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Self-consciousness and psychological distress: A study using the Greek SCS

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Abstract

This study examined the psychometric properties and factor structure of the Greek Self-Consciousness Scale (SCS), and investigated the role of self-consciousness (SC), and personality in psychological distress. Factor analytic results partially supported the factor structure of the SCS. Self-consciousness, particularly the Self-reflectiveness aspect of private-SC, was widely implicated in psychological symptomatology. Neuroticism may exacerbate this association, whereas other aspects of personality, such as Openness and Extraversion may buffer the role of SC in distress.
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1. Introduction

Self-consciousness (SC) is the dispositional tendency to attend to aspects of the self, such as emotions and public image (Panayiotou, 2004). Fenigstein, Scheier, and Buss (1975) developed the Self-Consciousness Scale (SCS) to assess it, which contains 23 items forming 3 dimensions:

Private Self-Consciousness (PrSC, 10 items), Public Self-Consciousness (PuSC, 7 items) and Social Anxiety (SA, 6 items). PrSC refers to attention directed to covert or personal aspects of the self, such as feelings and beliefs; PuSC describes attention to public aspects of the self, such as appearance and manners. Finally, SA represents apprehensiveness about negative evaluation. The instrument has demonstrated good construct validity in many cultures (e.g. Chang, 1998; Nystedt & Smari, 1989; Ruganci, 1995).

High levels of SC characterise many psychopathological states. PuSC is involved in social anxiety, whereas PrSC has been implicated in depression, as it heightens awareness of negative affect (Pyszczynski & Greenberg, 1987; Wood, Saltzberg, & Goldsamt, 1990; Woody, 1996; Woody & Rodriguez, 2000). The debate is still ongoing as to whether SC constitutes a non-specific feature, common to many disorders (Ingram, 1990) or a specific feature of only some disorders (Jostes, Pook, & Florin, 1999).

Self-consciousness is also associated with normal traits. Highly self-conscious individuals are aware of their attitudes (Gibbons, 1983; Scheier, 1980) and prone to dissonance effects (Gibbons & Wright, 1983; Scheier & Carver, 1980). Being aware of one's feelings and thoughts is essential to well-being as part of self-regulation (Lischetzk & Eid, 2003; Trudeau & Reich, 1995).

Hence, SC presents a paradox: How can the same construct be predictive of both psychopathology and well-being? Researchers are converging on the idea that SC may represent a multi-faceted construct with several underlying dimensions that are moderately correlated but represent different personality attributes. Trudeau and Reich (1995) found that whereas psychological mindedness is predictive of well-being, PrSC negatively predicts happiness. They concluded that PrSC may represent excessive rumination and self-scrutiny, which distract one from healthy social functioning. Similarly, Trapnell and Campbell (1999) proposed that PrSC may reflect two different types of motivation, i.e. *rumination* (motivated by perceived threat) and *reflection* (motivated by intellectual curiosity about the self).

Controversy still remains about the sub-factors of SC. The distinction between PrSC and PuSC (Buss, 1980) has received criticism by Wicklund and Gollwitzer (1987) who do not consider that PuSC measures changes in the direction of attention at all, but rather reflects emotional aspects of personality, such as social dependency. Next, the unidimensionality of the public/private scales has been questioned (Watson, Morris, Ramsey, Hickman, & Waddell, 1996), since the exploratory factor analyses (EFA) used to derive them do not exclude items that poorly fit the construct (Mittal & Balasubramanian, 1987).

Confirmatory Factor Analyses (CFA) have in part supported that PrSC may in fact be two-dimensional, including a component of Self-Reflectiveness (SR) and one of Internal State Awareness (ISA—Burnkrant & Page, 1984; Nystedt & Ljungberg, 2002; Piliavin & Charng, 1988), and that PuSC may be divided into Style and Appearance Consciousness (Mittal & Balasubramanian, 1987; Watson, Hickman, Morris, Stutz, & Whiting, 1994). The ISA versus SR distinction is further supported by validation data, showing that they are predictive of different personality features: SR predicts shame, guilt and social anxiety, whereas ISA predicts self-awareness and mental health (Watson et al., 1996). Thus, whether SC predicts well-being or psychopathology may depend on other factors, such as underlying normal personality dimensions. The association between SC and psychopathology, may be attributed to aspects of SC reflecting Neuroticism (Flett & Blankstein, 1987; Monfries & Kafer, 1994), whereas the healthy correlates of SC may be due to aspects reflecting Openness to Experience (Lischetzk & Eid, 2003; Reeves, Watson,

