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## THE RELATIONSHIP BETWEEN EXTROVERSION-INTROVERSION, SEXUAL AROUSAL AND THE CONTENT OF SEXUAL FANTASIES

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This study surveyed 113 students regarding the relationship between extroversion-introversion and levels of arousability in relation to 'Intimate', 'Impersonal', 'Exploratory' and 'Sadomasochistic' fantasies. The research was based on Eysenck findings that extroverts search for stronger stimulation in order to achieve sexual arousal, and that they are easily excited sexually, when compared with introverts. The Eysenck Personality Questionnaire and the Wilson's Sexual Fantasy Questionnaire were used to test the hypothesis. The four types of fantasy were correlated with extroversion-introversion yielding four correlation coefficients, showing significant positive correlations between the personality traits and types of fantasies. Multivariate analysis of variance revealed significant main effects for Personality traits and for Types of fantasy, and no significant interaction between personality and types of fantasy. The examination of mean scores on the dependent variable also demonstrated that extroverts reported higher levels of arousal in relation to the four types of fantasies, when compared with introverts. The results supported the hypothesis that extroverts would report higher levels of arousal in relation to different types of fantasies, and that no differences would be found between extroverts and introverts in relation to their rank of arousal levels. The findings also reveal the importance of considering personality traits, as parameters that have a powerful influence in patterns of arousal, when researchers study sexual fantasies.

### INTRODUCTION

In order to study the relationship between sexual fantasies and personality traits this paper will start by referring to the importance of sexual fantasies and to mention previous relevant studies in the sexual fantasies' area. This will be followed by an analysis of those studies that have established the link between personality traits, sexual behaviour and sexual fantasies. Finally a discussion will be presented on the rationale behind this investigation, and then the aim of this study will be outlined.

Sexual fantasies have recently been defined as a kind of day dreaming that includes erotic thoughts and that is sexually arousing. They can occur at any time of the day, can result from a kind of reconstruction of something that has happened in the past or as the creation of new kind of experiences. They may induce arousal or may be the result of an already aroused state (Rokach, 1990).

However, in the early literature on sexuality many researchers have suggested that sexual fantasies were a kind of sexual dysfunction and that

they should be treated. Some researchers, like Freud (1908) have argued that sexual fantasies reflect sexual dissatisfaction, and that they are a kind of compensation for unfulfilled wishes. This would mean that the only purpose of fantasy is wish fulfilment in the absence of actual fulfilment, and therefore a fantasy would occur only when a wish could not find expression. Freud surmised that sexual fantasies were symptomatic of the blocking of the sexual instinct through repression of one's physical desires and could result in either psychosis or neurosis for the person engaged in sexual fantasising.

The studies carried out by Kinsey and his colleagues (1940s) were an important step in the field of sexuality, specially because his work on the normative sexual habits of North Americans broke the ground for further exploration of sexual fantasising. Kinsey et al (1948, 1953) reported that both men and women fantasise frequently, thus legitimising it as a normal behaviour. However his research cannot be considered of great scientific importance, because it was based on the collection of data such as the average number of times that men and women had intercourse per week, or the average age men and women had their first intercourse, or the number of fantasies they have. He did not develop theories, i.e. his work was purely observational. Also, no information was given about the personality dispositions of the samples.

Then, during the mid 1970's, the extent and type of sexual fantasies among women received some attention in the field of sex research. Friday (1973, 1975), reported in two widely popular books the content of many females sexual fantasies. According to Friday (1973) the most common female fantasies were: having sexual intercourse with a faceless stranger, performing before an audience, being raped, prostitution, and having intercourse with young boys (p.372). However this kind of popular collection of sexual fantasies is considered by some as having an erotic function and are therefore not considered as academically acceptable (e.g. Leitenberg and Henning, 1995).

However, it was during the 1970's and 1980's that most researchers reported that both men and women fantasise frequently, legitimising the idea that people fantasises and that they have fantasies during different periods of the day (e.g. Hariton and Singer, 1974; Crepault and Couture, 1980; McCauley and Swann, 1978). The understanding of sexual fantasies is of central importance in the understanding of human sexuality. Sexual fantasies can help our understanding of past sexual experience as well as our understanding of present patterns of arousal (e.g. Eisenman, 1982).

They may provide an inside into the different types of behaviours and personalities, and can help our understanding of deviant sexual behaviours.

Some authors see sexual fantasies as including a range of functions and as reflecting a healthy sexuality, and it is now considered a sign of pathology not to have sexual fantasies rather than have them (Singer and Autrbus, 1963; Talbot et al, 1980; Zimmer et al, 1983). Also, the DSM IV (1993) considers that one of the symptoms of 'inhibited sexual desire' is not to have sexual fantasies. In general, results so far suggest a positive correlation between the number of sexual fantasies, sexual desire and arousability, and a negative correlation between the number of sexual fantasies and sexual problems (Leitenberg and Henning, 1995). On the basis of these studies sexual therapists often advise non orgasmic women to use fantasies during masturbation and intercourse (e.g. Zeiss et al, 1977).

