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The Syndrome of Capgras*

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Summary. In eleven patients with the syndrome of Capgras, the clinical data and the results of electroencephalographic, echoencephalographic, air-encephalographic, psychological and brain-scanning investigations are presented and discussed. All patients were psychotic: six were schizophrenic, four were depressive and one suffered from an organic psychosis. A paranoid element was marked in all cases.

The present evidence supports the view that organic factors are important in the pathogenesis of Capgras' syndrome.

Introduction

The syndrome of Capgras, a rare psychopathological manifestation classified under the heading of 'delusional misidentifications' (Coleman, 1933) was originally described in 1923 by Capgras and Reboul-Lachaud who termed it l'illusion des sosies' (the illusion of doubles). It was some years later that Lévy-Valensi (1929) called it 'syndrome of Capgras'. Yet, thirty years before its original description Magnan (1893) had described a condition corresponding to the syndrome without thinking of giving it a particular name, and so had Bessière in 1913.

The essence of the syndrome of Capgras is the delusional negation of identity of a familiar person. The patient believes that a person closely related to him has been replaced by a double, and although he does not dispute the misidentified person's extreme resemblance to the familiar person, he nevertheless believes that they are in fact different.

The syndrome of Capgras is closely related to two even more rare phenomena, namely the syndrome of Frégoli (Courbon and Fail, 1927) and the syndrome of Intermetamorphosis (Courbon and Tusques, 1932). The syndrome of Capgras may be regarded as a delusional hypo-identification, while both the syndrome of Frégoli (Christodoulou, 1976) and the syndrome of Intermetamorphosis may be termed delusional hyper-identifications. The syndrome must also be differentiated from the rather banal false recognitions which occur in confusional states and the transient misidentifications encountered in mania.

Owing to the rarity of the Capgras syndrome, and also owing to its impressive clinical manifestation, most publications deal with case descriptions presented as scientific curiosities. Very few attempts have been made to study this colourful syndrome systematically. In view of this it was thought that detailed clinical and laboratory investigation of eleven cases might be justified. Furthermore, it was thought that the possibility of organic participation to the pathogenesis of the syndrome should be more specifically investigated because, since the syndrome is basically characterized by a defective integration of the normally fused functions of perception and recognition, a neurophysiological or other organic cause might be pathogenetically important.

Material and Methods

Eleven patients with the syndrome of Capgras were studied clinically and were also investigated by routine laboratory methods and by electroencephalography (standard and sleep recordings, sphenoidal electrodes (Christodoulou, 1967)), psychological tests (Wechsler's adult intelligence test, 1958; Rey's 'copy of a

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figure' test, 1959; Benton's test for visual retention, 1965), air encephalography, brain-scanning and echoencephalography.

Five subjects were in-patients of Eginition Hospital, Athens University Department of Psychiatry, while four subjects were in-patients of Tripolis Psychiatric Hospital. Two subjects were studied and investigated as out-patients.

All patients were studied and followed up personally by the author, and they were all investigated by the same laboratories.

Case Reports*

Case 9, J.D., aged 60

This married housewife was admitted to Eginition Hospital in November 1972 following an exacerbation of her depressive illness and the development of Capgras delusions.

The patient, described as premorbidly perfectionistic and touchy, is the youngest of the five children of an intelligent and affectionate farmer who suffered from depression and committed suicide and of an emotional and sociable housewife who died at the age of 30 when J.D. was only three years old. The patient was brought up by a blind grandmother. She was very unhappy at school because she felt inferior to other children, but she was a good scholar. At the age of 32 she very reluctantly agreed to her arranged marriage to a submissive and dull shoemaker. Her relationship with him was very poor and all her emotional investments were centred on her two daughters.

Her illness commenced three years after the menopause and shortly after separation from her elder daughter, who left for Athens in order to study nursing. The patient developed depression, insomnia and hypochondriacal complaints. Her sleep improved with minor tranquillizers, but depression persisted, and two years later, when her younger daughter also left the village for good, her depression deepened even further. One month before her admission she developed pneumonia with high fever and the village doctor prescribed antibiotics. During her illness she is reported to have appeared disorientated and confused. Some days after the end of her pyrexia, and while in a state of clear sensorium, she suddenly started making statements such as 'My daughter had her baby with a soldier and not with her husband.' She also claimed that both her daughters had turned into prostitutes. She was agitated and overtly depressed. After a sleepless night she told her husband that her daughters were no longer alive, and in a state of despair she started acousing various neighbours of having killed them. As it was impossible to persuade her that she was wrong her relatives decided to take her to Athens, hoping that if she saw that her daughters were alive and well she would be convinced that she was unduly worried. Unfortunately this had the opposite effect, as it was then that she developed the syndrome of Capgras. She looked at her elder daughter carefully, inspected her facial characteristics, asked her to turn round and to take off her shoes and walk, and after a few minutes' hesitation she decided that 'this person' was only the double of her real daughter.