Ramsey, & Morris, 1995; Turner, Scheier, Carver, & Ickes, 1978). SC paired with Neuroticism may increase worry and self-preoccupation (Trapnell & Campbell, 1999), but coupled with Openness it may enhance intellectual curiosity and self-knowledge. Similarly, conditions where one anticipates success or failure in coping with a stressor could determine whether one's SC will lead to depression and anxiety or effective coping (Frone & McFarlin, 1989).

The purpose of this study is twofold: First, it examines the factor structure of the Greek SCS, adding to the discussion regarding the dimensionality of the construct, by examining the fit of various models using EFA and CFA. It also provides evidence regarding the concurrent validity of the instrument in relation to the Greek NEO-FFI (Panayiotou, Kokkinos, & Spanoudis, 2004) and the Brief Symptom Inventory (BSI; Derogatis, 1993). Secondly, it explores the association between SC, personality and psychological symptoms, examining whether SC is conducive to well-being or to psychological distress, and adding to the debate about the specificity of SC in psychological disorders (Ingram, 1990).

With regards to the later goal, we anticipated an association between all SC dimensions and Neuroticism, and between PrSC and Openness. We also expected all SCS scales to be associated with most BSI symptoms, if SC represents a non-specific psychopathological feature (Ingram, 1990). Self-Reflectiveness should be particularly predictive of distress as suggested by prior research. It was predicted that the association between psychological symptomatology and SC would be mediated by personality, (Neuroticism), whereas traits such as Openness and Extraversion would play a protective role against psychological distress.

2. Method

2.1. Participants

Participants were 519 Cypriots who had participated in three previous studies that included the SCS: The first involved student-teachers ($N = 142$) and the second married/dating couples ($N = 254$). The third was conducted for convergent validation of the SCS, with 123 individuals who additionally took the Greek NEO-FFI and BSI. Demographic characteristics of the full sample were: 188 males, 331females ranging in age from 15–71, ($M = 26.08$, SD = 10.89). Seventy percent had at least some college education.

2.2. Measures

The 23-item version of the SCS (Fenigstein et al., 1975) was translated into Greek by two bilingual psychologists using front and back translation. The instrument maintains the original scoring system.

The Greek NEO-FFI was administered in the convergent validation study (Costa & McCrae, 1992; Panayiotou et al., 2004) which measures five dimensions of personality, i.e. Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness. The Greek instrument has 20 items that fail to load on anticipated factors. Only correctly loading items were used to compute subscale scores in this study. The BSI (Derogatis, 1993; Loutsiou-Ladd, Panayiotou, & Kokkinos, 2005) was used to measure distress caused by psychological symptoms. It covers 9

symptom dimensions: somatization, obsessive compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism.

3. Results

3.1. SCS psychometric properties and group differences

Table 1 shows the means, standard deviations and Cronbach's α reliability coefficients for each SCS subscale. For the entire scale, $\alpha = .80$. Subscale reliabilities were comparable to those in the initial US sample. The subscales are known to be inter-correlated, as was replicated here: PrSC with PuSC, $r = .52$, $p < .01$, PrSC with SA, $r = .12$, $p < .05$, PuSC with SA, $r = .36$, $p < .01$.

One-way ANOVAs were used to examine gender differences. Women scored significantly higher than men on all SCS subscales: PrSC $F(1, 516) = 17.07$, $p < .0001$, PuSC, $F(1, 516) = 16.99$, $p < .0001$, and SA, $F(1, 516) = 28.45$, $p < .0001$. Three groups were also formed and compared, which included (a) ages under 25 (teenagers and young adults, $N = 340$), (b) 25–50 (mature adults, $N = 154$) and (c) those over 50 (ageing adults, $N = 24$). There were significant differences in SC among the groups: the teenage/young group scored significantly higher on PrSC, $F(2, 514) = 10.14$, $p < .0001$ than both other groups, and on PuSC and SA compared to the mature adults, $F(2, 514) = 9.84$, $p < .0001$, and $F(2, 514) = 16.13$, $p < .0001$, respectively.

