	<b>34</b>	<b>24</b>	11	<b>23</b>	03	<b>21</b>	19	--	<b>41</b>	<b>28</b>	<b>29</b>	
GS – self appraisal	7.40	2.34	-16	-10	01	<b>-21</b>	-16	<b>35</b>	18	<b>34</b>	<b>25</b>	<b>21</b>	<b>32</b>	<b>43</b>	<b>34</b>	<b>27</b>	<b>38</b>	05	18	<b>32</b>	15	<b>32</b>	<b>25</b>	09	--	<b>33</b>	<b>48</b>	<b>60</b>	
GO – others appraisal	8.81	2.51	-07	<b>-21</b>	02	-08	-16	11	11	06	<b>23</b>	10	03	00	05	10	10	10	08	08	06	05	03	-03	--	<b>04</b>	<b>09</b>	<b>15</b>	
ABS-2 DEM	22.12	3.86	-10	-15	18	-05	00	10	08	06	10	08	-02	05	-04	14	08	07	02	02	06	09	12	17	--	<b>40</b>	<b>13</b>	<b>35</b>	
ABS-2 LFT	21.97	4.22	-09	-13	09	<b>-36</b>	-07	<b>25</b>	10	<b>26</b>	13	13	10	<b>33</b>	<b>24</b>	<b>26</b>	<b>21</b>	14	17	<b>22</b>	<b>22</b>	18	13	08	--	<b>34</b>	<b>36</b>	<b>47</b>	
ABS-2 AWF	18.01	4.64	-12	<b>-25</b>	02	<b>-22</b>	-03	<b>34</b>	08	<b>34</b>	<b>24</b>	19	25	<b>27</b>	<b>30</b>	<b>33</b>	<b>22</b>	<b>25</b>	27	17	11	<b>26</b>	<b>25</b>	<b>25</b>	--	<b>51</b>	<b>35</b>	<b>48</b>	
ABS-2 SD	9.48	4.92	-09	-15	<b>.03</b>	<b>-25</b>	-10	<b>43</b>	<b>22</b>	<b>45</b>	<b>33</b>	<b>27</b>	<b>29</b>	<b>48</b>	<b>41</b>	<b>32</b>	<b>37</b>	14	<b>21</b>	<b>36</b>	16	<b>38</b>	<b>28</b>	16	--	<b>27</b>	<b>49</b>	<b>46</b>	

N = 154; |r| >= .16, p < .05; |r| >= .21, p < .01; |r| >= .26, p < .001; bold type for ps < .01 or lower (italics for correlations among scales within the same instrument)  
Cronbach's alpha coefficients for all scales are presented on the main diagonal.

	GJ	GS	GO	DEM	LFT	AWF	SD
GJ – Justice	74						
GS – self appraisal	<i>10</i>	59					
GO – others appraisal	<b>38</b>	<i>20</i>	68				
DEM – Demandingness	<i>21</i>	<i>11</i>	<i>18</i>	54			
LFT – Low frustration tolerance	<i>32</i>	<i>27</i>	<i>19</i>	<b>46</b>	51		
AWF – Awfulness	<i>37</i>	<i>34</i>	<b>16</b>	<b>42</b>	<b>54</b>	55	
SD – Self-downing	<i>14</i>	<b>63</b>	<b>11</b>	<i>18</i>	<b>43</b>	<b>43</b>	70

Extraversion. The scales also have very good construct validity. In a confirmatory factor analysis study, all DECAS scales loaded on the expected latent factor in an analysis that involved Barbaranelli and Caprara's BFQ (Caprara, Barbaranelli, Borgogni, & Perugini, 1993) and Goldberg IPIP Big Five descriptors (Goldberg et al., 2006). Supplementary data regarding the psychometric characteristics of this test can be found in Sava (2008).