The same sequence of events took place when she met her younger daughter, whom she accused of having put a wig on her head for the purpose of deceiving her. She refused to talk to her daughters and expressed fears that the 'doubles' would poison her; she became more depressed, refused food and claimed that her bedclothes were really shrouds prepared for her funeral. Next morning she was stuporose. She was taken into hospital. She was restless and tearful, expressed ideas of self-blame and of suicide and in agony kept pleading for forgiveness for her sins. She blamed herself mainly because, as she said, her 'real' daughters had developed into prostitutes and had eventually been killed all because of her being a bad mother.

During her stay in hospital she refused to see the 'doubles' or answer the 'fake' letters of her younger daughter.

The patient was diagnosed as suffering from involutional depression. She was treated with antidepressants and major tranquillizers and in four weeks' time she was symptom-free and had gained partial insight into her previous condition, including her Capgras delusions.

Case 10, P.K., aged 43

This married housewife was admitted to Eginition Hospital with Capgras delusions concerning her husband.

The patient, a stubborn, suspicious and histrionic woman, is the second of the five children of a popular, extraverted father and an obsessional mother. Early development was normal. She graduated from elementary school and at the age of 27 she reluctantly married a man 16 years her senior, described by her as aggressive and egotistical though by other informants as calm and patient, with whom she developed a negatively charged relationship. She is the mother of three children.

At the age of 31 the patient started accusing her husband of infidelity, acting strangely and expressing hypochondriacal ideas. Her condition deteriorated

* Two case histories will be reported here. The full histories can be obtained on application to the author.

shortly after the death of her mother, when she ceased to speak to her husband. This refusal later extended to everyone in the village except her children and the domestic animals. Her behaviour became bizarre and unpredictable. One year before her admission, she suddenly started talking again, first to her father and later to her husband. Her relatives at first believed that she was her old self again, but their hopes were frustrated when she reported to the police that her husband had died and that an identical-looking man had taken his place. She put on black dress in mourning of her 'late' husband, refused to sleep with his 'double' and angrily ordered him out of the house, shouting 'go to your own wife'. On another occasion she reported to the police that 'this impostor' was inviting other men to her house and they all tried to rape her. She also reported that her husband's double took away her belongings and replaced them with identical-looking objects.

On admission to hospital the patient was dressed in black and when asked about her marital state replied that she was a widow. Orientation and memory were correct and attention was increased by her strongly paranoid attitude. She was voluble and at times euphoric, though she stated that she was feeling depressed (because her children had lost their father). When she was asked about the identity of the man who had brought her to hospital she replied, without looking at him, that she had no idea, and then suddenly turned to him and hit him in the face.

The patient was diagnosed as suffering from paranoid schizophrenia. Four weeks after commencement of antipsychotic treatment, when asked whether her husband was dead, she replied that no one was dead and later she admitted that since 'this man' lived in her house he must be her husband. Her partial insight coincided with, and probably precipitated, a severe depressive bout. She was given a course of ECT in combination with trifluoperazine, whereupon her depression lifted and she gained full insight into her condition, including her Capgras delusions.

Evaluation of Clinical and Laboratory Findings

All patients with the syndrome of Capgras were psychotic, and the nosological setting in which the syndrome developed was schizophrenia in six cases, involutional depression in four and organic psychosis in one case (Table I).

The ages of the patients ranged from 28 to 67 years (mean: 48 years), nine out of the eleven patients were female, and only one patient was single (the rest were married, divorced or separated).

