

## RELATION BETWEEN ANDROGYNY AND DEPRESSION

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**ABSTRACT.** The present paper subscribes to recent preoccupations regarding the role and implications of gender identity formation upon adaptation and upon pathology implicitly.

In the present study we proposed to investigate mainly the relation between androgyny and depression in the context of two different cultures (Greece and Great Britain). In the design of our study we have included a series of variables which we assumed might have an influence upon this relation, as we have deduced from the specialized literature analysis: the gender of the participants, their sexual orientation and age.

*Keywords: androgyny, depression, gender identity, sexual orientation*

### 1. Introduction

Among all the psychiatric and clinical psychopathological semiotics notions, that of depression is the most frequently used and it includes an extremely varied clinical phenomenology, from mood swings compatible with “normal” life to psychotic manifestations, which evolve together with the disturbance of the affective state and with the striking diminution of cognitive, psychomotor and perceptive possibilities.

Therewith, depression presents a distinct sense and is differently defined according to the psychological orientation under which it is seen. Thus:

- Psychoanalysis sees depression as a diversion of aggressiveness towards the self;
- The behavioral theory considers depression a conditioning defect or a lack of learning ability, supervened after some repeated failures;
- Academic psychology appreciates depression as a cognitive disorder which determines a negative image of the self and a pessimistic, distorted vision of the world.

Depressive moods represent a qualitative change as opposed to the previous ascertainable functioning, “most of the day, almost every day” during at a minimum two weeks. It is also mentioned that this depressive mood is indicated either by subjective narration, either by observation from others.

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There is a series of instruments by which depression can be assessed. The main methods are clinical interviews and scales / questionnaires. BDI-II (Beck, Ward, Mendelson, Mock, Erbaugh 1961; Beck, Emery, Greenbbreg 1985; Beck, Steer & Brown, 1996) is one of the most utilized questionnaires in the screening of depression.

The studies which have investigated the relation between androgyny and depression have revealed the fact that androgynous persons were less depressive than masculine or feminine persons. Cheng (2005) suggests the hypothesis that this fact is due to a better flexibility in utilizing the strategies for coping with stressful situations. Androgynous persons did not have a wider repertoire of strategies, but managed to vary the coping strategies in accordance with situation controllability, regardless of the gender role that had been adopted. On the other hand, masculine or feminine persons had the tendency to vary their strategies according to the gender role they played and irrespectively of the situation controllability.

Some theoretical models suggest that femininity would protect people against depression, against interpersonal stress, and masculinity would prevent depressive symptoms as a reaction to the performance-related stress. As opposed to these, the approach of the schemes of the self implies the fact that women or feminine persons are especially vulnerable to interpersonal stress, while men or masculine persons are especially vulnerable to performance-related stress (Bem, 1975; Beck, Emery, Greenbbreg, 1985).

Conversely, the masculinity model suggests the fact that masculinity, not femininity, is associated with a favorable adaptation regarding all types of negative events.

Cheng (2005) observed that both masculinity and androgyny *correlate negatively with depression*. Androgynous *coping strategies* were associated with a better well-being than instrumental strategies (Bussey, 1983, Bussey, Bandura, 1999). In a study regarding *aggressiveness*, found that androgynous persons were *the most adapted*, being less aggressive and more assertive (Fergusson, Horwood, Beautrais, 1999).

## 2. METHODOLOGY

### 2. 1. Objectives and Hypothesis

A first objective of our study was the investigation of the factors which contribute to the variance of the scores in the *Bem Sex Role Inventory* (BSRI). In this sense, we have taken into consideration the ethnicity of the participants, the biologic sex and sexual orientation. We expect that the gender of the participants be one of the important factors, in the sense that *a bigger number of male participants will have high scores in masculinity and a bigger number of female participants will have high scores on the femininity scale*. (hypothesis 1 a) In what concerns the scores which are classified as androgyny, we assume that *there will be no significant differences between men and women regarding the number of persons categorized as androgynous* (hypothesis 1 b).

As a part of the same objective of our study we desire the investigation of the hypothesis according to which a bigger number of persons having a homosexual sexual orientation will have higher scores in androgyny, while heterosexual persons will be rather classified as masculine or feminine at the *BSRI*. (hypothesis 2)

There should not be any major difference between participants coming from the two different countries regarding the variant of the scores in androgyny (hypothesis 3).

