Capgras’ Syndrome and the Delusions of Misidentification

by SCOTT A. SPIER, MD

Few syndromes in psychiatry have proven so intriguing and sparked such interesting and intense debate as the one initially described by Joseph Capgras and J. Reboul-Lachaux in 1923.¹ The debate over Capgras’ syndrome and the related delusions of misidentification illustrates the shift from psychodynamic to organic explanations of etiology in psychiatry, and the quest for synthesis of these potentially disparate viewpoints.

THE SYNDROMES

Capgras’ syndrome is the prototypic and most common of the so-called delusions of misidentification, of which there are at least four (Table 1). Each is a paranoid delusion, or hallucination, and is normally only one system of an underlying psychotic disorder. Treatment is aimed at the underlying disorder and usually the delusion improves or clears with successful treatment of the underlying psychosis.² Delusions of misidentification often develop later in the course of an illness, and they are more commonly seen in seriously ill and treatment-resistant cases.³ Because of their colorful nature, delusions of misidentification often overshadow other features of the presentation.

Capgras’ syndrome is the belief that a person important to the patient, usually a spouse or close relative, is not who he or she claims to be, but has been replaced by a nearly exact replica, a double who impersonates the original. For example, the patient may deny that her husband is truly her husband, as her real husband is kinder and more caring than the present imposter.

Later in the course of the delusion, other people, for example, the
TABLE 1
Delusions of Misidentification

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>First Description</th>
<th>Delusional Belief</th>
<th>Relative Frequency</th>
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<tbody>
<tr>
<td>Capgras’ syndrome</td>
<td>Capgras &amp; Reboul-Lachaux, 1923</td>
<td>Persons close to the patient have been replaced by imposters</td>
<td>Fairly common</td>
</tr>
<tr>
<td>Fregoli</td>
<td>Courbon &amp; Frail, 1927</td>
<td>Benign persons in the environment are actually persecutors in disguise</td>
<td>Infrequent</td>
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<tr>
<td>Syndrome of intermetamorphosis</td>
<td>Courbon &amp; Tusques, 1932</td>
<td>Person A becomes B, B becomes C, C becomes A, etc.</td>
<td>Infrequent</td>
</tr>
<tr>
<td>Delusion of subjective doubles</td>
<td>Christodoulou, 1978</td>
<td>Exact psychologic doubles of oneself exist with Capgras’</td>
<td>Rare, usually exists</td>
</tr>
</tbody>
</table>

police or the hospital nurse, also often are accused of being impostors. Capgras’ syndrome has been reported in patients as young as eight years of age, as well as in elderly demented patients. It occurs more often in women, and may follow a period of intense sexual preoccupation. Persecutory beliefs that one is being poisoned are sometimes seen. Patients frequently insist that minute differences exist between the impostor and the original, for example in skin texture, the shape of the nose, or how the hair is combed. An excellent example of Capgras’ syndrome was presented in Merrin and Silberfarb’s 1976 review of the syndrome:

The patient, a 52-year-old, thrice-married housewife, admitted herself to the Dartmouth-Hitchcock Mental Health Center to “prove to my husband I’m not crazy.” In a long, angry monologue she told the staff that her husband’s twin brother (there is no such person) had been intermittently taking his place since their marriage four years before. In addition, she claimed her husband was trying to poison her food and kill her with gas from the kitchen range. She had become increasingly tense, suffered middle insomnia, and lacked ambition to do her housework. She was hoping to rest and get her “nerves together” in the hospital.

The “substitution” first occurred on their wedding day, when her husband went to the men’s room and an impostor took his place. As evidence, she produced snapshots from the wedding, comparing pictures of her husband and his “twin.” When the pictures failed to prove convincing, she claimed that the best ones had mysteriously disappeared. Although unemployed and living on welfare, she believed that she was married for her money and that an attempt was being made to drive her crazy. In addition, she complained that her husband had been making excessive sexual advances, constantly putting his hands on her and even inspecting her genitals with a flashlight at night. She herself had little interest in sex.

