Psychiatric Factors Associated with Dangerous Misidentification Delusions

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The delusional misidentification syndromes are characterized by misidentification delusions of others or of the self. Aggressive ideas or behaviors often accompany these delusions. The relationship between delusional misidentification and dangerousness remains for the most part poorly understood. In the present article, we compare a group of dangerous individuals suffering from dangerous misidentification delusions with a group of dangerous individuals suffering from other types of delusions. Individuals with dangerous misidentification delusions were more likely to experience grandiose ideation, thought disorder, generalized hostility, excitement, general psychopathology, and a previous history of violence than dangerous delusional individuals with no delusional misidentification. The group with dangerous delusional misidentification syndromes was less likely to attack others with weapons than were the dangerous delusional group with no delusional misidentification.

Although there has been relatively little empirical work in defining the relationship between delusions and behavior, a hypothesis commonly held by the psychiatric professional community is that individuals rarely act upon their delusions.[1] This makes sense clinically, as even in the extreme cases of chronically delusional and so-called high-risk assaultive persons housed in secure hospital settings, actualized physical violence is a low-base-rate phenomenon occurring in only a small percentage of the patients' total hospitalization time. However, studies have been conducted examining the converse—whether delusional beliefs have been associated with abnormal behavior, especially criminal or dangerous behaviors.[2] In this manner, the hypothesis that delusional thinking has a significant role in the commission of criminal behaviors or acts of violence has credence.

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Recently there has been a significant attempt to examine the relationship between delusions and action.[1, 3] These studies used both patient and informant reports to arrive at their findings and showed that actions associated with abnormal beliefs were more common than previously suggested.[1] They also found that there was no association between the delusional thinking and acting on the delusion when an informant provided information, but that when the patients themselves were queried, their actions were associated with delusional content and with dysphoric or anxious feelings associated with their delusions.[3] However these studies did not address in depth the more specific issue about the possible linkage between delusions and aggressive behavior. Therefore, considerable further exploration remains to be done before this relationship can be more fully understood.

In his review of acting on delusions, Buchanan[2] covered the different types of delusions, including persecutory, jealous, grandiose, passivity, ill health or bodily change, erotomanic, Capgras, guilt, religious, and sexual. In this article, we focus on misidentification delusions. These delusions encompass more than one category of delusional thinking, particularly persecutory, grandiose, and somatic. They also have been cited as an example of potentially "dangerous" delusions by DePauw and Szulecka.[4] In the past five years these dangerous delusions have received significant forensic attention in the anglophonic medical literature.[4–9]

The delusional misidentification syndromes are chiefly characterized by a delusion of inauthenticity regarding the identity of others or the self.[10] For example, in the most common delusional misidentification syndrome, Capgras syndrome, the affected person questions the identity of others, and as a result of this experience the person usually postulates the existence of doubles or imposters.[11, 12] Delusional misidentification can also occur in reference to the person's own self. These cases are also known as "reverse" delusional misidentification syndromes.[13]

The study of misidentification delusions provides a potential interactive model between delusions and resultant dangerous behaviors. There are several reasons for this. First, each misidentification syndrome presents with a different constellation of features that may represent potential modifiers regarding degrees of associated dangerousness. These features include such factors as paranoia, grandiosity, affective symptomatology, and emotional proximity to the delusionally misidentified object. Second, recent progress in the classification of delusional misidentification syndromes facilitates the collection of relevant psychopathology into a more cohesive system and thereby encourages more systemic study.[10, 13, 14] Third, advances in neuropsychiatric research indicate that right (nondominant) brain abnormalities,[15, 16] including face misrecognition and other forms of topographical recognition deficits,[17–19] may be associated with delusional misidentification phenomena. Therefore, misidentification delusions offer a unique opportunity to develop an integrated model of psychosis in which

phenomenologic, biological, and forensic aspects are relevant.[20] Such a model could shed light on the mechanisms of the genesis of dangerous delusions and the resultant dangerous behaviors.

In this article, we report a study of 25 subjects who suffered from aggressive delusional misidentification syndromes. This group is compared with a group of 25 aggressive delusional subjects who harbored no delusional misidentification. Factors that may predispose delusional misidentification individuals to become hostile are explored. A case is presented in order to highlight the main issues introduced by dangerous delusional misidentification.