Now it is widely accepted that people's fantasies can be about anything, and that the most intriguing and interesting fantasies are related to love, romance and sex (Leitenberg and Henning, 1995). Also according to authors like Wilson (1978), a sexual fantasy can take many different forms. For example, it can be an elaborated story or can be a fleeting thought of a romantic or sexual activity. Alternatively it can be based on reality or can involve bizarre imagery, can take place during various sexual activities or at any other period of the day. It can be a kind of memory of the past or it can be based on imagination. It can be triggered by images or it can occur spontaneously. Also its content may vary from romantic to sadomasochist. Thus a sexual fantasy involves a wide range of thoughts that are sexual arousing to the individual.

Being private, sexual fantasies can provide more insight than other kinds of sexual behaviours in the psychological world of sexuality. Researchers have studied the role of fantasies by investigating the content or type of fantasy with the reasoning that knowledge of fantasy content provides implications as to fantasies' roles. Different fantasy types have been grouped by the method of factor analysis, and fantasies were considered as being multidimensional and not as having a homogeneous dimension. This has been studied by authors like Arndt et al (1985), who considered that female fantasies could be related to: 'Romance' (e.g. man kissing breast), 'Variety' (e.g. sex with two men), 'Suffering' (e.g. tying someone up) and 'Dominance' (e.g. themes of control). Alternatively Wilson and Lang (1981) considered the existence of four types of males and females' fantasies; the 'Intimate' (e.g. kissing passionately), the 'Exploratory' (e.g. group sex), the 'Impersonal' (e.g. fetishism) and the 'Sadomasochistic' (e.g. being forced).

Finally a more recent example of this type of factor analysis categorisation is Meuwissen and Over's categorisation (1991) in which they identified the following five major group of fantasies: 'Genital' (e.g. stimulation a partner genitals), 'Sensual' (e.g. dance with a partner), 'Sexual power' (e.g. sex with a famous person), 'Forbidden sex' (e.g. take part in group sex), and 'Sexual suffering' (e.g. being raped). Although there are similarities between some of these fantasy types, the differences in 'sexual fantasies' categorisation may account in part for the discrepancies among the results of several studies, specially concerning the differences between males and females.

When men's and women's fantasies have been studied separately, women's fantasies have been shown to contain themes of passivity (May, 1966; Wilson and Lang, 1981), narcissism (Crepault et al, 1977), and sadomasochism (May, 1966; Wilson and Lang, 1981). Conversely, men's fantasies have been found to be active (Wilson and Lang, 1981), aggressive, power oriented, masochistic (Crepault and Couture, 1980), and impersonal (Wilson and Lang, 1981). Kelley (1984) reported that women's fantasies have more references to situations of commitment than men's fantasies. In relation to the number of partners some researchers reported that male's fantasies tend to be polygamous while females tend to fantasise just with one partner (e.g. Wilson, 1987). Differences were also noted in relation to fantasies of submission. Once more women were seen as being in a disadvantaged position, having more fantasies than men that include rape, being overpowered and forced to have sex (e.g. Knafo and Jaffe, 1984; Arndt et al, 1985; Wilson, 1987).

However Mosher and White (1980), after a review of the literature concluded that research has not supported the idea that men and women are dissimilar in patterns of arousal to erotic stimuli. Also some authors argued that there are more similarities between male's and female's fantasies than differences. Creupault and Couture (1980) reported that the two most common fantasies were common in men and women, and the five themes most often chosen by women were among the top seven of those fantasies chosen by men. Wilson and Lang (1981) reported that when fantasies were ranked by descriptive categories representing several themes, both men and women preferred intimate fantasies over exploratory, impersonal or sadomasochist fantasies.

When studying sexual fantasies it is important not only to look to their content, but also to study how this content can be related with patterns of sexual arousal and personality. In studies that went beyond an inquiry into the function of sexual fantasies, several researchers examined the relationship between fantasy and personality characteristics of sexual

fantasizers. Harriton and Singer (1977) reported that women with higher levels of coital fantasies displayed the creative personality qualities of aggression, exhibition, impulsivity and dominance. Similarly, Brown and Hart (1977) found that the content of female's sexual fantasies was related to independence and traditional attitudes. Also Mednick (1977) provided results indicating that relatively more women than men fantasise themselves as being recipients of sexual activity and that this was consistent with gender-base personality differences in activity and passivity. Studies also suggest that there is a relationship between sexual fantasies and guilt, in relation to the number and content of fantasies. These studies suggest that those subjects who are higher in sex guilt report less sexual fantasies (Moreault and Follingstad, 1988; Green and Mosher, 1985). It has been proposed that those fantasies which are contaminated by feelings of guilt are not reinforced and therefore less likely to occur (Leitenberg and Henning, 1995). Other studies such as that from Hariton (1973), reported that nonconformist, independent women tend to have more frequent and varied fantasies than conformist and more traditional women. However, according to Leitenberg and Henning (1995) there are not many studies on the relationship between personality and sexual fantasies, apart from those studies on feelings of guilt and negative feelings about sex.

