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De Clérambault's syndrome (erotomania) in an evolutionary perspective

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Abstract

De Clérambault's syndrome (erotomania), the delusion of being loved by another person, is characterized by consistent sex differences in prevalence rates, sociodemographic data, and behavior directed towards the perceived 'love object'. The aim of the present review of 246 worldwide cases (published 1900–2000) is to evaluate the behavioral characteristics of erotomania according to the 'Sexual Strategies Theory' (SST) proposed by Buss and Schmitt [Psychol. Rev. 100 (1993) 204.]. Consistent with the SSTheory of sex-specific sexual psychology, erotomania may be best understood as a pathological variant of a long-term mating strategy. The content of delusional disorders, as exemplified here by erotomania, may be interpreted from an evolutionary perspective, which may influence (future) psychiatric nosology.

Keywords: Erotomania; Delusional disorders; Sexual selection; Female sexual strategy

1. Introduction

De Clérambault's syndrome (erotomania) is defined as the delusional conviction that one is loved by another person; women are much more likely to be affected than men (Segal, 1989). In his original description, De Clérambault (1942) distinguished a primary type related to paranoia (adopted by DSM-IV; American Psychiatric Association, 1994) from a secondary type that may occur in paranoid schizophrenia. More recently, erotomania has also been reported in affective disorders, mental retardation, and organic brain diseases, including HIV-

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encephalitis and Alzheimer's dementia (e.g., Anderson, Camp, & Filley, 1998; Signer, 1991). Erotomania is considered to be a rare disorder; hence, the psychiatric literature still lacks reliable estimates of incidence and prevalence rates, and because of a strong tendency to dissimulate or to conceal the "passionate love," the incidence of erotomanic syndromes is probably underestimated (Enoch & Trethowan, 1991; Mullen & Pathé, 1994). From a forensic perspective, erotomania has been associated with stalking behavior and violent sexual jealousy and both are more commonly exhibited by men (Harmon, Rosner, & Owens, 1995; Mullen & Pathé, 1994).

Traditional psychiatry has interpreted erotomania primarily in psychodynamic terms (e.g., Hollender & Callahan, 1975; Segal, 1989), but psychoanalytic hypotheses have failed to account for the remarkable sex differences in erotomania. This obvious disparity between the sexes and the evidence suggesting cross-cultural uniformity of symptoms may reflect evolved sex-specific psychological preferences for potential mates as proposed in this paper. Sex differences in evolved preferences for "valuable" mates and strategies in pursuing mating opportunities have been analyzed by Buss and co-workers (e.g., Buss & Schmitt, 1993). Distinguishing short-term from long-term mating partner preferences for men and women, sex differences have been documented in nonclinical populations in 37 societies (e.g., Buss, 1989; Buss et al., 1990). It may be argued that psychiatric disorders reflect evolved psychological adaptations, albeit exaggerated in form or more conspicuous because of compromised cognitive control. Thus, the aim of the present study is to assess whether particular features of erotomania are consistent with predictions derived from Buss and Schmitt's (1993) 'Sexual Strategies Theory' (SST).

According to SST, humans possess sex-specific evolved preferences and behavioral strategies for solving reproductive problems that differ because of sex differences in parental investment during human evolutionary history (Trivers, 1972). In a nutshell, due to different factors limiting reproductive success, men would be more likely than women to seek short-term mating opportunities, multiple partners, and sexually attractive young partners. Moreover, due to the problem of uncertain paternity, men should have evolved strategies to ascertain female sexual fidelity and loyalty, i.e., by sexual jealousy (Daly, Wilson, & Weghorst, 1982). By contrast, women would be more likely to pursue long-term mating because a woman's reproductive success is not limited by the number of partners but by the resources (including protection) that a potential mate is willing to provide. Therefore, women should tend to be more discriminating in mate selection than men, preferring high social status and wealth in men. However, these preferences do not preclude long-term mating by men and short-term mating by women under specific circumstances. Moreover, as Buss and Schmitt (1993) point out, the premise that human mating is essentially strategic does not imply that conscious planning is necessarily involved.