The Young Schema Questionnaire (YSQ-L2) (Young & Brown, 2007) contains 205 items rated on a six-point Likert scale. This measure contains 16 scales: *emotional deprivation* (i.e. the belief that one's needs are never met by others), *abandonment* (i.e. the belief that close relationships with others will terminate), *mistrust and abuse* (i.e. the belief that others will take advantage of the person), *social isolation* (i.e. the belief that one is different from other people, feeling of not belonging), *defectiveness and shame* (i.e. the belief that one is inferior or unattractive), *failure to achieve* (i.e. one is incapable of performing well relative to others), *dependence and incompetence* (i.e. one is not capable of handling well everyday responsibilities), *vulnerability to harm and illness* (i.e. some external or internal disaster may occur at any time), *social undesirability* (i.e. the belief that one lacks social talents to cope well with others), *entitlement and grandiosity* (i.e. the belief that one is entitled to act without regard of others), *insufficient self-control and self-discipline* (i.e. the belief that one would not tolerate any barrier or rejection), *subjugation* (i.e. one must submit to the will of others in order to avoid negative consequences), *self-sacrifice* (i.e. one should postpone his or her needs to help others), *emotional inhibition* (i.e. one must inhibit one's emotions), *unrelenting standards* (i.e. one must meet unrealistically high standards). Reliability coefficients for these scales range between .58 for social undesirability to .88 for mistrust / abuse. More information on reliability coefficients in this study is presented in Table 1. Since all these scales correlate very well, the total score for all 16 scales gives a global maladaptive/irrational beliefs measure from Young's maladaptive schemas perspective.

The Attitude and Beliefs Scale-2 (ABS-2) (DiGiuseppe, Leaf, Exner, & Robin 2007) is a 72-item self-report scale designed to measure the endorsement of irrational and rational beliefs. Its scope is to measure both core cognitive processes proposed by Ellis (i.e., DEM; AWF; LFT, SD) and the content of the beliefs (i.e., approval, achievement, and comfort). For the present research, we were only interested in the core cognitive processes measured by this scale. Only items worded in irrational terms were taken into account, since there was no correlation between participants' answers to rationally and irrationally worded items. The internal consistency coefficients for the four scales range between .51 and .70 and they are presented in Table 1. The decision of looking at irrationality and rationality scales independently is in accord with Ellis' binary model of distress (1994) and with other suggestions in the literature (see Szentagotai & Kallay, 2006) on prerequisites for a rigorous test of REBT/CBT theories.

The General Attitudes and Beliefs Scale – Short Version (GABS-SV) (Lindner, Kirkby, Wertheim, & Birch 2007) is a short and slightly different version of the ABS described above. The instrument was selected to measure irrational beliefs related to six different content areas: achievement, approval, comfort, justice, self and others. In addition, the scale includes a very short index of rational beliefs. Internal consistency values for these scales range from .59 to .80, as can be seen in Table 1.

#### *Procedure*

Participants filled in the four instruments in a one-hour paper and pencil session, in a collective context, involving groups of 15 to 20 participants. All responses are kept confidential. Participants signed an informed consent form prior to the completion of questionnaires.

### **Results**

Table 1 presents the means, standard deviations, reliability estimates, and correlations for all variables of interest in this study. In order to determine a specific pattern of association among included variables, we used a canonical correlation approach. This technique is a general extension of multivariate regression analysis. While the latter focuses on establishing a relationship between multiple predictors and a metric criterion, canonical correlation simultaneously predicts multiple numerical criteria from multiple predictors (Hair, Anderson, Tatham, & Black, 1998).

Before presenting the results of the canonical correlation analysis, I will briefly describe the meaning of cross-canonical loading coefficients for readers less familiar with the canonical correlation technique. They reflect the zero order correlation between a specific variable and a particular linear combination of variables from the other set. For instance, a loading of .54 represents the association between the observed score on the Abandonment scale and a composite score resulted from a linear combination of the five factor personality model, where mainly agreeableness and emotional stability are negatively linked to Abandonment ( $ps < .01$ ).

#### *The Five-Factor Model of Personality and Maladaptive Schemas*

In the first canonical correlation we established the relationship between the five factor model of personality as criteria, and the sixteen maladaptive schemas proposed by Young (Young et al., 2003).