The subject’s account was given in circumstantial detail with moderate pressure of speech. Except for its delusional content, the speech was coherent and showed no other evidence of a thought disorder. Her affect was angry and tense, with no sign of depression or elation. She denied hallucinatory experiences.

The Fregoli syndrome, described by Courbon and Frail in 1927, is named after the European actor who could change the appearance of his face on stage. It is the delusion that the patient’s persecutors have changed their faces to look like familiar persons in the patient’s environment. For example, the postman or nurse is actually the patient’s persecutor in disguise.

In the syndrome of intermetamorphosis, identified by Courbon and Tusques in 1932, the patient believes that those around him have changed place with one another, person A becoming person B, B becoming C, and C becoming A.

The syndrome of subjective doubles, delineated by Christodoulou in 1978, is rarely reported alone, and usually occurs in the setting of the Capgras’ syndrome. Here, the patient believes exact psychologic doubles of himself exist. The original patient described by Capgras believed doubles of herself existed.

More than one delusional syndrome can occur in a single patient. Some authors subdivide these syndromes further, and some describe variants such as “reverse Fregoli,” where the patient believes others misidentify him, and “reverse subjective doubles,” where the patient believes he is an impostor. However, the first four syndromes above are the most frequently discussed, and Capgras’ the most commonly reported. The others are probably best viewed as variants of Capgras’ syndrome.
HISTORICAL PERSPECTIVE

The concept of the double has proved intriguing to mankind for centuries, appearing widely in myth and literature. Capgras originally described his syndrome as "l'illusion des sosies," sosie being the French word for double. Sosie is from the Greek So sia, who was the servant to Amphityron and was replaced by Mercury masquerading as Soisias, so as to allow Zeus to seduce Amphityron's wife, Alcmena. Zeus, in turn, seduced Alcmena by taking on the form of Amphityron.

The Egyptian concept of the Ka, or one's double, is well known. Less well known are myths from Ireland, Indonesia, and Australia, which involve the concept of the double, misidentification, and metamorphosis.

Several more modern authors, some of whom suffered from neuropsychiatric disorders, describe delusions of misidentification in their work. Poe describes Capgras' syndrome in William Wilson. Dostoevsky, himself beset by temporal lobe epilepsy and related psychiatric symptoms, often explored the concept of the double in his works, and Capgras' syndrome specifically in The Possessed. In it Marya Tinofeyona believes her husband Stavrogin has been replaced, saying: "You are like him, very like him, perhaps you are a relation—only he is a bright fellow and a prince, and you are an owl and a shopman" (cited in 9). Dostoevsky described the syndrome of subjective doubles in The Double. Guy de Maupassant, probably suffering from neurophilis, also described the syndrome of subjective doubles, as did Percy Bysshe Shelley and Goethe.

FREQUENCY

Capgras' was initially considered a rare and exotic disorder. As of 1976, 46 cases had been reported in the English literature. However, by 1983 there were approximately 170 and by 1987, 315.

Anecdotal estimates in a private psychiatric practice found an incidence of 0.3%, and 0.75% in an inpatient setting. One report claimed a prevalence of 15% in adult inpatients diagnosed as having schizophrenia.

A retrospective chart review of all presentations to the Psychiatric Emergency Service at Jackson Memorial Hospital found an incidence of Capgras' syndrome of 0.14% of 4,200 unduplicated patient presentations. That number was probably low, as Capgras' syndrome was not asked about systematically. Interestingly, the majority of cases of Capgras' presented with a chief complaint of violence toward a significant other, and all had either defined organic CNS lesions (two thirds) or a history of extensive substance abuse (one third).

Delusions of misidentification may occur more frequently in elderly patients. Burns et al found that 12% of Alzheimer's patients misidentified persons. Thirty percent reported misidentifications of any type, 13% had visual hallucinations, and 12% had auditory hallucinations. Patients with misidentification of people had a younger age of onset of Alzheimer's. Development of Alzheimer's at a younger age is thought to be a marker of parietal lobe damage.