Table I

Patients with Capgras syndrome: age, sex, marital state, basic illness

No.	Patient	Age	Sex	Marital state	Illness
1	S.P.	47	F	M	Paranoid schizophrenia
2	I.T.	67	M	M	Involutional depression
3	H.L.	52	F	M	Involutional depression
4	A.K.	43	F	M (div)	Paranoid schizophrenia
5	M.P.	35	F	M	Hebephreno-paranoid schizophrenia
6	K.K.	40	M	M (sep)	Paranoid schizophrenia
7	P.P.	64	F	M	Involutional depression
8	T.A.	50	F	M	Paranoid schizophrenia
9	J.D.	60	F	M	Involutional depression
10	P.K.	43	F	M	Paranoid schizophrenia
11	P.D.	28	F	S	Organic psychosis

The ages of most subjects at the time of onset of both the basic illness and the syndrome were rather advanced (average age of onset of basic illness, 40 years; of syndrome, 45 years), and most patients developed the syndrome years after the onset of basic illness (average period between the two onsets, 5 years). The syndrome developed simultaneously with the basic illness in only three cases.

The frequency of depersonalization-derealization phenomena (six patients) and déjà vu and related experiences (three patients) is shown in Table II, which also indicates that the main

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TABLE II

Depersonalization-derealization, déjà vu, déjà vecu, jamais vu, jamais vecu experiences, basic 'double', other 'doubles', emotional relationship to basic 'double' of patients with Capgras syndrome

No.	Patient	Depersonalization and (or) derealization	Déjà vu Déjà vecu Jamais vu Jamais vecu	Basic 'double'	Other 'doubles'	Relationship to basic 'double'
1	S.P.	+	—	Husband	Children	Negative, strongly charged
2	I.T.	—	—	Son	—	Positive, strongly charged
3	H.L.	—	—	Daughter	—	Positive, strongly charged
4	A.K.	+	—	Father	Employers	Negative, strongly charged
5	M.P.	+	—	Husband	Domestic animals	Negative, strongly charged
6	K.K.	+	—	Wife	Mother Children	Negative, strongly charged
7	P.P.	+	—	Children	Husband	Positive, strongly charged
8	T.A.	—	+	Husband	Sisters	Positive
9	J.D.	—	+	Daughters	—	Positive, strongly charged
10	P.K.	+	—	Husband	—	Negative
11	P.D.	—	+	Doctor	Occupational therapist	Positive

misidentified person was the spouse for five of the subjects and that the emotional relationship to the basic 'double' was strongly charged in the majority of patients (eight cases). None of the patients had an indifferent or (consciously) ambivalent attitude to the principal misidentified person.

Two of the patients had histories of severe head injuries (Nos 6 and 11), one patient (No. 11) had a history of grand mal convulsions, and one patient (No. 1) had symptoms indicative of 'reduplicative paramnesia'.

The EEG findings of the ten investigated patients are shown in Table III. Most patients had various degrees of abnormalities of the cerebral bioelectrical activity ranging from mild and diffuse abnormalities to 'epileptic' discharges. These findings often became more pronounced when activation techniques and sphenoidal electrodes were used.

Six patients were investigated echoencephalographically (Nos 4, 6, 7, 8, 9 and 10). Four of them (Nos 4, 8, 9 and 10) had enlargement of the third cerebral ventricle (9 mm, 8 mm, 10 mm and 9·5 mm respectively) indicative of some degree of cerebral atrophy. The mean value of the width of the third ventricle of our patients was greater than that of both a group of normal controls and a group of epileptic patients of comparable ages studied by Spengos *et al* (1970) at Eginition Hospital (Table IV).

Air-encephalographic investigation of two patients was negative in one of them (No. 10) but revealed asymmetry of the lateral ventricles in the other (No. 9), while brain scanning investigation was negative in all patients.

Table V shows the results of the psychological tests. The Wechsler test (1958) revealed that many patients had a considerable difference between verbal and performance IQ in favour of the former. The Rey test (1959), which provides information about visual organization