Since after the age of 25, sexual orientation is quite steady, we do not expect significant differences regarding the number of androgynous persons within the different age categories. (hypothesis 4)

A second objective of the present study consists of investigating the relation between the previously mentioned variables (nationality, sex, sexual orientation, androgyny) and the mood of the participants, more precisely their score in depression measured with BDI-II, the well-known inventory for depression suggested by Beck and his collaborators.

Due to the fact that the majority of the studies indicate differences in the incidence of severe depression between men and women, we appreciate that these differences will manifest themselves in our study as well, women generally recording a higher incidence of depression than men. (hypothesis 5)

Moreover, we consider that there will be differences between heterosexual and homosexual persons concerning the scores in depression, in the sense that homosexuals will have higher scores than heterosexuals in this variable. (hypothesis 6)

Considering the depression prevalence rates in Greece and Great Britain stipulated in various studies, we estimate that there will be differences between the participants in our study from the two countries, in the sense that English persons will have higher scores in depression than Greeks. (hypothesis 7)

Weighting these data from the literature, we consider that there will occur differences between androgynous, masculine and feminine persons regarding the score in depression. More specifically, androgynous and masculine persons will have lower scores in depression than feminine persons. (hypothesis 8)

## **2. 2. Participants**

The participant lot was formed of 1000 persons with ages between 25 and 45 years old, randomly selected from different economic and social environments, students, employees, as well as unemployed persons, of very different professions (teachers, artists, farmers, etc) having various religious beliefs.

In the selection of the subjects with ages comprised in this interval, we considered the fact that after the age of 25 sexual orientation is already outlined. Of the 1000 participants, 500 are women and 500 men. Half of the participants are of Greek nationality, and half are English. Half of the participants are heterosexuals, as a sexual orientation, and half are homosexuals/ lesbians.

### 2.3. Design

The present study is a quasi-experimental one, the comparisons being made in accordance with the hypothesis postulated on the basis of the following *classifying variables*:

- country of origin (Greece, Great Britain)
- sex (male, female)
- age (25-30 years old, 31-35 years old, 36-40 years old, 41-45 years old)
- sexual orientation (heterosexuals, homosexuals).

*Dependent variables*: androgyny, depression

In the present paper, we proposed two major objectives: 1) the investigation of the factors underlying score variance on the *Androgyny* scale; 2) the investigation of the factors underlying the variation scores on the *Depression* scale.

The design of this study is a factorial one of type 2X2X2. In other words, we have three independent variables (country of origin, sex of the subjects and type of sexual orientation). Each of these independent variables has got two modalities, thus resulting 8 study groups that will be compared.

*In the case of the second targeted objective*, we proposed to study the variation of the variable *Depression*, depending on: the score on Androgyny scale; the country of origin of the participants (Greece vs. Great Britain); the sex of the participants (female vs. male); the type of sexual orientation (heterosexuals vs. homosexuals/bisexuals).

### 2.4. Instruments

In the present study we have employed the following trials:

#### a) Bem Sex Role Inventory – BSRI

In the case of the participants from Great Britain, we have applied the original version proposed by Bem (1981), version which is applied at a large scale in this form on the British population. In the case of the Greek population, considering that there is no adaptation of the BSRI on the Greek population, we have made a translation of the inventory proposed by Bem, for which we have made a series of statistical processing in order to verify the psychometric qualities.

*Internal consistency*:

In the case of BSRI applied on the Greek population we obtained an  $\alpha$ -Cronbach coefficient of 0,71 for the “masculinity” scale, 0,81 for the “femininity” scale, which indicates a good internal consistency of these scales.

*Fidelity*

In order to verify the fidelity of the scales, we opted for the split-half method. The correlation coefficients obtained were of 0,69 for the masculinity subscale and of 0,70 for the femininity scale, values which offer the guaranty of stability of the subjects’ scores.

### **b) Beck Depression Inventory (BDI)**

Compared to the original version BDI-II is a superior instrument from the point of view of validity. We applied to participants from Great Britain the original version of BDI-II and BSRI which are used in this form at a large scale in this country. In the case of the participants from Greece we used a version of BDI-II and BSRI translated by the author of the present paper, considering that these two tests were not adapted to the Greek population.