Thus, it is known that there is a great number of within gender individual differences in what concerns sexual fantasies' content, and that these individual differences may result from differences in the patterns of guilt, anxiety, and independence. Yet, differences in the field of sexual behaviour may also be related to other personality differences, such as extroversion and introversion. Eysenck (1976), developed an hypothesis concerning the way the three personality dimensions-extroversion, neuroticism and psychoticism- would correlate with sexual attitudes and behaviour. According to him people's different personalities would be a good prediction of their sexual conduct. Conform his theory extroversion is characterised by traits such as sociability, activity, liveliness, impulsiveness. Extroverts are also characterised as having low cortical arousal, requiring higher external stimulation in order to achieve the necessary level of arousal. Eysenck found that extroverts have intercourse more frequently, with more different partners, in more different positions and more varied types of behaviours than introverts. Also, extroverts have been found to show greater habituation, habituating to a stimulus faster than introverts. Eysenck proposes that habituation in extroverts leads to boredom, disinterest and loss of arousal, making them constantly seek for new stimulus. Eysenck claims that extroverts are 'easily excited sexually'. From this, one might expect extroverts to endorse a greater number of situations as sexually arousing or as more arousing than introverts. Prior to Eysenck's work, the

only study of sexual behaviour that has established relationships between sexual conduct and extroversion was that of Giese and Schmidt (1968, in Eysenck, 1976). They found that the group of extroverts engaged in almost all form of sexual activity, to a greater extent than introverts.

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Although Eysenck's study is very important, it is only related to sexual behaviour in general. It seems that the study of extroversion and introversion can also be applied to the context of sexual fantasies. Following Eysenck's theory it is possible to predict that extroverts will fantasise more and be more sexual aroused, in relation to 'Intimate', 'Impersonal', 'Exploratory' and 'Sadomasochistic' fantasies, than introverts.

An issue that has been relatively poorly explored involves a careful delineation of how different personality traits relate to different types of fantasies and to the eliciting of arousal in women. Several studies have shown the existence of a link between the presence and amount of sexual fantasies and sexual arousability. In some of these studies, authors like Hariton and Singer (1977) found that most female subjects reported having erotic fantasies and that their erotic fantasies were arousing and pleasurable. Some women used their fantasies to increase their desire if they were not ready to have intercourse or if they felt angry or distracted. Other studies reported that women can generate physiological arousal through the use of sexual fantasy (Heiman, 1977; Stock and Geer, 1982). Moreover Harris, Yulis and LaCoste (1980) found that those subjects who had more detailed sexual fantasies were able to show a higher level of sexual arousability. Finally, Stock and Geer (1982) reported that those women who used more fantasies during sexual masturbation were able to feel more aroused when listening to erotic videotapes. However these studies considered fantasies in general. No relationship was established between patterns of arousal and types of fantasies. Likewise, previous studies did not look at how this patterns of arousal could be influenced by patterns of personality.

A pertinent work to the present investigation was Gosselin and Wilson's (1980) study with fetishists, sadomasochists and transvestites. They compared the three groups with a control group on the Eysenck Personality Questionnaire and on the four factors of the Wilson's Sex Fantasy Questionnaire. They found, for example, that the group of transvestites had a lower number of 'Intimate' fantasies when compared with the control group; and that sadomasochists were the group with highest number of 'Intimate' fantasies. However the authors did not specifically relate the personality traits with scores on the four fantasy factors.

Personality traits and fantasies may be very important in helping to understand why people have different numbers of sexual fantasies, but above all in helping our understanding of the different levels of arousal and content of sexual fantasies. It has already been established that people fantasise in different ways, and several attempts have been made to try to explain these differences. However it seems that there can be a kind of biological predisposition or an influence of the socialisation process reflected in the personality traits that can help researchers to find an explanation as to why different people base their fantasies on different environmental and psychological cues. This may also help us to understand why different people find specific fantasies sexually arousing and others not, and why some people have the need to constantly modify their fantasies, while others can fantasise time after time over the same fantasy. Also it can help to answer questions concerning why some individuals only fantasise about socially accepted behaviours while others have no such rules. Luria (1982) found that two twin sisters who were raised in the same environment and both exposed to the same level of pornography had completely different patterns of sexual behaviour. This reinforces the idea that personality traits may have a very important influence in the way people rule their sexual lives and in the patterns of sexual fantasies. This does not mean that sexual fantasies are not influenced by environmental cues and by the process of socialisation that people go through. As it has already been said the extent of sexual experience can have a great influence in the content and number of sexual fantasies. Yet few studies have tried to examine the relationship between personality and sexual fantasies and the results of these are inconsistent.