TABLE III

Electroencephalographic findings

No.	Patient	Routine recording			Activation		
		Basic diagram	Bilateral paroxysmal slow activity	'Epileptic' discharges	Sleep-sphenoidal electrodes	Hyperventilation	Intermittent photic stimulation
1	S.P.	Well organized	—	—	(Not done)	—	—
3	H.L.	Diffuse abnormalities	++	++	(Not done)	Enhancement	—
4	A.K.	Low amplitude, diffuse abnormalities	+	—	Bursts of bilateral sharp waves, more marked on parietal areas	—	—
5	M.P.	Mild, diffuse abnormalities	—	—	(Not done)	—	—
6	K.K.	Diffuse abnormalities	++	—	Enhancement of paroxysmal slow waves. More marked abnormalities on the left	Enhancement	—
7	P.P.	Mild, diffuse abnormalities	+	+	Enhancement of paroxysmal slow waves and sharp waves. More marked abnormalities on the left	Enhancement	—
8	T.A.	Mild, diffuse abnormalities	+	—	Similar findings	Enhancement	—
9	J.D.	Well organized	—	—	Bursts of slow waves more marked on the right	—	—
10	P.K.	Well organized	+	—	Bursts of slow waves more marked on the right	—	—
11	P.D.	Mild, diffuse abnormalities	+	—	Bursts of slow waves more marked on the left	—	—

+ Abnormal findings; ++ Marked abnormalities; — No abnormality.

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TABLE IV
Echoencephalographic findings

Age groups	Patients with Capgras syndrome		Normal controls		Epileptic patients	
	n	Width of third ventricle (mm)	n	Width of third ventricle (mm)	n	Width of third ventricle (mm)
31–50	4	8·1	18	5·7	23	7·2
51–70	2	8·5	15	6·7	7	7·2

in space and about visual memory, and the Benton test (1965), which is an index of visual perception, spatial visual memory and visual-motor ability revealed that these functions were disturbed in almost all patients. The results of the psychological tests will be reported in detail elsewhere.

DISCUSSION

An indication of the rarity of the syndrome of Capgras is provided by the fact that it took more than six years to collect eleven cases, although the search for appropriate cases was not limited to Eginition Hospital but was extended to a large number of Greek psychiatric hospitals.

The psychotic background of the syndrome, commented upon by most investigators, was confirmed by the present study, since all patients manifested mental disorder of psychotic type. The fact that most patients were schizophrenic is also in keeping with the bibliography.

It is probably worth noting that, irrespective of diagnosis, the clinical picture of almost all patients was dominated by a marked paranoid component. It is perhaps significant that all schizophrenic cases were of the paranoid or the hebephreno-paranoid variety and all depressives had involutional depression, a condition often coloured by paranoid admixtures.

The Capgras syndrome was originally believed to occur only in women, and since the first male patient described by Murray (1936) was a latent homosexual it was postulated that

TABLE V
Results of psychological investigations

No.	Patient	Wechsler test		Rey test		Benton test
		IQ	Difference between verbal and performance IQ	Spatial organization	Recent memory	
1	S.P.	125	19	+	+	+
3	H.L.	66 (verbal)				+
4	A.K.	67	−2	−	+	+
5	M.P.	52	8			
6	K.K.	76	2		+	±
7	P.P.	72	25	+	+	+
8	T.A.	76	29	+	+	+
9	J.D.	67	11	+	+	+
10	P.K.	58 (verbal)				
11	P.D.	87	11	+	+	+

+ Disturbed; − Not disturbed; ± Mildly disturbed.

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this patient manifested the syndrome because homosexuals and women have identical courses of development of infantile sexuality. Subsequent publications have shown that the syndrome does occur in men also. Our own observations indicate that although there is a definite female preponderance (nine women out of eleven patients) the syndrome of Capgras does not spare men. However, it is probably significant that one of the two male patients of our material reported homosexual experiences.

The fact that most patients (with only one exception) were or had been married must be attributed to their rather advanced ages at the time of observation (mean: 48 years).

Most patients in our series developed depersonalization and derealization feelings. This is in keeping with observations regarding cases described by other authors (Capgras and Reboul-Lachaud, 1923; Courbon and Tusques, 1932; Vié, 1930; Delay *et al*, 1952; Frey *et al*, 1956; Cenac-Thaly *et al*, 1962; Nilsson and Perris, 1971; Vogel, 1974; Lansky, 1974, and others) and suggests that these experiences are significant pathogenetically, at least in certain cases. It appears probable that under certain conditions (determined basically by some degree of cerebral dysfunction and possibly by a charged emotional relationship to the principal misidentified person) depersonalization-derealization experiences may evolve into the syndrome of Capgras.