Methods

The data were collected over a five-year period on 25 subjects suffering from nonmisidentification delusions (NMD) and 25 subjects suffering from misidentification delusions (MD). Information on demographics, dangerousness, phenomenology, and diagnosis was collected via review of records. Psychiatric diagnosis were made in accordance with DSM-III-R criteria.[21] The subjects were routinely rated, using the Brief Psychiatric Rating Scale (BPRS),[22, 23] by the first author, who had been previously calibrated on the scale. Criteria for dangerousness consisted of either serious verbal aggression or physical aggression. Serious verbal aggression was defined as oral threats to harm another that had led to the subject's civil or criminal confinement. Physical aggression or violence was defined as any attack that culminated with bodily contact. The use of weapons by the attacker was also recorded.

All subjects were rated for misidentification delusions. Although we have so far used the term "misidentification delusions," controversy remains as to whether these delusions in fact comprise a separate syndrome. We will use hereafter the term "delusional misidentification syndrome" interchangeably with "misidentification delusions," because much of the world's literature uses the term *syndrome;* for example, "Capgras syndrome" instead of "Capgras delusion." The following definitions were used for delusional misidentification of others: the Capgras delusion occurs when an individual believes that there has been a radical change in the psychological, but not physical, appearance of another;[10–12, 24, 25] the Frégoli delusion occurs when an individual believes in a radical change in the physical, but not psychological, identity of another;[10, 26, 27] the intermetamorphosis delusion occurs when a person believes in radical changes in both the physical and psychological identities of another.[10, 28, 29] Definitions for delusional misidentification of the self include the following: the "subjective" Capgras delusion occurs when the delusional person believes that physical replicas of him/herself exist although these replicas have different psychological identities (minds) from that of the person's original identity;[7, 30] the "reverse" Capgras delusion occurs when an individual believes that his/her own psychological, but not physical, identity has radically changed;[10, 13] and the "reverse" intermetamorphosis delusion occurs when the delusional person believes that he/she has

undergone fundamental changes in both physical and psychological identities.[10, 31]

The MD group was compared to the NMD group in regard to each BPRS item, total BPRS score, and five BPRS subfactors,[23] the presence of grandiose delusions, the presence of persecutory delusions, physical violence, and whether weapons were used during an attack. Only the index delusions present during the evaluation were included in the present analysis. Categorical variables were analyzed using the Pearson chi-square statistic on SPSS software (SPSS Inc., Chicago, IL). Interval variables were analyzed using the two-tailed *t* test statistic on SPSS.

Results

Both the MD and NMD groups consisted of 23 males and two females. The average ages for the MD and NMD groups were 36.1 and 37.2 years, respectively. The MD group consisted of 11 African-Americans, four Hispanic whites, one Hispanic black, eight other whites, and one Asian. The NMD group contained five African-Americans, 10 Hispanic whites, one Hispanic black, eight other whites, and one Native American. The MD group included 14 single, seven divorced, and four married subjects; the NMD group included 17 singles, one separated, four divorced, and three married subjects. Members of the NMD group were significantly more likely to attack others using weapons ($\chi^2 = 8.117$, $df = 1$, $p < .01$). No statistically significant differences were noted in regard to nonweapon attacks. Individuals in the MD group were significantly more likely to have a violent history independent of dangerous behaviors resulting from a misidentification delusion ($\chi^2 = 17.01$, $df = 1$, $p < .01$). Grandiose delusions were significantly associated with dangerous misidentification delusions ($\chi^2 = 18.47$, $df = 1$, $p < .01$). All but 1 of the 50 subjects suffered from paranoid delusions. The specific components of the BPRS results that were found to show statistically significant differences between the MD and NMD groups are presented in Table 1.

The diagnostic profile for both the MD and NMD groups is presented in Table 2. Table 3 illustrates the types of misidentification delusions encountered in the MD sample.

Table 1
BPRS Scores by Group

BPRS Scale	MD Group	NMD Group	*t* test
Grandiosity	3.64	1.72	3.69†
Unusual thought content	6.00	3.12	5.01†
Excitement	3.40	2.68	2.06*
Thought disorder subfactor	21.60	16.16	4.71†
Hostility subfactor	14.68	11.88	2.61†
Total BPRS score	49.64	42.36	3.60†

*$p < .05$.
†$p < .01$.