**Table 2.** Canonical cross-loadings between personality set and schemas set

	Canonical Functions			
	I	II	III	IV
1. MS Maladaptive schemas – YSQ-L2				
1.1. <i>Disconnection and rejection</i>				
ED – Emotional deprivation	<b>.36</b>	-.04	-.04	.07
AB – Abandonment	<b>.54</b>	<b>.28</b>	.08	.07
MA – Mistrust / abuse	<b>.68</b>	.05	.03	.04
SI – Social isolation	<b>.55</b>	.11	.03	.05
DS – Defectiveness / shame	<b>.45</b>	.05	.09	.14
1.2. <i>Impaired autonomy and performance</i>				
FA – Failure to achieve	<b>.31</b>	<b>.39</b>	.10	.18
DI – Dependence and incompetence	<b>.28</b>	<b>.34</b>	<b>.22</b>	.10
VH – Vulnerability to harm and illness	<b>.50</b>	<b>.32</b>	-.01	.01
EM – Enmeshment / protectionism	<b>.25</b>	<b>.33</b>	-.01	.07
1.3. <i>Impaired boundaries</i>				
ET – Entitlement and grandiosity	<b>.61</b>	-.03	.00	-.19
IS – Insufficient self-control / self-discipline	<b>.47</b>	.16	<b>.32</b>	-.16
1.4. <i>Other-directedness</i>				
SB – Subjugation	<b>.42</b>	<b>.21</b>	.04	<b>.22</b>
SS – Self-sacrifice	<b>.23</b>	<b>.38</b>	.01	.11
SU – Social undesirability / approval seeking	.11	<b>.40</b>	-.15	-.11
1.5. <i>Over-vigilance and inhibition</i>				
EI – Emotional inhibition	<b>.48</b>	.16	.03	-.02
US – Unrelenting standards	<b>.34</b>	.05	-.17	<b>-.23</b>
2. Personality				
E – Extraversion	-.18	-.07	.13	<b>-.34</b>
A – Agreeableness	<b>-.75</b>	.15	.00	.06
C – Conscientiousness	-.05	.15	<b>-.53</b>	.01
ES – Emotional stability*	<b>-.33</b>	<b>-.59</b>	-.07	-.03
O – Openness	-.13	.01	-.02	<b>-.36</b>
Canonical correlation	<b>.79</b>	<b>.67</b>	<b>.54</b>	<b>.46</b>
Squared canonical correlation	.62	.44	.29	.21
Redundancy index for schema set	.31	.14	.05	.08
Redundancy index for personality set	.14	.08	.06	.05

N = 154, bold type for  $ps < .01$ .

Based on the three criteria suggested by Hair et al. (1998) – the level of significance of each extracted canonical function, the magnitude of the canonical correlation, and the redundancy index as a measure of the percentage of variance accounted for – two out of four canonical functions were extracted.

The first canonical function establishes a link between two personality traits – agreeableness and emotional stability and most of the maladaptive schema scales. In particular, low agreeableness and low emotional stability (high neuroticism) are linearly linked with most maladaptive schemas, and more specifically, with schemas related to disconnection and rejection and schemas related to impaired boundaries. These results suggest that a higher level of maladaptive schemas can be found in individuals scoring lower on both agreeableness and emotional stability scales.

The second extracted canonical function demonstrates that emotional stability shares additional common variance with maladaptive schemas. In

particular, low emotional stability (high neuroticism) is directly linked with schemas referring to impaired autonomy and performance, and to other-directedness.

Although not significant from the point of view of the above mentioned criteria, a third canonical functions suggests potential links between low levels of conscientiousness and higher scores on scales related to dependence and incompetence, and to insufficient self-control/ self-discipline, since the canonical function was statistically significant.

*The Five-Factor Model of Personality and Irrational Beliefs*

The next canonical correlation analysis looked at the relationship between the personality traits and various irrational beliefs conceptualized within Ellis' framework.

Table 3 sums up three such analyses that examine the link between personality and: (1) the content (area) of irrational beliefs; (2) the cognitive processes involved in irrational thinking; (3) the global level of irrationality. Only one canonical function was extracted in each of the three cases.