#### *Internal Consistency*

We have calculated the  $\alpha$ -Cronbach coefficient of internal consistency for the variant of the BDI-II questionnaire translated into Greek. We obtained an  $\alpha$ -Cronbach coefficient of .87. We present in the table below the results of the correlation inter-item and items total score.

#### *Fidelity*

In order to verify the fidelity of the BDI-II version translated into Greek, we opted for the split-half analysis, obtaining a coefficient of correlation  $r=0,75$ .

The data presented above prove the utility of the instrument for the objectives of the present study.

### **2.5. Procedure**

Before the administration of the trials, the participants were informed about the objective of the study and it was brought to their attention that their participation to this study is a benevolent one. The trials have been completed individually by the subjects, the operators providing supplementary explanations where the case.

## **3. PRESENTATION AND INTERPRETATION OF THE RESULTS**

Of the total sample of 1000 participants, 232 have scores that situate them in the “androgynous” category, 157 in the “masculine” and 171 in the “feminine” categories. 246 of the participants are situated in the “marginal masculine” category, and 193 are situated in the “marginal feminine” category. In further processing, we totaled the marginal masculine participants with the masculine and the marginal feminine ones with the feminine, due to low frequency of the scores recorded together with taking into account other variables.

Participants have ages ranging between 25 and 45 years old. Approximately 50% belong to the 25-30 years old age group, 30% belong to the 31-35 years old age group, 17% belong to the 36-40 years old age group and the rest to the 41-45 years old age group.

In the initial studies, Bem (1975) noticed that 34% of the men and 27% of the women participating in her study were androgynous. The proportion of men with high scores in masculinity and of women with high scores in femininity was

approximately identical (55% compared to 54%). Only 11% of the men had high scores in femininity and 20% of the women had high scores in masculinity.

If we analyze the results we have obtained, we can notice that they differ quite a lot from the results obtained by Bem in the '70s. Thus, a smaller percentage (22,5%) of men have high scores in androgyny and also, a much lower percentage (6,5%) have high scores in androgyny. Consequently, a higher percentage of men record high scores in masculinity.

The percentage of women who record high scores in androgyny (24%) is closer to the data obtained by Bem (27%), but the number of women with high scores in masculinity is much lower (8,2%). On the other hand, the percentage of women who have high scores in femininity is over 10% higher than the one observed by Bem (54% compared to 67,8%).

The results on the two separately analyzed cultures indicate the fact that the results of the participants from Great Britain resemble more to those obtained by Bem, fact which could also be justified by the greater similarity of the British culture with the one of the United States, in comparison with the Greek culture.

The lot of participants equally comprises heterosexuals and homosexuals.

The lot of participants has been made in such a way that it allows us to control the variables *country of origin*, *sex* and *sexual orientation*, in order to follow mainly the effects of androgyny on score, in the variable *depression*.

The majority of the participants do not have scores that would indicate the presence of depression, having scores which indicate a possible mild depression. Very few have depression of medium or severe intensity.

### **3.1. Factors which influence androgyny**

A first objective of our study has been the investigation of the factors which contribute to the variance of the scores in the Bem Inventory (BSRI). In this sense, we have analyzed the role of participants' culture (country of origin), the gender and sexual orientation role.

According to the first hypothesis, we expected that the gender of the participants influence the score obtained in the Bem Inventory. More precisely, we supposed as a first hypothesis that *a bigger number of participants of masculine gender will have high scores in masculinity and a bigger number of participants of feminine gender will have high scores on the femininity scale*.

Also, we supposed that *there would not be any significant differences between men and women regarding the number of persons categorized as androgynous*.

The results indicate the fact that our hypothesis was confirmed. Indeed, the  $\chi^2$  test indicates the existence of significant differences between female and male participants regarding the scores in "masculinity" and "femininity" ( $\chi^2 = 502,602$ ,  $p < 0.001$ ). A much bigger number of men have high scores on the "masculinity" scale and a significantly bigger number of women have high scores on the "femininity" scale.

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If we analyze the results from the point of view of the number of participants, androgynous women or men compared to the number of participants who are not androgynous (totaling the number of feminine and masculine ones), the  $\chi^2$  test indicates that there are no significant differences between the frequency of women and men who are androgynous, which confirms our hypothesis.