Table 2
Diagnostic Distribution by Group

	MD Group	NMD Group
Paranoid schizophrenia	18	19
Schizoaffective disorder	3	1
Organic delusional disorder	1	0
Psychotic disorder not otherwise specified	2	5
Bipolar disorder	1	0

Case History

Mr. A is a 30-year-old man who was involuntarily psychiatrically hospitalized after hitting his sister with his hands. At that time his sister was carrying her baby in her arms and, as a result of the attack, her baby fell on the floor. Mr. A attacked her because of his belief that she had been replaced by a malevolent double. He further believed that his sister, mother, and grandmother had been replaced by physical doubles who were Mafia members with plans to kill him. Mr. A believed the original family members had been kidnapped by the Mafia. Mr. A became hostile toward the misidentified family members because they questioned his grandiose claims of supernatural powers and delusional misidentification. On one occasion he had held a gun to the alleged "double" of his grandmother. On another occasion he had threatened to burn the house down in order to destroy the doubles. On still another occasion, Mr. A had turned on the gas during the night intending to kill the impostors of his family. He also had a history of assaulting strangers and police officers, whom he did not misidentify.

In the index hospitalization, Mr. A had become agitated and combative toward hospital staff, none of whom he misidentified. He believed that he possessed spiritual powers upon which he declined to elaborate. His mood was labile and his affect was hostile. He denied a history of head injury or major physical illness. There was no family history for mental disorder.

His physical, including neurological, examination was unremarkable. His routine serum chemistry panel, complete blood count, and urinalysis were within normal limits. Mr. A met DSM-III-R diagnostic criteria for psychosis not otherwise specified.[21] He was treated with haloperidol with substantial diminution of his paranoia, anxiety, agitation, and impulsivity. His misidentification delusions, however, persisted.

Table 3
Frequency of Misidentification Delusions

Type of Delusion	N (%)
Capgras	15 (33.3)
"Reverse" Capgras	14 (31.1)
"Subjective" Capgras	2 (4.4)
Frégoli	2 (4.4)
Intermetamorphosis	6 (13.3)
"Reverse" intermetamorphosis	6 (13.3)
Total	45 (100)*

*Total N > 25 because a person can experience more than one type of misidentification delusion.

Discussion

Both groups were 92 percent male, consistent with the approximately 90 percent male population of the facilities from which the subjects were collected. In general, however, misidentification delusions probably have a similar frequency in both

genders, although the literature suggests a slight female predominance.[24, 25] There was no significant difference between the mean ages of the MD group (36.1 years) and the NMD group (37.2 years). Both groups were composed of about one-third other white individuals, with the remaining subjects divided primarily among Hispanic whites and American and Hispanic blacks. These ethnic distributions are representative of the racial and ethnic compositions of the institutions from which the subjects were gathered. Members of both groups were largely not married (single and never married, divorced, or separated) at 84 percent for the MD group and 88 percent for the NMD group. The marital status of the subjects likely reflects the well-known difficulties encountered by psychotic individuals in developing interpersonal relationships.[32]

The case of Mr. A is representative of the MD group in that he harbored paranoid delusions. In fact, 96 percent of the MD subjects suffered from paranoid delusions. Diagnostically, paranoid schizophrenia is the most common mental disorder noted in prior studies of delusional misidentification,[24, 25, 33] and this was also the case for the current MD sample. However, the frequency of paranoid schizophrenia is essentially the same for the MD and NMD groups in this study (see Table 2). These results, coupled with no significant differences in paranoid delusional content between the MD and NMD samples, suggest that the paranoid component in misidentification delusions alone cannot adequately explain predisposition toward aggressive ideas and actions. Nonetheless, paranoid delusions in general may predispose aggressive individuals to become more violent.[34]