1.1. Predictions concerning erotomania derived from SST

My basic hypothesis is that if the syndrome reflects sex-specific sexual psychology adaptations, erotomania symptoms are more likely to reflect features associated with a long-term mating strategy. Accordingly, the following predictions may be deduced:

1. Erotomania is more likely to occur in women than men.
2. The onset of the disorder is limited to adults.
3. Erotomanic subjects are less likely to be involved in satisfactory relationships, and hence, more likely to be unmarried, divorced, or, if married, in an ambivalent relationship.
4. Men and women pursue different strategies to enhance their mate value. Due to intrasexual mate competition, women are more likely to enhance their appearance, whereas men tend to demonstrate the resources at their disposal. In addition, women, more than men, tend to remain chaste.
5. Both men and women try to 'persuade' their love objects of their mate value, but harassment is more likely in men than women because of the benefits of persistence in intrasexual competition.
6. Men and women differ in mate preference. In female erotomania, the 'objects' should be socially high-ranking (older) men of high mate value, whereas male erotomaniacs will tend to choose physically attractive (younger) women. Men who pursue a long-term mate may have fewer resources at their disposal than average, and may attempt to compensate for lower social status by pursuing a long-term mate of higher social status due to possible benefit from kinship alliance, so erotomanic men are predicted to be more often of low social status.
7. When engaging in long-term mating, men activate mechanisms to detect sexual infidelity to increase likelihood of paternity (jealousy). Thus, male erotomanic behavior is predicted to be more likely associated with sexual jealousy, including violence directed towards the love object or her relatives who are perceived as interfering with the relationship. Also, men are more likely to stalk their love object, so forensically relevant behavior is more likely in men than women.
8. In erotomania, fixation on a single love object is expected in both men and women. If the erotomaniac is fixated on multiple objects, consecutive fixation is more likely than simultaneous fixation.

2. Methods

A total of 246 case reports published between 1900 and 2000 in psychiatric textbooks and journals, including 15 case reports from a Swiss Inaugural Dissertation (Möhr, 1987), were reanalyzed with respect to the probable diagnosis, according to DSM-IV criteria, society, sex of the erotomanic subject, age at onset of the disorder, marital status (not married, married, ambivalent relationship), estimated social status of the erotomanic person (low, average, high), enhancement of outer appearance, demonstration of resources, deliberate chastity, sensitivity to nonverbal cues of the 'love object', harassment of the 'love object', jealousy, and forensic relevance of behavior. Items concerning the 'love object' were rated as follows: age in relation to the affected subject (younger, same age, older), estimated social status (low, average, high), sexual attractiveness of the 'love object', number of love objects (single, multiple, simultaneously or

Table 1
Sex differences in features of 246 published cases of the psychiatric syndrome of erotomania

Coded category (*n* cases)	Women	Men	Statistical tests
Proportion of affected individuals (*n* = 246)	170 (69.1%)	76 (30.9%)	$\chi^2 = 35.919$; $df = 1$; $P < .001$
Mean age at onset (*n* = 225)	33.5 (S.D. 12.95)	28 (S.D. 7.05)	$t = 3.473$; $df = 223$; $P < .001$
Not married	116 (76.4%)	56 (94.9%)	
Married/ambivalent	36/12 (23.7/15.8%)	3 (5.1%)	$\chi^2 = 15.444$; $df = 4$; $P = .004$
Social status of erotomaniacs (*n* = 134)			
Low	48 (35.8%)	38 (55.1%)	
Average	79 (59.0%)	28 (40.6%)	
High	7 (5.2%)	3 (4.3%)	$\chi^2 = 6.973$; $df = 2$; $P = .031$
Enhancement of outer appearance[a] (*n* = 36)	25/32 (78.1%)	1/4 (25%)	$\chi^2 = 2.704$; $df = 1$; $P = .1$, n.s.
Demonstration of resources[a] (*n* = 28)	10/19 (52.6%)	8/9 (88.9%)	$\chi^2 = 2.096$; $df = 1$; $P = .148$, n.s.
Chastity[a] (*n* = 73)	53/68 (77.9%)	2/5 (40%)	$\chi^2 = 1.856$; $df = 1$; $P = .173$, n.s.
Harassment (*n* = 127)	52/64 (81.3%)	62/63 (98.4%)	$\chi^2 = 10.178$; $df = 1$; $P = .001$
Jealousy (*n* = 61)	17/27 (63%)	32/34 (94.1%)	$\chi^2 = 9.244$; $df = 1$; $P = .02$
Forensically relevant behavior (*n* = 246)	7 (4.1%)	39 (51.3%)	$\chi^2 = 76.959$; $df = 1$; $P < .001$
Age of 'love object' (*n* = 107)			
Older	50 (73.5%)	8 (20.5%)	
Same	5 (7.4%)	5 (12.8%)	
Younger	13 (19.1%)	26 (66.7%)	$\chi^2 = 29.019$; $df = 2$; $P < .001$
Social status of 'love object' (*n* = 206)			
Low and average	21 (13.2%)	13 (27.7%)	
High	138 (86.8%)	34 (72.3%)	$\chi^2 = 5.498$; $df = 1$; $P = .019$
Sexual attractiveness of 'love object' (*n* = 42)	10/18 (55.6%)	23/24 (95.8%)	$\chi^2 = 9.911$; $df = 1$; $P = .002$
Number of 'love objects' (*n* = 246)			
Single	139 (82.2%)	58 (79.5%)	
Consecutive	24 (14.2%)	12 (16.4%)	
Simultaneous	6 (6.3%)	3 (4.1%)	$\chi^2 = 0.263$; $df = 2$; $P = .877$, n.s.