A weakness of the previous studies is that they have not analysed the traits which are considered by the majority of researchers as being part of all individuals' personalities, and which are measured by the majority of the personality tests, i.e. they did not consider the relationship between extroversion- introversion and sexual fantasies. In addition these studies have focused on the number and frequency of sexual fantasies, and have not investigated the relationship between the content and personality variables. Therefore it seems that an examination of the relationship between personality traits, such as extroversion and introversion, the content of fantasies and sexual arousal, may provide us a more refined analysis and understanding of sexual fantasies than an analysis based on the number or frequency of fantasies, or the period when people start having sexual fantasies.

In the present study we will be examining the relationship between extroversion- introversion and the content of sexual fantasies as well as the

arousal asserted with these fantasies. Using the Eysenck's Personality Questionnaire (Eysenck and Eysenck, 1975) and the Wilson's Sexual Fantasy Questionnaire (Wilson, 1978; Wilson and Lang, 1981; Wilson, 1988). It is predicted that extroverts and introverts will differ in the level of arousal they associate with different types of fantasy. Specifically, it is predicted that extroverts will feel more aroused by the different types of fantasies, than introverts. It is also predicted that both extrovert and introvert women will have similar preferences in relation to different types of fantasies, i.e. both will have a similar rank of scores in relation to 'Intimate', 'Impersonal', 'Exploratory' and 'Sadomasochistic' fantasies. The present study builds on a previous study by analysing the specific relationship between these two personality traits and the levels of sexual arousal in relation to different fantasy's content. This approach seems to have several advantages over previous approaches. Firstly the use of both tests allows the determination of relationships among personality traits and the content of fantasies, rather than just a numerical comparison of types of fantasies across selected groups, as done by Gosselin and Wilson (1981). Moreover the use of university students as subjects reduces the possibility of sampling bias, which may have occurred with Gosselin and Wilson's study. Discovering the parameters of the variables that affect production of fantasies appears to be an important first step for the experimental investigation of sexual fantasies.

#### **METHOD**

**Subjects** - One hundred and thirteen female undergraduate university students from school of HASS, at the University of Glamorgan, completed two questionnaires concerning personality traits and sexual fantasies. Seventy eight students were doing a first year subject called 'Social and Developmental Psychology', and thirty five students were doing the final year subject - 'Investigative Psychology'. The majority of students were doing Behavioural Sciences (36), Humanities (25) and Combined Studies (22). There were also students from Criminal Justice (15), Sport Psychology (8), Philosophy/Psychology (5), and from English/Philosophy (2). Subjects were between 18 and 49 years old with a Mean age of 22 years ( $SD=5.17$ ). All subjects were advised that they were free to decline participation.

**Apparatus** - The questionnaire which was used measures the relationship between personality traits, fantasy content and sexual arousal. The front page gave subjects information about the nature of the study and asked for demographic information, like age, degree and degree level. The questionnaire was composed by two basic sections: the Eysenck's Personality Questionnaire and a version of Wilson's Sexual Fantasy Questionnaire.

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A shorter version of the original Eysenck's Personality Questionnaire was used. This consisted of 23 extroversion-introversion questions, and seven questions randomly selected from the lying scale. The test questions required Yes and No responses and were scored using the key board for the Eysenck's Personality scale. Each individual could score a maximum of 23 points, indicating a very high level of extroversion, and a minimum of 0 that would indicate a very high level of introversion.

This study also utilised a modified version of Wilson's Sexual Fantasy Questionnaire scale. This questionnaire is very useful because it is composed of a wide variety of detailed items and has categories established by factor analysis. The original scale provides scores for the frequency of fantasies during daytime, during intercourse or masturbation, during dreams while asleep, as well as providing a measure of those fantasies that subjects have done in reality and those fantasies which they would like to do in reality. The fantasies are then analysed according four sub-scales labelled by Wilson as 'Intimate', 'Impersonal', 'Exploratory' and 'Sadomasochistic'. This scale was modified to measure subjects' arousal in relation to the four types of fantasies mentioned above. A five points Likert-type scale was used, with one (1) meaning 'Adversely affects arousal', two (2) 'Not arousing', three (3) 'Slightly arousing', four (4) 'Very arousing', and five (5) meaning 'Extremely arousing'. This questionnaire includes 40 questions, 10 in each of the four types of fantasies. Thus it was possible to score a maximum of 50 points and a minimum of 10 points on the arousal ratings for each type of fantasy..