The case of Mr. A is illustrative of the Capgras delusion with his mother, sister, and grandmother as the delusionally misidentified objects. These three relatives qualify as Capgras objects because Mr. A conceptualized them as physical replicas of the original relatives who now had radically changed minds from the "real" relatives.[10, 11] As reported in Table 3, the Capgras delusion was the most frequently reported delusion, accounting for one-third of the misidentification delusions in our sample. The "subjective" and "reverse" Capgras variants accounted for another 35.5 percent of the misidentification delusions. The intermetamorphosis and "reverse" intermetamorphosis delusions were the next most frequent, with a combined frequency of 26.6 percent. The Frégoli delusion accounted for 4.4 percent of the misidentification delusions. The decreasing frequency of the different types of misidentification delusions from Capgras to intermetamorphosis to Frégoli has been noted previously.[29, 35] However, the significance of these frequencies for different misidentification delusions, if any, remains unclear. Furthermore, the present results do not allow us to differentiate as to whether or not specific types of misidentification delusions carry a different risk for dangerousness. These questions may be explored when larger numbers of specific dangerous misidentification delusion subjects become available for analysis.

Some misidentification delusions involving the self involve grandiose delusions. This may be the case because these

persons frequently misidentify themselves for powerful and famous people. These delusions can drive some individuals to attack others who do not acknowledge the subject's new personal identity.[7] In the present study, misidentification delusions were significantly associated with grandiose delusions, consistent with previous findings.[7] The case of Mr. A illustrates some of these interactions. Mr. A displayed not only misidentification delusions, but also paranoid and grandiose components to his delusions. Although he did not misidentify himself, he believed he had special supernatural powers and would become especially angry at the delusionally misidentified and mistrusted relatives when he learned that they did not share in this grandiose belief. This realization made him even more motivated to harm his relatives.

When weapons were used during an attack, the NMD group was more likely to use them than the MD group. However, neither group showed a preference for unarmed assaults. A possible explanation for these results is that the NMD subjects are more organized in their abilities to plan than the MD subjects and therefore are more successful at procuring weapons as mapped out by the plan of attack. The results of the BPRS suggest this possible interpretation. First, if the total BPRS score is assumed to be an indicator of overall psychopathology, the MD group is significantly more impaired than the NMD group. Second, the thought disorder subscale score is also significantly higher for the MD than NMD group. This subscale is associated with very severe psychopathology, which impairs the individual's reality testing and ability to plan logically and hence to obtain a weapon.

The BPRS grandiosity item resulted in a significantly higher score for the MD than the NMD group. This result follows from the previously discussed finding that dangerous MD subjects suffer from more delusional grandiosity than NMD subjects. The finding that excitement as measured by the BPRS is also significantly greater for MD subjects than NMD subjects is consistent with the results on grandiosity, because both grandiosity and excitement can be found to co-occur in psychotic states. The BPRS "unusual thought content" item was found to be significantly associated with the MD group. This is not unexpected given that delusional misidentification by its very nature presents with unusual ideas that may be termed as bizarre in content.

In conclusion, the results of the present study provide the first evidence that as a group dangerous MD subjects, in comparison with dangerous NMD subjects, may have a higher level of overall psychopathology, higher degree of delusional grandiosity, and greater thought disorganization. The results of our study also suggest that subjects from the MD group may suffer from a greater degree of general hostility. However, this hostility may not always be translated into physical aggression as subjects from the NMD group appear to be better organized and as a result more capable of creating plans of attacks and executing such plans.

An important aspect of our study is that it represents the first known attempt in which a group of dangerous MD individuals has been studied using a control

group. To our knowledge, it is also the first study to employ a psychometric approach in the study of aggression in the context of delusional misidentification. It is important to emphasize that the findings of our study are preliminary in nature, and better characterization of relevant factors in dangerous misidentification delusions must await more stringent classification and measurement of delusional misidentification phenomena. In addition, more comprehensive measures of psychopathology may need to be employed in order to have a better understanding of potential interactions between misidentification delusions and other markers of psychopathology and dangerousness.

The results of the present study cannot determine whether misidentification delusions are more frequent and more dangerous in community settings than are other delusions. We emphasize that although our data suggest that misidentification delusions may represent an additive risk factor for aggression in comparison to other delusions, this preliminary finding awaits replication. Because of the preliminary nature of our findings, misidentification delusions can be considered only a risk factor in evaluating a psychotic patient's level of dangerousness. Finally, the lifetime prevalence of dangerous misidentification delusions will require careful phenomenologic and forensic characterization of large well-controlled samples of psychotic individuals in the community. An integrated phenomenologic, forensic, biologic, and epidemiologic approach may eventually lead to better mechanistic models of the dangerousness posed by persons with psychotic disorders involving delusions.

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