3.2. Exploratory and confirmatory factor analyses

To examine the factor structure of the Greek SCS an exploratory factor analysis was conducted with a constrained 3-factor solution, using varimax rotation. The solution explained 38.53% of the variance. All SA items loaded on their anticipated factor, as did 5 of the PuSC, and 6 of the PrSC items. Only 5 items loaded on inappropriate factors: Items 7, 5 and 18 loaded on the PuSC factor when they theoretically belong to PrSC, whereas items 2 and 21 loaded on PuSC when they belong to PrSC. Thus, EFA results show that the SCS maintains, for the most part, its factor structure in Greek.

In order to replicate the theorized 2-factor solutions of PrSC and PuSC, each was separately subjected to EFA with specified two-factor solutions. For PrSC, the resulting solution explained 37.85% of variance, and reflected somewhat the proposed ISA versus SR distinction: All three ISA

Table 1
Psychometric properties and internal reliability of the Greek SCS

	Private	Public	Social Anxiety
Mean (all subjects)	3.44	3.50	2.84
SD (all subjects)	.55	.69	.91
Alpha	.63	.69	.80
Mean (males)	3.31	3.34	2.56
SD (males)	.55	.72	.87
Mean (females)	3.51	3.60	2.99
SD (females)	.53	.65	.90

Table 2
Underlying dimensions of private self-consciousness from EFA

Item	PrSC Dimensions	
	Internal State Awareness	Self-Reflectiveness
13	**.61**	
3	**−.59**	
9	**−.54**	
1	.53	
15	.51	.33
22	**.51**	
20	**.44**	.33
7		**.71**
18		**.68**
5	.35	**.62**

Note: Items in bold are the ones that theoretically belong to the respective dimension.

and 3 of the SR items loaded on their anticipated factors (see Table 2). To the contrary, the Appearance and Style Consciousness distinction, of PuSC (Mittal & Balasubramanian, 1987) was not supported.

The raw data were also subjected to CFA on the covariance matrix using M-plus 2.02 (Muthén & Muthén, 2001). The model parameters were estimated using maximum likelihood methods. Twenty cases were excluded due to missing data. Normality of the item distributions was assessed through examination of histograms using SPSS. Most items were moderately negatively skewed, but no outliers were identified. Three models were tested starting with the original 3-factor model. Then the 4-factor model, specifying the two dimensions of PrSC, and the 5-factor model, (additionally specifying the two dimensions of PuSC) were examined. In all cases, factors were allowed to correlate with each other but each item was allowed to load on only one factor. Table 3 shows the chi-square statistics and fit indices for each model. All calculated fit indices suggest that the 3 rival models fit the data about equally. CFI was .74–.76, which is somewhat lower than .90, the value typically considered evidence of good fit (Mueller, 1996), but partially supporting each of the examined models. A χ^2/df < 3.0 is also considered a good indicator of model fit (Kline, 1998). None of the tested models met this criterion (all χ^2/df were greater than 3.0). Additional parameter estimates of model fit approached, but fell short of acceptable levels: RMSEA was .07 for all models tested and SRMR was .07–.08, which is close, but falls short of, the cut-off

Table 3
Fit indices for the models tested with CFA

	χ^2	df	CFI	RMSEA	SRMR
3-Factor model	781.79	227	0.74	0.07	0.08
4-Factor model	745.77	224	0.76	0.07	0.07
5-Factor model	733.51	220	0.76	0.07	0.07
Private	447.87	45	0.75	0.08	0.06
Public	443.84	21	0.91	0.07	0.05
Social Anxiety	743.66	15	0.97	0.07	0.03

Table 4
Standardized factor loadings for the three rival models obtained from CFA, where each item is allowed to load on only one factor