As a part of the same objective of our study, we proposed to test the hypothesis according to which a bigger number of persons having a homosexual sexual orientation will have high scores in androgyny, while heterosexual persons will rather be classified as masculine or feminine in BSRI.

A marginal significant difference was noticed between heterosexual and homosexual participants regarding the scores on the androgyny scale ( $\chi^2= 5, 19, p< 0,07$ ). A bigger number of persons of homosexual orientation (G) have high scores in androgyny and masculinity compared to the ones of heterosexual orientation (H) and a bigger number of heterosexual persons have high scores on the femininity scale compared to persons of homosexual orientation.

Our results are convergent with the ones obtained by other authors (Carlston & Baxter, 1984; Zoccali & colab., 2008) who have remarked the fact that homosexual persons are prevalently characterized as androgynous, having high scores both in masculinity and femininity. This is explained by the respective authors by the fact that probably homosexual sexual orientation leads to a change of the masculine/feminine role and to the adoption of some of the features of the opposite sex.

Heterosexual persons are rather characterized in the traditional gender roles, fact which is considered by a series of authors as a stiffening of the behavior associated to gender role. This stiffening seems to be the explanation offered also for demonstrating certain adaptation difficulties which androgynous homosexual persons deal with better because they have a certain behavioral flexibility regarding the strategies for coping with typically feminine or typically masculine problematic situations.

Concerning the differences induced by the cultures to which the participants belong, we did not expect major differences between participants coming from the two different countries regarding the variance of the scores in androgyny.

The results show that there is a significant difference between the scores in the Bem Inventory among participants coming from the two countries ( $t=2,129, p<0,03$ ).

If we analyze the data from the point of view of gender identity categories, the differences between participants coming from the two cultures are not significant ( $\chi^2= 4, 03, NS$ ). Thus, there are no significant differences between the two cultures regarding the frequency of androgynous, masculine and feminine persons, which supports our hypothesis.

Concerning the age of the participants, we assumed there would be no significant differences regarding the number of androgynous persons within the different age categories.

There were no significant differences between the studied age categories and the scores in androgyny.

### ***3.2 The Factors which Influence Depression***

The second objective of this study consisted of the investigation of the relation between the mentioned variables (nationality, gender, sexual orientation and androgyny) and the mood of the participants, more precisely their score in depression measured with BDI-II, the well-known inventory of depression suggested by Beck and his collaborators.

A first variable which was investigated was the gender of the participants.

There were no significant differences between men and women regarding the scores in BDI. These results seem to refute our hypothesis, but if we analyze the data from the perspective of the severity of the depression we notice that the majority of the participants in our study do not have a score in BDI-II which would indicate the presence of depression. The differences stipulated in the literature between women and men refer to severe depression, but the data we possess do not allow an analysis of the differences between male and female participants regarding severe depression.

Furthermore, we assumed that there would be differences between heterosexual and homosexual persons regarding the scores in depression, in the sense that homosexuals will have higher scores than heterosexuals in this variable.

There were no significant differences between heterosexual and homosexual persons regarding the scores in BDI. These results contradict our hypothesis. We may try to explain the absence of differences between heterosexual and homosexual persons by the fact that, actually, the majority of the participants have not recorded high scores in depression, 87% having scores that indicate the absence of depression or a mild depression. It is probable that the presence in our sample of a comparative number of participants with medium and severe depression would have modified these results.

Further, we have analyzed the differences regarding the scores in BDI-II depending on the country of origin of the participants.

In rapport with these variables, we estimated that there would be differences between the participants in our study from the two countries, in the sense that English persons will have higher scores in depression than Greeks.

There was a significant difference between Greek and English participants regarding the score on the depression scale, English persons being significantly more depressive than Greeks ( $t=2,269$ ,  $p<0,02$ ).

There were no significant differences between the persons belonging to the different age categories regarding the scores in BDI.

Weighting the data from the specialized literature, we considered that there would be differences between androgynous, masculine and feminine persons regarding the score in depression. More precisely, androgynous and masculine persons will have lower scores in depression than feminine ones. Adopting this hypothesis, we adhere to the model of masculinity which states that those characteristics associated with masculinity are in fact the ones that contribute to a better adaptation of the androgynous persons to the environment, these being characteristics approved and valued by society more than the feminine ones.