**Table 3.** Canonical cross-loadings between personality set and irrational beliefs set

	Function	Function	Function
	I	I	I
GABS SV irrational scales			
Ach – Achievement	.12		
App – Approval	.04		
Com – Comfort	<b>.25</b>		
Just – Justice	<b>.32</b>		
Self	.17		
Others	.15		
ABS-2 irrational scales			
DEM		-.08	
LFT		<b>-.37</b>	
AWF		<b>-.25</b>	
SD		<b>-.27</b>	
Irrationality			
YSQ-L2 total score			<b>-.65</b>
GABS SV irrational scale			<b>-.30</b>
3. Personality			
E – Extraversion	-.10	.08	.17
A – Agreeableness	<b>-.24</b>	.15	<b>.50</b>
C – Conscientiousness	.17	-.04	.01
ES – Emotional stability*	<b>-.32</b>	<b>.40</b>	<b>.50</b>
O – Openness	-.09	.10	.09
Canonical correlation	<b>.40</b>	<b>.41</b>	<b>.66</b>
Squared canonical correlation	.16	.16	.44
Redundancy index for IB set	.10	.17	.39
Redundancy index for personality set	.04	.04	.11

N = 154, bold type for ps < .01.

The results converge in similar patterns, individuals with low levels of emotional stability and low levels of agreeableness displaying the highest level of irrational beliefs. An interesting finding is that from a process perspective, only low emotional stability (high neuroticism) is consistently linked to cognitive processes such as LFT, AWF and SD, while DEM is not linked to any of the personality traits.

*The link between the Young's maladaptive schemas and Ellis' irrational Beliefs*

A secondary goal was to establish the empirical relationship between Ellis' core irrational beliefs and Young's maladaptive schemas. In both cases only one significant canonical function was extracted while relating maladaptive schemas to the contents or to cognitive processes involved in irrational beliefs. However, in order to reflect a potential weaker link between some content aspects of irrational beliefs to irrational schemas, a second canonical function is presented.

The results suggest a common background for the two sets of variables. For instance, if we look at the last column of Table 4, we can see that all processes but demandingness (DEM) are positively linked to all maladaptive schemas ( $r = .16$ ,  $ps < .05$ ).

**Discussion and conclusions**

The main goal of the current study was to demonstrate the pattern of correlations between the most common model of personality – the five-factor model – and various types of maladaptive cognitions as described by CBT theories. However, considering that we used a canonical correlation approach, none of our findings can be discussed from a cause-effect perspective.

Our data suggests that low levels of emotional stability are the most highly related to maladaptive schemas and to various types of irrational beliefs. In addition, a decreased level of agreeableness added to a low level of emotional stability reflects specific cognitions that are closely linked to externalizing psychopathology, based on the activation of cognitions related to rejection of others and impaired boundaries.

Despite the established links between personality traits and certain irrational beliefs and maladaptive schemas, authors such as Mischel and Shoda (1995) state that it would be a mistake to treat various cognitions such as expectancies as generalized trait-like dispositions, removed from the specific contexts in which they function. On the other hand, in our opinion, individual personality traits can be conceptualized as sets of consistent behavioral outcomes resulting from a specific set of beliefs. For example, people who score low on agreeableness are more argumentative, more competitive, and in general more prone to enter into conflicts with other people. The reason for their behavior could

**Table 4.** Canonical cross-loadings between schemas set and irrational beliefs set

	Function	Function	Function
	I	II	I
1. MS Maladaptive schemas – YSQ-L2			
<i>1.1. Disconnection and rejection</i>			
ED – Emotional deprivation	.13	-.11	.20
AB – Abandonment	<b>.34</b>	.16	<b>.49</b>
MA – Mistrust / abuse	<b>.22</b>	.11	<b>.34</b>
SI – Social isolation	.14	.00	<b>.28</b>
DS – Defectiveness / shame	<b>.33</b>	-.01	<b>.41</b>
<i>1.2. Impaired autonomy and performance</i>			
FA – Failure to achieve	<b>.42</b>	-.01	<b>.49</b>
DI – Dependence and incompetence	<b>.41</b>	.11	<b>.46</b>
VH – Vulnerability to harm and illness	<b>.29</b>	.18	<b>.36</b>
EM – Enmeshment / protectionism	<b>.33</b>	.09	<b>.38</b>
<i>1.3. Impaired boundaries</i>			
ET – Entitlement and grandiosity	.03	<b>.30</b>	.20
IS – Insufficient self-control / self-discipline	.14	.19	<b>.27</b>
<i>1.4. Other-directedness</i>			
SB – Subjugation	<b>.30</b>	.08	<b>.36</b>
SS – Self-sacrifice	.08	<b>.21</b>	.17
SU – Social undesirability / approval seeking	<b>.28</b>	-.05	<b>.39</b>
<i>1.5. Overvigilance and inhibition</i>			
EI – Emotional inhibition	<b>.23</b>	.20	<b>.30</b>
US – Unrelenting standards	.01	.15	.19
1.GABS SV irrational scales			
Ach – Achievement	.05	.00	
App – Approval	<b>.33</b>	.19	
Com – Comfort	<b>.38</b>	.03	
Just – Justice	-.01	<b>.41</b>	
Self	<b>.49</b>	-.04	
Others	.04	.02	
2. ABS-2 irrational scales			
DEM			.09
LFT			<b>.28</b>
AWF			<b>.37</b>
SD			<b>.55</b>
Canonical correlation	<b>.55</b>	<b>.51</b>	<b>.57</b>
Squared canonical correlation	.31	.25	.33
Redundancy index for maladaptive schema set	.07	.02	.12
Redundancy index for irrational beliefs set	.08	.03	.23