	3-Factor model			4-Factor model			5-Factor model	
	SCS Item	StdYX		SCS Item	StdYX		SCS Item	StdYX
PU	SCS2	0.365	PU	SCS2	0.363	AC	SCS11	0.714
	SCS21	0.304		SCS21	0.297		SCS17	0.299
	SCS14	0.613		SCS14	0.613		SCS21	0.288
	SCS11	0.580		SCS11	0.583			
	SCS17	0.245		SCS17	0.251	CS	SCS2	0.353
	SCS19	0.529		SCS19	0.525		SCS14	0.599
	SCS6	0.627		SCS6	0.631		SCS19	0.520
							SCS6	0.613
SA	SCS10	0.786	SA	SCS10	0.784	SA	SCS10	0.783
	SCS4	0.739		SCS4	0.744		SCS4	0.743
	SCS16	0.678		SCS16	0.674		SCS16	0.675
	SCS23	0.423		SCS23	0.425		SCS23	0.425
	SCS8	0.531		SCS8	0.527		SCS8	0.528
	SCS12	0.462		SCS12	0.468		SCS12	0.469
PR	SCS1	0.395	ISA	SCS3	0.378	ISA	SCS3	0.381
	SCS7	0.363		SCS9	0.329		SCS9	0.333
	SCS15	0.491		SCS13	0.541		SCS13	0.545
	SCS18	0.302		SCS20	0.449		SCS20	0.447
	SCS13	0.427		SCS22	0.272		SCS22	0.262
	SCS22	0.224						
	SCS9	0.208	SR	SCS1	0.396	PR	SCS1	0.397
	SCS3	0.299		SCS5	0.614		SCS5	0.613
	SCS20	0.429		SCS7	0.394		SCS7	0.389
	SCS5	0.574		SCS15	0.468		SCS15	0.477
				SCS18	0.345		SCS18	0.337

points recommended by Hu and Bentler (1999). Table 4, summarizes item loadings of each factor represented in the three rival models. Taken together, results from the CFA indicated that the three models approximate but do not adequately fit the data.

Because in the EFA several items cross-loaded on factors other than their own, the CFA was re-ran allowing for those cross-loadings. We first tested the 3-factor model by fixing all cross-loadings using the values obtained from the constrained 3-factor solution, in a complete model. Fit indices remained about the same, CFI = .75, RMSEA = .07, SRMR = .08, χ^2/df > 3.0. The 4-factor model was also tested, by fixing the cross-loadings using values from a constrained exploratory 4-factor solution run for this purpose. Fit indices did not improve, CFI = .77, RMSEA = .07, SRMR = .07, χ^2/df > 3.0. The 5-factor model was not tested, because it was not supported by EFA.

Separate CFAs were run to verify the unidimensionality of each SCS subscale, based on the assumption that each is defined by a single underlying latent variable (1 factor solution). Table 3 also shows chi-square and fit indices for these solutions. PuSC and SA scales showed good fit for unidimensionality. To the contrary the PrSC scale's assumed unidimensionality was not con-

firmed. These findings point to the conclusion that the overall relatively poor fit of the 3-, 4- and 5-factor solutions for the entire scale, may be attributed to the weak internal consistency of the PrSC scale (further verified by its low Cronbach's α).

Given that the models tested using CFA did not result in a satisfactory solution, it was deemed that the original theorized three-dimensional model might be the best representation of the Greek SCS. This is also supported by the fact that the constraint 3-factor EFA resulted in a theoretically acceptable solution. Thus, subsequent analyses were based on the original 3-factors.

3.3. Convergent validity

In terms of the correlations between the SCS scales and subscales and the Greek NEO-FFI and BSI, the most notable significant findings were as follows: PrSC was positively correlated with Neuroticism, Openness to Experience, and Extraversion, and with Obsessive Compulsive, Interpersonal Sensitivity, and Paranoid Ideation, with regards to symptoms. ISA was positively correlated with Openness and Extraversion but not with any symptoms. SR was positively correlated with Neuroticism, Openness and Extraversion and with Obsessive Compulsive, Interpersonal Sensitivity, and Psychoticism. PuSC was positively correlated with Neuroticism, Extraversion, Obsessive Compulsive, Interpersonal Sensitivity, Phobic Anxiety and Psychoticism. SA was positively correlated with Neuroticism, negatively with Conscientiousness and Extraversion, and positively with all symptoms except Somatization and Hostility. Neuroticism was positively correlated with all symptoms. Conscientiousness was negatively associated with Obsessive Compulsive, Interpersonal Sensitivity, Depression, Phobic Anxiety and Psychoticism. Openness was negatively correlated with Hostility; Extraversion with Depression and Phobic Anxiety. Finally, Agreeableness was negatively related to all symptoms except Obsessive Compulsive. It is noticeable that although PrSC was related to some types of symptoms, this appears to be fully explained by the SR sub-dimension, since ISA did not correlate with any symptoms.