RELATED SYNDROMES

A number of other syndromes, psychiatric and neurologic, are related to Capgras', besides those already mentioned (Table 2). Cotard's syndrome is the belief that one's body organs have vanished, or are rotting, or the belief that one is actually dead. Lycanthropy is the belief that one has been transformed into an animal. Erotomania is occasionally reported in asso-

### TABLE 2

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Essential Features</th>
<th>Comparison to Delusions of Misidentification</th>
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<tr>
<td>Cotard's</td>
<td>Belief one is dead</td>
<td>May involve feelings of jamais vu, as in Capgras'</td>
</tr>
<tr>
<td>Lycanthropy</td>
<td>Belief one is actually an animal</td>
<td>A delusional misidentification of self</td>
</tr>
<tr>
<td>Erotomania</td>
<td>Unrequited infatuation and preoccupation</td>
<td>Has been reported in conjunction with Capgras'</td>
</tr>
<tr>
<td>Prosopagnosia</td>
<td>Inability to recognize familiar faces</td>
<td>In delusions of misidentification, the object is correctly recognized, but delusionally identified</td>
</tr>
<tr>
<td>Autoscopy</td>
<td>Hallucination of oneself</td>
<td>May be equivalent to the syndrome of subjective doubles</td>
</tr>
<tr>
<td>Reduplicative paraphrenia</td>
<td>Misidentification primarily of places</td>
<td>May be equivalent to Capgras' but with less flagrant psychiatric symptoms</td>
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Capgras’ Syndrome

 association with Capgras’ syndrome.  

Protopagnosia, a neurologic disorder often secondary to stroke, is the inability to recognize faces previously familiar to the patient.  

Classically, it is associated with a visual field cut and a disturbance in color vision. The patient retains the ability to differentially recognize newly presented faces, but has lost the ability to visually recognize familiar ones, and instead will identify persons by their voice, clothes, mannerisms, etc., often to the dismay of patient and family alike. It is fundamentally different than Capgras’, because in the delusions of misidentification, the object of the delusion is clearly recognized, but incorrectly identified. Patients with prosopagnosia demonstrate changes in skin conductance suggesting recognition autonamously, but are not aware of and cannot verbalize recognition. Most frequently, lesions causing prosopagnosia are located in the right hemisphere, especially the right inferior occipitotemporal area.

Autopsychia has a range of definitions. It is seen by some as a psychiatric disorder and by others as a neurologic disorder. In the narrowest sense, it is defined as hallucinating a form of oneself, and thereby as equivalent to the syndrome of subjective doubles. In its widest sense, it is defined as a feeling of leaving one’s body and viewing it from afar, akin to the phenomena of depersonalization and derealization.

Devinsky et al.18 found autopsychia in 6.3% of patients with epilepsy. Although patients usually found it a highly disturbing symptom, they rarely reported it to their physician. In cases where autopsychia occurred as an ictal or postictal phenomenon with an identifiable focus on EEG, the focus was usually (86%) the temporal lobe. The phenomenon also often occurs in near-death situations such as drowning and motor vehicle accidents. As in Capgras’ syndrome, patients often describe slight physical differences between themselves and their double. Devinsky et al. hypothesize that autopsychia is a phenomenon that is initiated by the triggering of inborn neuronal pathways that adaptively allow us to remain calm in the face of trauma.

Reduplicative paramnesia, described first by Pick in 1903, normally involves a patient claiming to be in a nearly exact duplicate of the locale that he is in. He will, for example, insist that there are two Universities of Maryland, and that the one where he is located is in his own hometown of Chicago, Illinois, despite the gross inconsistency. Patients are often aware of these obvious incongruities, and offer simplistic explanations to account for them.

Weinstein and Burnham19 note that reduplicative paramnesia often follows head injuries, when patients develop periods of retrograde amnesia, denial, confabulation, and disorientation to time and place. Although previously thought to require bifrontal and right parietotemporal lesions, it is now clear that other lesions also occasionally produce this phenomenon. It has been said that the main difference between reduplicative paramnesia and Capgras’ syndrome is that the former involves places and the latter, people; but in fact, some patients with reduplicative paramnesia do also duplicate persons, and some Capgras’ patients reduplicate places. It may only be the presence of other psychiatric symptoms that sets Capgras’ syndrome apart from reduplicative paramnesia.