### **3.3. Analysis of the factors underlying the variance of scores on the Androgyny scale**

Statistical analysis has been conducted through factorial analysis of variance (factorial ANOVA). In contrast with the analysis using *t* tests (which imply the separate comparison of androgyny depending on each independent variable in turn), factorial ANOVA allows the study of the interactions between these independent variables.

The analysis has identified significant differences depending on the country of origin ( $F(1,999) = 6.668, p = .01$ ), on the gender of the participants ( $F(1,999) = 919.458, p = < .001$ ). Furthermore, androgyny is influenced by the interaction between the gender and sexual orientation of the participants ( $F(1,999) = 16.971, p < .001$ ). All these results have an acceptable statistical strength (above 70) which indicates the fact that they did not appear accidentally.

If we analyze these results from the point of view of the proportion of the effect (partial  $\eta^2$ ), we can observe that the only effect worth considering is represented by the effect induced by the gender of the participants. According to this indicator, 48,1% of the dispersion of the variable *androgyny* may be attributed to the independent variable *Gender*. According to the results presented in Table 6.26, men have recorded an average of 15,71 (SD = 15,89) and women have recorded an average of 14,4 (SD = 15,76).

Concerning the other two significant results, they are not very relevant from the point of view of the proportion of the effect. Thus, the significant differences noticed between Greek and English participants explains the dispersion of the variable *androgyny* only in a proportion of 0,7%. The results presented in Table 6.26 have indicated the fact that the average of the Greek participants was of 2.47 (SD = 20.84), and the average of the participants from the UK was of 0.47 (SD = 22.72). Although significant, this effect is much too small to conclusion that between the two cultures there are major differences from the point of view of androgyny.

The variance analysis has identified a significant interaction effect between the gender and the sexual orientation of the participants. Although significant, this effect only involves 1,7% of the dispersion of the variable *androgyny*. As one may observe from the figure below, heterosexual men record slightly higher scores than homosexual men. At the same time, heterosexual women record slightly lower scores than homosexual women.

### **3.4. Analysis of the factors underlying score variance on the Depression scale**

Statistical analysis has been done by factorial covariance analysis (factorial ANCOVA). Unlike the analysis using *t* tests (which imply a separate comparison of androgyny depending on each independent variable in turn), factorial ANCOVA allows the study of the interaction between these independent variables and taking into consideration a covariate variable (in this case, the score of the Androgyny scale).

The analysis has identified significant differences depending on the score obtained on the Androgyny scale ( $F(1,232) = 38.561, p < .001$ ) and depending on the country of origin ( $F(1,232) = 9.661, p = .002$ ). These results have an acceptable statistical strength (above .70), which indicates the fact that they did not appear accidentally. According to this indicator, 14,7% of the dispersion of the variable *depression* can be attributed to the interpersonal differences at the level of androgyny. The relation between these two variables is significant and negative ( $r(230) = .346, p < .001$ ).

The variation of the score on the Beck scale is also due to the nationality of the tested subjects. Thus, this independent variable explains approximately 4,2% of the variation of the variable *depression*. According to the results presented in Table 4, Greek participants have recorded an average of 2.26 (SD = 0.69) and UK participants have recorded an average of 2.43 (SD = 0.46).

#### 4. THE CONCLUSION

In order to clarify the results of the various studies dealing with the relation between gender orientation psychological well-being, Whitley (1985) has realized a meta-analysis whose general results best claim the model of masculinity, this latter having a moderate relation both with the absence of depression and a higher degree of adaptation.

Weighting these data from the literature, we consider that there will occur differences between androgynous, masculine and feminine persons regarding the score in depression. More specifically, androgynous and masculine persons will have lower scores in depression than feminine persons.

Covariance analysis has identified significant differences depending on the score obtained in the Bem Inventory ( $F(1,232) = 38.561, p < .001$ ), which confirms our hypothesis. According to this indicator, 14,7% of the dispersion of the variable *depression* may be attributed to interpersonal differences at the level of androgyny.

By the fact that it supports the theories which consider the lack of rigid identification with strict, traditional gender roles, this study supports the benefits of androgynous orientation by the fact that it allows a better adaptation to the environment and it may constitute in a protective factor for depression. Thus, it could represent the basis for the construction of some prevention / intervention programs which would focus on the development of an androgynous orientation that would allow people a greater flexibility in the adoption of several coping strategies, without the boundaries set by the prescriptions of the traditional gender roles.

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