3.4. Dimensions of SC and BSI symptoms

In order to further clarify the role of SC in symptomatology, a series of Multivariate Analyses of Variance (MANOVAs) was performed with the five SC dimensions (public, private, SA, ISA and SR) as the dependent variables, and levels of symptomatology as the independent variables. Subjects were divided for each symptom, based on the median, into high and low groups. In all cases, individuals who scored above the median on each symptom reported higher levels of SC compared to those scoring below the median (see Table 5). SC appears to be implicated in a wide range of symptomatology (except somatization). Social anxiety is the dimension mostly involved, whereas ISA does not differentiate between high and low scorers on any symptoms. Of the psychological symptoms, Obsessive Compulsive implicated most of the SC dimensions (except ISA).

Given the high correlations between Neuroticism and symptomatology, we examined any mediating effects of neuroticism in the relationship between SC and symptomatology. As Trapnell and Campbell (1999) proposed, SC may be related to psychopathology through a tendency to ruminate which is motivated by perceived threat, expected to characterise Neurotic individuals. The MANOVAs were rerun using Neuroticism as a covariate. In all cases, SC effects were no longer significant indicating that it is Neuroticism that accounts for the relationship between SC and

Table 5
F values (degrees of freedom in all cases were 1, 121) for differences in SC dimensions between individuals who scored above and below the median on each symptom

	Private	ISA	SR	Public	Social Anxiety
Somatization	ns	ns	ns	ns	ns
Obsessive compulsive	4.60[*]	ns	9.67[*]	18.01[**]	16.40[**]
Interpersonal sensitivity	5.10[*]	ns	5.41[*]	5.60[*]	15.30[**]
Depression	3.89[*]	ns	ns	7.73[*]	11.75[*]
Anxiety	4.57[*]	ns	ns	7.33[*]	11.82[*]
Hostility	ns	ns	ns	ns	11.88[*]
Phobic anxiety	ns	ns	ns	7.69[*]	14.40[*]
Paranoid ideation	ns	ns	ns	ns	11.57[*]
Psychoticism	ns	ns	3.79[*]	4.18[*]	11.35[*]

Note: ns = non-significant.
[*] Significant at the $p \leqslant .05$ level.
[**] Significant at the $p \leqslant .01$ level.

symptoms. The only exception was Obsessive Compulsive where SR, $F(1, 120) = 4.95$, $p < .05$, and PuSC, $F(1, 120) = 9.38$, $p < .05$, continued to be significant, perhaps indicating that these types of SC contribute unique variance to this symptom.

Similarly, because dimensions of SC (particularly PrSC) were significantly correlated with Openness, Extraversion and Conscientiousness, the same MANOVAs were re-conducted covarying for each, to examine whether these personality factors also act as mediators. In the case of both Openness and Extraversion the MANCOVAs indicated an augmentation in the differences in SC between high and low scorers on BSI symptoms. Specifically, with all symptoms (except Somatization), when covarying for Openness, high scorers were significantly higher on SR. In the case of Paranoid Ideation and Psychotic symptoms, PrSC also now emerged as significantly higher in high scorers. After covarying for Extraversion, on all symptoms except Somatization, Phobic Anxiety and Paranoid Ideation, SR emerged as significantly higher in high scorers. The effects of PuSC were also enhanced in all cases except for Hostility and Phobic Anxiety. In Depression and Anxiety, ISA now appeared as significantly higher for those scoring above the median. The effects of PrSC were also enhanced in several cases (except for Depression, Hostility, Phobic Anxiety and Paranoid Ideation). To the contrary, for all symptoms, the difference between high and low scorers in SA decreased. No significant differentiation in the relationship between SC and symptoms emerged after covarying for Conscientiousness. These results point to a possible buffering role of personality traits such as Openness and Extraversion, which mitigate the impact of SC on an individual's psychological well-being.