N = 154, bold type for ps < .01.

be a set of various beliefs such as efficacy beliefs, expectancy (outcome) beliefs or self-defensive (value) beliefs. For instance, a combination of expectancy beliefs (i.e. “if you are too nice, people will take advantage of you”; “do it to them before they do it to you”) and value beliefs (i.e. “it is not important to be liked by others”, “justice and respect are very important values to me”, “arguing is good”) could lead to an antagonistic behavior.

As Langston and Sykes (1997) argue, one major shortcoming of the Big Five model of personality is its lack of a theory of proximal causal mechanisms to suggest how one might modify one’s trait. By adopting a cognitive view on

personality, we could change this status quo, by studying mechanisms of change in an analogous way to those researched in CBT.

A secondary aim of this research was to establish a link between two alternative ways of conceptualizing dysfunctional cognitions, namely Ellis' perspective (i.e. irrational beliefs) and Young's view (i.e., maladaptive schemas).

In terms of core cognitive processes as proposed by Ellis (1994), all measured aspects but DEM were positively linked to Young's maladaptive schemas ( $|r| \geq .16$ ,  $p < .05$ ). Moreover, if SD is linked to almost all maladaptive schemas, LFT is mainly related to schemas pertaining to categories referring to other-directedness and impaired autonomy and performance, while AWF is linked to most schemas excepting those that represent the core schemas for other-directedness.

Based on these findings and on David, Ghinea, Macavei, and Kallay's (2005) results who found that DEM is linked to a higher degree to primary appraisal, while SD, AWF, and LFT are mainly linked to secondary appraisal, we suggest that: (1) Young's maladaptive schemas are also linked to secondary appraisal in terms of Lazarus approach (1991); (2) there is a qualitative distinction between DEM as a cognitive process involved in irrational beliefs and the other three types of cognitive processes, as previously suggested by DiGiuseppe, Leaf, Exner and Robin (1988).

In terms of belief content, our results suggest that need for achievement and other-downing are less well represented contents within Young's maladaptive schemas, while approval and comfort are among the best represented contents. Another possibility explaining this finding is that there is only a partial overlap regarding the belief content of the two scales, i.e. achievement need is not well represented in the YSQ, while a potential need such as the need for structure (closure, order, control) could be underrepresented in the ABS-2 and GABS-SV.

The presented findings need to be replicated by future research. In particular, we are concerned with the following findings in the study: (1) low internal consistency coefficients for irrational beliefs as measured by some scales of the ABS-2 and the GABS-SV; (2) the unexpectedly high level of association between the agreeableness scale and some of the maladaptive schemas measured by the YSQ. Yet, the latter result is consistent with Axelrod, Widiger, Trull and Corbitt's observation (1997) that the Agreeableness versus Antagonism factor of the Five-Factor Model is present in several personality disorders.

Future research could validate these tentative conclusions. In addition, it would be of particular interest to implement belief-change interventions as a way of investigating if these changes will alter personality trait scores. Evidence in this direction would help clarify the nature of the relationship between personality and cognitions, particularly cognitions and schemas related to secondary appraisal mechanisms.

## Articles Section

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