EVOLUTION OF PATHOPHYSIOLOGIC HYPOTHESES

Capgras considered his case to be nonorganic and caused by psychodynamic conflicts, as there was no disorientation or sensory impairment. Capgras suggested the delusion was a defense against the intense depersonalization and derealization experienced by his patient. Earliest psychodynamic explanations, noting that the syndrome had been reported only in women, suggested it was caused by oedipal conflicts. In 1933, when a case in a man was reported, he was assumed to be a latent homosexual.

Other authors, noting the prevalence of the concept of the double in myth, suggested that Capgras’ syndrome represented a regression to more primitive modes of thought. More recently, Koritar and Steiner20 attempted to synthesize psychodynamic and organic theories by suggesting that either organic or psychodynamic processes could force regression to such primitive thought processes.

However, most recent psychodynamic hypotheses now involve the concepts of projection, ambivalence, and splitting. Berson, in his 1983 review,21 articulated this position well, and pointed out that the delusion appeared to be a perfect way of dealing with intense, ambivalent, positive and negative views of an object. The original became all good, and the impostor all bad, allowing these opposing emotions to be contained.

Such an explanation makes perfect logical sense—it wouldn’t take
a psychiatrist to see the value of such a psychological response to opposite emotions. Yet organic factors have been reported in a growing number of cases, and Vie suggested as early as 1930 that Capgras' syndrome is an organic psychosis. Capgras' and the delusions of misidentification have been found in association with many forms of right cerebral dysfunction, subarachnoid hemorrhage, closed head injury, pseudohypoparathyroidism, myxedema, nephrotic syndrome, dementia, migraine, epilepsy, and other forms of specific and diffuse brain injury.

Merrin and Silberfarb first emphasized that central nervous system dysfunction was important, noting that 26% of the cases they reviewed had "organicity reported," and that patients tended to be older than expected if their illness were primarily "functional." As awareness of this possibility increased, and as neuropsychiatric diagnostic techniques became more advanced, the number of cases with organicity increased. When Singer reviewed 315 cases in 1987, 40% had evidence of an organic contribution to the etiology.

Given the weight of evidence for a role of demonstrable organic factors, many have suggested that the presence of Capgras' syndrome should alert the clinician to the need for a thorough medical evaluation. The likelihood of finding organicity may depend mostly on the enthusiasm with which the workup is undertaken.

Joseph and colleagues have compared the CT scans of 10 Fregoli patients with 10 controls, and 12 Capgras' patients with 12 controls, all controls being matched for age and psychiatric diagnosis. He found increased bilateral frontal and temporal lobe atrophy in both subject groups.

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Delusions of misidentification may occur more frequently in elderly patients.

The quest for a single, focal lesion that produces Capgras' syndrome has proved elusive. There is much to suggest a role for the right hemisphere, and/or the parietotemporal areas. Support for this localization includes the role of the right parietal hemisphere in body image, the frequency of right cerebral dysfunction in Capgras' cases, the frequency of derealization and depersonalization, increased misidentifications in Alzheimer's patients who probably have parietal lobe damage, and the likelihood that seemingly similar syndromes, namely prosopagnosia, autosity, and reduplicative amnesia, also appear to involve these areas preferentially. However, Capgras' also occurs in patients with bilateral and more diffuse cerebral dysfunction.

How might diffuse organic brain disease lead to Capgras' syndrome? Joseph has suggested that in the delusions of misidentification, the different "images" of an important person, developed by the differentially functioning left and right brains, fail to concur, leading to the development of a delusion to explain this incongruity. Similarly, as early as 1935, Dembrowski suggested that the delusion was brought about by a simultaneous intellectual recognition and affective nonrecognition.