**Procedure** -The experiment took place in two rooms at the University of Glamorgan where two lecturers generously gave up twelve minutes of their lecture period. The questionnaires were given to these two different groups of students on the same day, one group being from the first year and the other from the final year. Subjects were given instructions about the nature, and purpose of the study, and about confidentiality, anonymity and opportunity to decline. Subjects were also advised to read the first page before they started answering the questionnaire, and they were informed that they had around ten minutes to answer all of the questions. The questionnaires were handed out at the beginning of each lecture and were answered at the end of each lecture. Subjects were asked to leave the questionnaires on a table before leaving the room.

**Design** - The design was a questionnaire design. The experiment was comprise by the independent variable - Personality Traits, and by the dependent variable - Arousal Rating. Personality Traits covered the levels of Extroversion and Introversion. The Arousal Rating included four different

types of fantasies: 'Intimate', 'Impersonal', 'Exploratory' and 'Sadomasochistic'. *CE*

## RESULTS

### *Extroversion and Introversion and Fantasy Types Averages*

The levels of sexual arousal Means and Standard Errors in relation to each type of fantasy and personality traits were calculated and are shown in

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Note that individuals were labelled as extroverts when their scores, in the Eysenck Personality Questionnaire, were higher than 12, and labelled as introverts when scores were equal or less than this number.

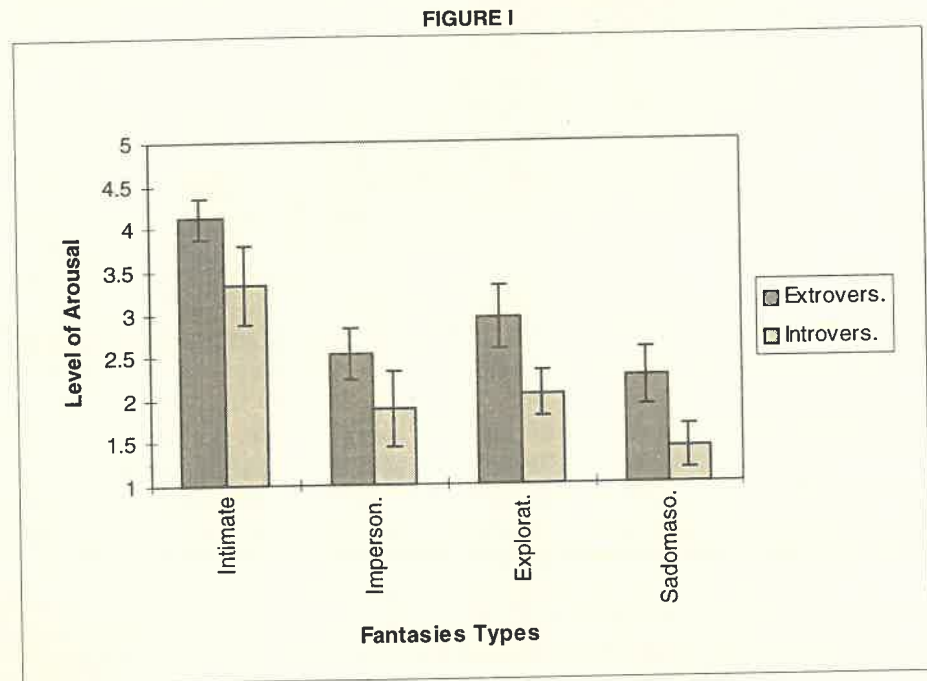


Figure 1- Extroverts and Introverts levels of arousal- Averages and Standard Errors

#### LEVELS OF AROUSAL LEGEND

- 1 - Adversely affects arousal
- 2 - Not arousing
- 3 - Slightly arousing
- 4 - Very arousing
- 5 - Extremely arousing

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The hypothesis that there would be differences between levels of arousal in extroverts and introverts is largely supported with the  $F$  ratio indicating significant differences between the two personality traits and the levels of arousal ( $F(1,111) = 77.46, p < .0001$ ). The ANOVA results also indicate that there is a main effect for arousal rating by fantasy type, i.e. a significant difference in report of arousal by fantasy type. ( $F(3, 333) = 436.42, p < .0001$ ). The fact that both groups displayed the same order of preferences in relation to different types of fantasies is consistent with the  $F$  ratio found for the interaction between Personality Traits and Arousal Rating in different types of fantasies ( $F(3, 333) = 1.74, p < .159$ ). This result indicates that no differences were found in what concerns extroverts' and introverts' preferences in relation to types of fantasies.