4. Discussion

This study examined the psychometric properties of the Greek SCS, exploring the association between SC, personality and psychological symptoms. CFA did not reveal the original three-factor SCS structure, which however emerged when a constrained exploratory 3-factor solution was examined through EFA. These findings, along with the rest of its psychometric properties verify

that the Greek SCS is appropriate for use with Greek-speaking samples. While PrSC may not reflect a unified latent construct, evidence was only moderately supportive of its division into ISA and SR. EFA lent some support to this theoretical postulation particularly with regards to the ISA dimension.

PrSC correlated with Neuroticism, Openness and Extraversion, which may point to seemingly contradictory dimensions of personality. The relationship between PrSC, Neuroticism and Openness is a reliable finding (McCrae, 1993). Trapnell and Campbell (1999) attribute this result to the fact that PrSC items can be answered positively by individuals with each of these traits, but for different motivational reasons: Neurotic individuals are *concerned* about themselves because they are anxious and vigilant to changes in their internal states. To the contrary, individuals Open to Experience score high because they are intellectually *curious* about themselves. These underlying dimensions cannot easily be revealed by factor analysis because most items can draw either type of response. Thus PrSC is a complex construct that does not easily yield to a unidimensional conceptualization. Our correlational data revealed that only SR is related to Neuroticism, whereas both ISA and SR are related to Openness and Extraversion, supporting the assertion that it is only specific aspects of PrSC that predict negative affectivity. We additionally replicated the observation by Trapnell and Campbell (1999), that whereas PuSC and SA are both positively associated with Neuroticism, they represent different constructs; the former is positively associated with Extraversion, pointing to a "mildly affiliative" sort of Neuroticism, while the latter is negatively associated with it, indicating phobic avoidance.

SCS subscales showed meaningful correlations with psychological symptoms, lending support to their validity, and contributing to the debate regarding the paradoxical association of SC with both psychopathology and well-being. SA was positively related to all symptoms except somatization. PrSC showed small correlations with some symptoms whereas the ISA dimension was not related to any, probably indicating that it is an aspect of SC conducive to mental health. To the contrary, few but low correlations emerged between the SR dimension and psychological symptoms, especially obsessive compulsive, interpersonal sensitivity and psychoticism. It is interesting that all of these symptoms represent preoccupation with negative thoughts (i.e. internal experiences). These findings are in agreement with Ruipérez and Belloch (2003), who did not find support for the paramount involvement of PrSC in psychopathology, but showed an association between SR, anxiety and depression. Finally, PuSC was also associated with obsessive compulsive and interpersonal sensitivity, perhaps due to the heightened concern about the self's relation to others.

Subsequent analyses further explored the obtained correlations between SC and psychopathology by controlling for the effects of personality. Individuals with high symptomatology on all dimensions (except somatization) reported higher levels of SC compared to low scoring individuals. Thus, our findings may be in accord with Ingram's (1990) assertion that SC may be a common feature of psychological disorders.

When the effects of Neuroticism were controlled for, all SC differences between high and low symptom individuals were no longer significant, indicating that it is actually Neuroticism that accounts for the relationship between SC and psychological symptoms. These findings are compatible with Trapnell and Campbell (1999) who suggest that some aspects of SC may be related to psychopathology through rumination. To the contrary, when Openness and Extraversion were controlled for, differences on SC between high and low scorers on the various symptoms were

enhanced, particularly in the case of SR, pointing to a possible buffering role of positive personality traits, which mitigate the impact of SC on an individual's well-being. Further research could focus on the specific paths through which these personality traits exert their protective role, perhaps through enhancing coping mechanisms.

In sum, the Greek SCS shows adequate psychometric properties for use with Greeks. Self-consciousness may be a non-specific feature common to many psychological symptoms. The noxious effects of some SC variants may be due to their association with Neuroticism, whereas, positive personality traits may decrease the impact of SC and even allow it to act as a healthy aspect of the self. It's as if personality acts as a filter through which self-consciousness takes on a positive or negative quality modifying its impact on psychological well-being.

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