This "affective nonrecognition" may be due to the frequent presence of feelings of strangeness and/or derealization and depersonalization experienced by Capgras' patients at the onset of their delusion and not by many authors, including Capgras himself. Patients are often seen to first examine the "impostor" carefully, until finally they arrive at perceived differences between the impostor and the original, which can explain their disquiet. Both organic and psychodynamic proponents agree on the importance of derealization and depersonalization in Capgras' syndrome.

The central role of depersonalization and derealization would explain why patients with Capgras' so frequently have organic dysfunction, especially temporal lobe disease, and why Capgras' has been reported to subside as epileptiform activity subsides.

Wilcox and Waziri and Lewis suggest that Capgras' syndrome is best viewed not as a delusion or illusion, but as a confabulation. Using the same reasoning, Weinstein and Burnham suggest that Capgras' may be related to depersonalization and derealization in the same way that reduplicative amnesia is related to retrograde amnesia and denial. They demonstrate that there is little advantage in viewing Capgras' and reduplicative amnesia separately, and suggest that delusional and confabulatory material seen in the delusions of misidentification and reduplicative amnesia simply have symbolic and adaptive aspects. The nature of the illness, they propose, determines the type of delusional or confabulatory material produced.

If this is the case, the content of the patients' perceptions and thought will be determined by the psychology of the patient and his circumstance, but the original offending misperception itself appears likely to be triggered by an organic process.
CLINICAL PRACTICALITIES

From a clinical viewpoint, the presence of Capgras' syndrome is important for several reasons.

First, it has been associated with increased propensities for violence. Therefore, Capgras' might be added to the list of reasons to consider the need for inpatient hospitalization, either voluntary or involuntary. When present, patients may need more intensive treatment, whether as inpatients or outpatients.

Second, its presence should be taken as a marker of potential organic brain disease. A thorough neuropsychiatric evaluation should be undertaken, and should include medical history and physical examination, usual chemistries and blood studies, EEG (preferably sleep-deprived), CT or MRI, and neuropsychologic testing. Such an evaluation may not be feasible when patients are acutely ill and may need to await stabilization, but should be performed at least once for every patient with Capgras' syndrome.

Third, clinicians should recall that Capgras' may be an indicator of a more severe, chronic, and treatment-resistant illness, possibly because of the presence of structural deficits.

Fourth, it may suggest that anti-convulsant agents, including carbamazepine and clorazepate, should be considered as adjunctive or even primary agents in psychotic patients with the syndrome of Capgras.

Given these treatment ramifications, questions about delusions of misidentification should be incorporated into one's mental status examination of patients with apparent paranoid psychoses and deliria, especially when organic brain dysfunction is suspected. A useful, brief screening question is, "Do you ever feel people around you aren't who they claim to be, or might be impostors?" Further sensory misperceptions can be sought by asking more general questions, eg, "Do people's faces, including your own, ever seem to change, or look different to you in any way?" Further questioning should be pursued, depending upon the response to these screening questions.

CONCLUSION

Capgras' syndrome is important for these clinical reasons, and for the theoretic questions it raises.

The manner in which it intertwines the psychologic and the organic is perhaps most significant. As Weinstein and Burnham seem to imply, it is a bridge between the mind/body and psychodynamic/biologic dualisms that continue with us. Capgras reminds us that psychologic and symbolic meanings are present in thought when disturbances of thought are clearly mediated organically.

The apparent prominent role of organic factors, especially derealization and depersonalization, raises questions as to whether other types of paranoia require first a sensory misinterpretation that is then explained in incorrect and maladaptive manners. The paranoia seen in dementia and the "paraphrenias" of elderly patients who develop sensory losses are striking examples. Perhaps patients with paranoid schizophrenia and paranoia tend to be older and to have more isolated symptomatology because subtle organic lesions are important in the development of their delusions as well.

Finally, Capgras' syndrome is a revealing historical mirror of how we understand the pathology that we treat. It chronicles the evolution of our discipline. As such, it should remind us of the need to remain humble: although we can neatly and often usefully explain pathology psychodynamically, there is often much about that pathology that we have yet to grasp.

REFERENCES