The Histogram shows that extrovert and introvert women found 'Intimate' fantasies more arousing than the other type of fantasies. This preference was followed in both groups by 'Exploratory' fantasies, then 'Impersonal', and finally by 'Sadomasochistic' fantasies. It can be seen that extroverts had higher scores of sexual arousal in relation to all types of fantasies. This difference is even more evident when looking to the 'Sadomasochistic' fantasies. When comparing extroverts and introverts in relation to each kind of fantasy it is possible to witness that while, for example, extroverts found 'Intimate' fantasies to be 'Very arousing', introverts found these fantasies as being more 'Slightly arousing' than 'Very arousing'; and that the greater difference was found in relation to 'Sadomasochistic' fantasies. Here, extroverts reported scores showing that these fantasies were between 'Not arousing' and 'Slightly arousing', while introverts saw this group of fantasies as 'Adversely affecting arousal'. From the observation of the histogram it is possible to note that only introverts found one group of fantasies as 'Adversely affecting arousal'. The results also show that only extroverts saw one group of fantasies as being 'Very arousing' (the 'Intimate' group), and that introverts did not find the majority of sexual fantasies as being arousing, and the higher level of arousal, in this group, was related to 'Intimate' fantasies which were considered 'Slightly arousing'.

#### **CORRELATION BETWEEN EXTROVERSION-INTROVERSION AND THE DIFFERENT TYPES OF FANTASIES**

Pearsons' Product-Moment Correlations were also calculated to analyse the relationship between: extroversion-introversion and the level of arousal in the four types of fantasies: 'Intimate', 'Impersonal', 'Exploratory', and 'Sadomasochistic'. The results are shown in *Table 2*.

**Table I -Pearson's Product-Moment Correlations- Relationship between Personality (Extroversion-Introversion) and Types of Fantasies**

|             | Intimate | Imperson. | Explorat. | Sadomas. |
|-------------|----------|-----------|-----------|----------|
| Personality | 0.72**   | 0.68**    | 0.73**    | 0.68**   |

Note: N = 113, \*\* p < 0.005, l.s. = 0.3211

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As it is possible to see from the table consistent and very significant positive correlation was found between Extroversion-Introversion and the levels of arousal in relation to 'Intimate'; 'Impersonal'; 'Exploratory' and 'Sadomasochistic' fantasies. This meaning that the higher the level of extroversion, the higher was the reported level of arousal in relation to the four types of fantasies (see Figure 2, 3, 4 and 5 in Appendix B)

#### **DISCUSSION**

When studying the relationship between personality and sexual fantasies it is not sufficient to consider sexual fantasies in general. The importance of considering both personality traits and sexual fantasies as multidimensional is supported by the present study.

The analysis of the variance showed that there is a main effect for the personality traits, meaning that these are important predictors of the levels of arousal in relation to different types of fantasies. Hence, as it was predicted the more extrovert a woman is the more arousing she finds all types of fantasies when compared with introvert females. The levels of arousal reported by extroverts and introverts were found to differ by one point or approximately one point in the Likert scale, indicating substantial differences in the levels of arousal between these two groups. The data analysis also showed that there was a main effect of types of fantasy, meaning that there was a significant difference in report of arousal by types of fantasy. No interaction between personality traits and arousal rating in different types of fantasy was found, indicating that, as hypothesised, any differences between extroverts and introverts were consistent across the different types of fantasy.

The data analysis also indicated the existence of significant positive correlations between extroversion- introversion and the levels of arousal in relation to the four types of fantasy - 'Intimate', 'Impersonal', 'Exploratory' and 'Sadomasochistic'. This meaning that the higher the level of extroversion the higher was the reported level of arousal in relation to all fantasy types.

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These results are consistent with Harris et al (1980) findings that women's better imagery ability and higher extroversion were associated with higher sexual arousability. They also reinforce Eysenck's (1976) findings that extroverts would be trying to compensate for their presumed lack of cortical arousal and would be seeking stimulation within the sexual arena, while introverts would avoid more stimulating forms of sexual behaviour. Considering sexual fantasies are part of people's sexual behaviour it is natural to consider that extroverts would look for more stimulation in sexual fantasies, than introverts. Therefore it seems that, as was predicted by Eysenck, extroverts are easily excited sexually, and that they report a greater number of situations as sexually arousing or more arousing than introverts. In this study extroverts found the four types of fantasy as inducing more arousal than introverts.

Therefore, as was predicted by Eysenck, it seems that extroverts not only engage in more activities, produce more fantasies but they also report higher levels of arousal in relation to all fantasy types, whereas introverts suppress behaviours, fantasies and levels of arousal. Another interpretation is that experience may be a good source of material for fantasies, and the frequency individuals have fantasies may be positively correlated with the level of arousal felt in relation to different types of fantasy. Thus if introverts are, as Eysenck predicted, less experient because they engage in less sexual activities, with fewer partners and in less sexual positions they are likely to produce less fantasies and report less sexual arousal to the different types of fantasy than extroverts. This interpretation agrees with Person et al (1992) findings, that fantasies in general are associated with sexual experiences in general, suggesting that those individuals who are more extroverted and thus more sexual experienced have the tendency to see different types of fantasy as more arousing than those individuals who do not experience such a large number of sexual behaviours.