Ackner (1954) stated that depersonalization experiences tend to be included within the delusional system if there is a delusional development, with accompanying reduction of the feeling of strangeness and unreality. Similar was the view expressed by Mayer-Gross (1935) when he stated that depersonalization occurs during the stage of minor intensity of an illness and disappears 'when the depression deepens or when a schizophrenic state of paranoid-hallucinatory character follows'. In the light of these observations it is probably worth noting that most of our patients who experienced depersonalization feelings mainly reported them either before or at the onset of the syndrome of Capgras, while depersonalization disappeared or its intensity diminished when the fully-blown Capgras symptomatology developed. Thus, it seems possible that in certain cases the syndrome of Capgras may represent a delusional evolution of the phenomena of depersonalization and derealization. Within this framework it is probably worth noting that both depersonalization-derealization phenomena and the syndrome of Capgras occur more often in women.

Enoch *et al* (1967) state that 'in all married patients with the syndrome of Capgras the spouse is the double'. Our observations only partly support this view. All married (and not separated or divorced) schizophrenics in our series regarded their spouses as doubles; but this was not the case with the four depressives, who invariably misidentified their children.

Recent reports of cases by Gluckman (1968), Weston and Whitlock (1971) and MacCallum (1973) have suggested that organic factors may be pathogenetically significant. Our own observations support this view on the following grounds:

The EEG investigation of our Capgras patients revealed abnormalities in the majority of cases. Paroxysmal bilateral slow activity was noted in the routine recordings of seven out of the eleven cases (63·6 per cent). This frequency was much greater than the mere 15 per cent observed in the routine records of a population of psychotic patients of Eginition Hospital studied by Malliara and Demetrakoudi (1972). Also, 'epileptic' discharges occurred more frequently in our series than they did in a population of 6,874 non-epileptic neuro-psychiatric patients studied by Malliara and Demakou (1974). One may argue that the greater frequency of abnormalities noted in our Capgras patients may have been due to the fact that many of them were receiving antipsychotic medication; yet this was also the case with the groups of patients quoted above.

The enlargement of the third ventricle noted in the majority of the echoencephalographically tested patients, and the fact that the mean value of the width of the third ventricle was greater in the group of Capgras patients than that noted in both the normal controls and the epileptic patients studied by Spengos *et al* (1970) suggest that an organic cerebral dysfunction probably contributes to the pathogenesis of the syndrome.

Further evidence supporting this view is provided by the psychological findings, which revealed a marked difference between verbal and performance IQ as well as deficient performance in the tests by Rey and Benton. Since patients with organic brain dysfunction often perform badly in both these tests, the possibility of organic brain dysfunction of the patients with Capgras syndrome is reinforced by these findings.

Additional evidence is provided by the air-encephalographic study of one of the two tested patients, which revealed asymmetry of the lateral ventricles, a finding consistent with organic conditions such as epilepsy (Spengos *et al*, 1971).

Clinical evidence arising from the case histories is also indicative of a possible organic participation to the pathogenesis of the syndrome. Patient No. 1 manifested reduplicative paramnesia, a symptom consistent with epilepsy (Kinnier Wilson, quoted by Henderson and Gillespie, 1962). Patient No. 2 developed the Capgras syndrome only when in addition to his depression his physical condition was impaired by pneumonia. It is also probably significant that the syndrome subsided only when the patient's physical condition improved. Patient No. 3, in addition to his depression, suffered from a progressive dementing process. Patient No. 6 had a history of concussion, the onset of his Capgras delusions was preceded by an operation and coincided with excessive hashish smoking and drinking. Patient No. 7 developed her Capgras symptoms shortly after a strict fasting of four weeks. Patient No. 8 had thyroid dysfunction, suffered from marked anaemia and eventually died from a fibrosarcoma. Patient No. 9 suffered from hypertension, and her Capgras symptoms appeared shortly after a febrile illness. Patient No. 11 is clearly an organic case, and her Capgras delusions seem to have been associated with the severe head injury she sustained.

In short, clinical evidence as well as EEG, echo-encephalographic, AEG and psychological findings indicate that an organic component probably contributes to the pathogenesis of the syndrome of Capgras. In certain cases it is doubtful whether the syndrome would have become manifest if this organic component had not existed.

These findings suggest that the appearance of the syndrome of Capgras in the setting of a functional psychosis calls for careful investigation (and possibly treatment) of organic contributory factors.