[a] Total numbers rated present/absent (percentage in parentheses), χ^2, Yates correction due to expected values fewer than 5.

consecutively). Ratings were made conservatively, in that items that could not be definitely evaluated were rated as 'not reported', except for the items 'homosexuality', 'forensic relevance', and 'multiple objects' which were rated 'absent' if not explicitly mentioned. Sex differences were compared using chi-square tests and *t* tests. With respect to possible biases in the collection of the sample, it is important to realize that erotomania is very rarely seen in clinical settings, and the older psychiatric literature comprises more or less 'classic' case reports to illustrate general descriptions of delusional syndromes. Whereas psychiatrists diagnosed erotomania as almost exclusively occurring in women until the 1970s, an increasing number of men with erotomania have been described since the 1980s. Likewise, potential biases may result from publications of unusual cases, for example, with respect to age, diagnostic category (primarily

organic psychotic disorders), and homosexuality. Also, the predictions were developed and coded by the same person, which may have influenced the rating of behavioral items, although meticulously coded (codings and references of the case reports can be obtained from the author upon request).

3. Results

The 246 cases are summarized in Table 1. They come from 28 different nations; the core features of the disorder have been found strikingly similar irrespective of the cultural background or ethnicity (as also confirmed by the uniformity of the syndrome over different historical epochs; overview in Enoch & Trethowan, 1991). The majority of affected individuals were women. According to DSM-IV criteria, 38.6% were diagnosed as having probable delusional disorder, erotomanic type, 33.3% schizophrenia, 12.6% affective disorders, 6.9% schizo-affective disorder, and 5.3% organic delusional disorder, respectively. In eight cases, the diagnosis was undetermined. Men and women differed with respect to the age at onset of the disorder but all were adult when the symptoms appeared. Marital and social status, as well as behavior and 'mate choice' (Table 1) were consistent with the predictions about sex differences. As expected, jealousy and harassment were strongly interrelated ($\chi^2 = 12.0$; $df = 1$; $P = .001$, Yates corrected), as were jealousy and forensic relevance of the behavior ($\chi^2 = 9.973$; $df = 1$; $P = .002$), harassment and forensic relevance ($\chi^2 = 7.948$; $df = 1$; $P = .005$), and sexual attractiveness of the 'love object' and forensically relevant behavior ($\chi^2 = 6.293$; $df = 1$; $P = .044$). By contrast, there was no statistically significant association between age of the 'love object' and the occurrence of jealousy or harassment.

4. Discussion

One aim of the present analysis of erotomania cases was to evaluate the particular psychiatric syndrome comprising sex-specific behavioral characteristics from an evolutionary perspective by testing predictions derived from SST (Buss & Schmitt, 1993). This is a new approach in psychiatry, suggesting that evolutionary theory may be valuable in developing a more functionally coherent understanding of particular nosology (Cosmides & Tooby, 1999). Erotomania, for example, occurs in a variety of diagnostic categories in essentially the same manner. Thus, what is important is the cerebral representation of the cognitive and emotional (dys)functions involved in erotomania.

The sample used in this study comprises the majority of published case reports on erotomania from various psychiatric 'schools'. However, as the sample is a convenience sample of published cases with unknown biases and missing information, neither representativeness nor reliability can be assessed. Nevertheless, the findings are consistent with the hypothesis that erotomania represents a comprehensible reflection of pursuing a long-term mating strategy according to SST. It may be argued that this is a case of circular reasoning:

erotomania is more frequent in women, and therefore it must represent a predominantly female sexual strategy. However, the findings concerning age, marital and social status of the affected individuals, behavior directed towards the 'love object', social status, age, and number of the 'love objects' differed between men and women in a manner consistent with SST (Table 1). For example, male erotomania is much more likely to be associated with sexual jealousy, harassment, threatening behavior, and violence directed towards the 'love objects' and perceived rivals, which may reflect a male adaptation to ensure the woman's sexual loyalty and paternity of potential offspring. In keeping with this interpretation, the fixation on multiple objects and antisocial behavior prior to the onset of the erotomanic delusion have been found to predict violent behavior (Menzies, Fedoroff, Green, & Isaacson, 1995; Zona, Sharma, & Lane, 1993). From an evolutionary perspective, the pressure to ensure paternity should be expected to increase with the number of potential mates or 'love objects', which may lead to enhanced sexual jealousy. The sex difference in age at onset is not consistent with SST. For women, finding a mate who is (seemingly) willing to invest in a long-term relationship may feel imperative near menopause. Men, by contrast, especially when low-ranking and having fewer resources at their disposal than average, may also benefit from kinship alliances by gaining social status if mating with a high-ranking woman.

While the content of the erotomanic delusion may reflect adaptive behavior in our ancestral environment, it has recently been argued that the pathology of the formal aspect of delusional disorders, i.e., why there are delusions at all, arises from poor reality testing of meta-representations about the social environment, referred to as 'theory of mind' delusions (Charlton & McClelland, 1999).

Despite some limitations of the present study, pathological variants of adaptive behaviors, as exemplified by erotomania, may be better explained in an evolutionary framework. Future studies should prospectively address the role of evolved psychological mechanisms in psychiatric syndromes. In turn, assessing evolutionary aspects of pathological behavior may help us gain insight into the evolution of human behavior.

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References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.

Anderson, C. A., Camp, J., & Filley, C. M. (1998). Erotomania after subarachnoidal hemorrhage: case report and literature review. *Journal of Neuropsychiatry and Clinical Neuroscience*, *10*, 330–337.

Buss, D. M. (1989). Sex differences in human mate preferences: evolutionary hypotheses tested in 37 cultures. *Behavioral Brain Sciences*, *12*, 1–49.

Buss, D. M., Abbott, M., Angleitner, A., et al. (1990). International preferences in selecting mates. A study of 37 cultures. *Journal of Crosscultural Psychology*, *21*, 5–47.

Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: an evolutionary perspective on human mating. *Psychological Review*, *100*, 204–232.

Charlton, B. G., McClelland, H. A. (1999). Theory of mind and the delusional disorders. *Journal of Nervous and Mental Disease*, *187*, 380–383.

Cosmides, L., & Tooby, J. (1999). Toward an evolutionary taxonomy of treatable conditions. *Journal of Abnormal Psychology*, *108*, 453–464.

Daly, M., Wilson, M., & Weghorst, S. J. (1982). Male sexual jealousy. *Ethology and Sociobiology*, *3*, 11–27.

De Clérambault, G. G. (1942). *Les psychoses passionelles*. Œuvre Psychiatrique. Presses Universitaires de France, 331, 337–339, 357, 408.

Enoch, M. D., & Trethowan, W. (1991). *Uncommon psychiatric syndromes* (3rd ed.). Oxford: Butterworth.

Harmon, R. B., Rosner, R., & Owens, H. (1995). Obsessional harassment and erotomania in a criminal court population. *Journal of Forensic Sciences*, *40*, 188–196.

Hollender, M. H., & Callahan, A. S. (1975). Erotomania or de Clérambault syndrome. *Archives of General Psychiatry*, *32*, 1574–1576.

Menzies, R. P., Fedoroff, J. P., Green, C. M., & Isaacson, K. (1995). Prediction of dangerous behaviour in male erotomania. *British Journal of Psychiatry*, *166*, 529–536.

Möhr, A. (1987). Liebeswahn. *Phänomenologie und Psychodynamik der Erotomanie*. Stuttgart: Enke.

Mullen, P. E., & Pathé, M. (1994). The pathological extensions of love. *British Journal of Psychiatry*, *165*, 614–623.

Segal, J. H. (1989). Erotomania revisited: from Kraepelin to DSM-III-R. *American Journal of Psychiatry*, *146*, 1261–1266.

Signer, S. F. (1991). "Les psychoses passionelles" reconsidered: a review of de Clérambault's cases and syndrome with respect to mood disorders. *Journal of Psychiatry and Neuroscience*, *16*, 81–90.

Trivers, R. (1972). Parental investment and sexual selection. In: B. Campbell (Ed.), *Sexual selection and the descent of man* (pp. 136–179). Chicago: Aldine-Atherton.

Zona, M. A., Sharma, K. K., & Lane, J. (1993). A comparative study of erotomanic and obsessional subjects in a forensic sample. *Journal of Forensic Sciences*, *38*, 894–903.