The difference between extroverts and introverts levels of arousal can also be explained by the fact that fantasising can be a learned ability, and it may be safe to suggest that although extrovert and introvert women are exposed to similar environments, females scoring high on the EPQ (that is female extroverts) may be less stereotypical in their sexual roles than their introverted counterparts. Although both extrovert and introvert women may have been taught to rate their sexual arousal in similar terms, and until recently not to initiate dating or sexual relations, it may be that the fact that women do not have much experience in taking an active sexual role has a stronger influence in introvert women and in the levels of arousal they report, than in extrovert women.

Cognitive labelling of the erotic value of the fantasy content may produce expectations of arousal that are not matched by physiological responses. It is possible that specially introvert women may deny that some fantasies are highly arousing because they are more influenced by learned social scripts against women being aroused by indecent fantasies. Thus they may have understated their degree of arousal to some types of fantasy because of the cultural expectations that such eroticism does not or should not arouse women.

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Fantasy as well as the recognition of one's degree of sexual arousal is a cognitive phenomena. Although reading involves also a cognitive process, it requires attention to be focused on external stimuli which may distract from cognitive awareness on possible physiological arousal, and may have induced introvert women to report lower levels of arousal than they would feel in reality. It may be that these women may feel higher levels of arousal when having this type of fantasy, and that when reading the list of fantasies they are distracted from their possible physiological arousal.

In keeping with this hypothesis, Wincze et al (1977) found that while erotic scenes (as opposed to romantic or neutral scenes) produced the greatest physiologic increase in arousal in women, they did not rate them as the more arousing. Similarly, if a woman does not label a fantasy as arousing, she may not be aware of the arousability caused by that fantasy. The women in Heiman's (1977) study, for example did not label themselves as sexual aroused when the tape stimulus was nonerotic in content (it contained romantic or neutral material) although, in fact, they were physiologically aroused. Consequently introvert women, may be more likely to report lower levels of arousal because they are more concerned with what is socially desirable. This means that factors such as guilt and embarrassment which can be more related to introversion may be playing a role. Follingstad and Kimbrell (1986) reported that the lower levels of reported sexual arousal were related with high sex guilt, and that this could probably be explained by their censoring of sexual arousal to material they considered as being not socially desirable.

Another finding of this study was that both extrovert and introvert women reported higher levels of arousal, and thus a preference, in relation to 'Intimate' fantasies (e.g. passionate kissing, oral sex, outdoor sex, and masturbating a partner). This preference was followed by 'Exploratory' (e.g. group sex, promiscuity, mate-swapping), 'Impersonal' (e.g. sex with strangers, watching others and fetishism) and finally 'Sadomasochistic' fantasies (e.g. whipping and spanking, being forced to have sex).

Some researchers like Sarason and Sarason (1958) and more recently Arndt et al (1985) reported that women in their study reported higher levels of arousal in relation to fantasies with painful content and unpleasurable activities that were done to them. The results of the present study do not replicate these findings, and it appears that sadomasochism is actually little or no interest for both extrovert and introvert women. The present study findings differ from those of earlier researchers in that the sexual fantasy of being overpowered and forced to sexually surrender were ranked much lower in preference and were seen as 'Not arousing' or as 'Adversely affecting arousal'. This data alternatively suggests that sexual fantasies function (at least for some women) to help achieve sexual arousal. The finding that females would prefer sadomasochistic fantasies is intriguing and contrasts other studies where females were found to prefer more romantic and passive themes (e.g. Wilson and Lang, 1981; Kelley, 1984).

The fact that both groups reported Intimate fantasies more arousing is consistent with Wilson's (1988) findings that women have a higher incidence of this kind of fantasy than of other types of fantasy. Thus if we think that there is a link between the level of arousability caused by each fantasy and the frequency women have that fantasy, then we can say that people's personalities can be a good predictor of the level of arousability generated in each type of fantasy.

Women's higher levels of arousal in relation to 'Intimate' fantasies can be a result of their socialisation, sex-role scripting, and the differential emphasis placed on sex for males versus marriage, love, and relationships for females, thus they may find those fantasies involving romance and passivity as more arousing than those fantasies involving more pornography or active roles. It can also be related to the kind of literature to which they are exposed. As Ellis and Symons (1990) suggested women are usually exposed to erotic romance and not to pornographic magazines. According to these authors erotic romances are very popular among women, and differ a lot from pornographic magazines which evoke visual images of female's bodies. In the modern erotic romance sexual activity is portrayed more graphically than in the past, but the basic fictional world has not changed. In romances the central story involves love, commitment and usually marriage. Thus it emphasises the importance of romance, love and intimate relationships. Intimate fantasies are related to more romantic, passive and as the name indicates intimate themes. The other three types of fantasies are more related to pornographic, active and impersonal themes that may make women feel less aroused and even uncomfortable. Several studies indicated that men's fantasies are those which tend to be active, impersonal and visual oriented (e.g. McCauley and Swann, 1978; Ellis and Symons, 1990).

Finally another factor that may explain why the subjects of this experiment preferred 'Intimate' fantasies and found that, in general, the other three types were not arousing may result from the fact that the other three types of fantasies may be related to other personality traits, such as Psychoticism. The Sadomasochistic fantasies may be related with Psychotic trait which is characterised by Eysenck (1976) as a person who "does not care for other people, who can be cruel and inhumane, lacking in feeling and empathy, and altogether insensitive, and who can be aggressive even to loved ones" (p. 19). Moreover, this fantasy type together with the Exploratory and Impersonal fantasies were found to be higher in male sadomasochists and fetishists than in a male control group (study done by Alberta Hospital, Canada, cited in Wilson, 1988).

Another important aspect to note is that the fact that both extroverts and introverts reported higher levels of arousal in 'Intimate' fantasies and much lower levels of arousal in the other three types of fantasy leads to the conclusion that contrary to what was proposed by Person et al (1992) most women are sexual specialists, and not generalists, that is to say it seems that the majority of women find 'Intimate' fantasies more arousing, and naturally they would report a higher number of these fantasies.

Although much additional survey is needed to test the conclusions suggested by this study, the results supported the hypothesis that although both extroverts and introverts have the same kind of fantasies, they experience different types of arousal, i.e. extroversion and introversion are positively related with levels of arousal in relation to the four types of fantasies. The results of this study have significant implications for two aspects of the research into sexual fantasies. First it used both Eysenck's Personality Questionnaire and Wilson's Sexual Fantasy Questionnaire. The E.P.Q. uses a scale that is regarded as acceptable, reliable and valid (Kline, 1981; Shackleton and Fletcher, 1984). The W.S.F.Q. and the scale used are an important measure of sexual fantasies because it helps the researcher analysing not only the content of sexual fantasies but also the level of arousal produced by each fantasy. Thus this questionnaire is also very useful in determining whether disorders such as inhibited sexual desire entail diminished use of some types of fantasy more than others rather than global loss in sexual fantasy. Since this questionnaire provides specific rather than global assessment of sexual fantasy, relationships between arousal level and use of fantasy can be indexed with reference to content. Second, the establishment of a relationship between extroversion-introversion and levels of arousal in relation to different types of fantasy continue to develop the picture of parameters affecting sexual fantasies and to aid the clinical use of fantasies. Also, this study has demonstrated that it

is more meaningful to consider the content of sexual fantasies than it is to treat them as a homogeneous dimension.

However it seems that several major gaps in knowledge of sexual fantasy are still apparent and that further research is needed. First it would be interesting to expand this study to a group of males to see if it was still possible to establish a relationship between extroversion- introversion and the levels of arousal. Moreover it would be important to extend this study to other personality traits, and to see to what extent other personality traits are also related to levels of arousal in different types of fantasy. Additional studies could be done to determine if there is any difference between homosexual and heterosexual extroverts and introverts in the levels of arousal reported. Moreover it would be interesting to compare offenders and non-offenders in relation to their personality traits and the content of sexual fantasies. It would be interesting to extend the present study to a cross-cultural analysis to see to what extent extroverts and introverts from other culture also differ in the levels of arousal associated with the four types of fantasies, and to see if introverts and extroverts differ in their order of preference, or if their preferences are similar to those found here. Finally researchers could do a similar study using the same questionnaires, but using the original Wilson's scale to analyse the frequency and the period that introverts and extroverts have the four types of fantasy. It is hoped that other researchers will subject these suggested questions as well as others to further empirical investigation. Possibly by finding the different parameters that affect sexual fantasies it will be possible to support those patients with sexual dysfunctions and sexual deviations, by helping them developing fantasies or by reconditioning their arousal to different fantasies.

#### **CONCLUSION**

The data from this study showed the existence of a main effect of Personality traits, a main effect of Arousal Rating in different types of fantasy, and no interaction effect between the two variables. A very significant positive correlation between extroversion - introversion and the reported level of arousability was also found in relation to 'Intimate', 'Impersonal', 'Exploratory' and 'Sadomasochistic' fantasies. These results have important implications for the study of those parameters affecting sexual fantasies. The fact that this study have shown the existence of a main effect of the extroversion - introversion in the level of arousal in different fantasy types, raises other questions such as the possibility of a relationship between other personality traits and the levels of arousal in different types of fantasies, or the existence of the same kind of relationship in males, or in homosexual males and females. These finding are also very important in what concerns the delineation of sexual fantasies' therapies in the treatment of sexual dysfunction's and sexual deviations.

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