The significance of the negative or ambivalent feelings of the patient towards the person whose identity she denies has been stressed by a number of authors. Some of them have even attributed aetiological significance to this negatively charged or ambivalent relationship. Our own observations, however, suggest that although the emotional relationship of the patient to the main misidentified person is important, it is not necessarily negatively charged or ambivalent. In fact, four out of our eleven patients had a strongly positive relationship with the main misidentified person. It appears, therefore, that the importance of the emotional relationship lies more on its intensity and less on whether it is positively or negatively charged.

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REFERENCES

ACKNER, B. (1954) Depersonalization. II. Clinical syndromes. *Journal of Mental Science*, **100**, 854–72.

BENTON, A. C. (1965) *Mannuel de rétention visuelle*. Paris: Editions du centre de psychologie appliquée.

BESSIÈRE (1913) Paranoia et psychose périodique. *Thése de Paris*. Leclerc. Quoted by Brochado, A. (1936).

BROCHADO, A. (1936) Le syndrome de Capgras. *Annales médico-psychologiques*, **15**, 706–17.

CAPGRAS, J. & REBOUL-LACHAUD, J. (1923) Illusion des sosies dans un délire systématisé chronique. *Bulletin de la Société Clinique de Médecine Mentale, ii*, 6–16.

CENAC-THALY, H., FRELOT, G., GUINARD, M., TRICOT, J. C. & LACOUR, M. (1962) L'illusion de sosies. *Annales médico-psychologiques*, **2**, 481–94.

CHRISTODOULOU, G. N. (1967) Sphenoidal electrodes: their significance in diagnosing temporal lobe epileptogenic foci. *Acta Neurologica Scandinavica*, **43**, 587–93.

—— (1975) The Syndrome of Doubles. Associate Professorship Thesis, Athens University.

—— (1976) Delusional hyper-identifications of the Frégoli type: organic pathogenetic contributors. *Acta Psychiatrica Scandinavica*, **54**, 305–14.

COLEMAN, S. M. (1933) Misidentification and non-recognition. *Journal of Mental Science*, **79**, 42–51.

COURBON, P. & FAIL, G. (1927) Illusion de Frégoli. *Bulletin de la Société Clinique de Médecine Mentale*, **15**, 121–4.

—— & TUSQUES, J. (1932) Illusions d'intermetamorphose et de charme. *Annales médico-psychologiques*, **90**, 401–5.

DELAY, J., PERRIER, F. & SCHMITZ, B. (1952) Action de diverses thérapeutiques de choc sur un syndrome d'illusion de sosies. *Annales médico-psychologiques*, **120**, 235–8.

ENOCH, M., TRETHOWAN, W. & BARKER, J. (1967) The Capgras Syndrome. In *Some Uncommon Psychiatric Syndromes*. Bristol: John Wright & Sons.

FREY, M., MAUREL, H. & SPIELMANN, J. P. (1956) Sur une observation d'illusion de sosie. *Annales médico-psychologiques*, **114**, 891–6.

GLUCKMAN, J. K. (1968) A case of Capgras syndrome. *Australian and New Zealand Journal of Psychiatry*, **2**, 39–43.

HENDERSON & GILLESPIE (1962) *Textbook of Psychiatry* (revised by D. Henderson and I. R. C. Batchelor), p 108. London: Oxford University Press.

LANSKY, M. R. (1974) Delusions in a patient with Capgras' syndrome. *Bulletin of the Menninger Clinic*, **38**, 360–4.

LÉVY-VALENSI (1929) L'illusion des sosies. *Gazette des Hôpitaux*, 10 juillet.

MACCALLUM, W. A. G. (1973) Capgras symptoms with an organic basis. *British Journal of Psychiatry*, **123**, 639–42.

MAGNAN (1893) *Leçons cliniques*. Paris: Bataille.

MALLIARA, S. & DEMETRAKOUDI, M. (1972) Bilateral paroxysmal slow activity in the EEG records of non-epileptic patients. *Nosokomiaka Chronica*, **34**, 127–31.

—— & DEMAKOU, G. (1974) EEG abnormalities in non-epileptic patients. Paper delivered on 24 January at Eginition Hospital. Symposium organized by the Department of Neurology, Athens University.

MAYER-GROSS, W. (1935) On depersonalization. *British Journal of Medical Psychology*, **15**, 103–26.

MURRAY, J. R. (1936) A case of Capgras's syndrome in the male. *Journal of Mental Science*, **82**, 63–6.

NILSSON, R. & PERRIS, C. (1971) The Capgras syndrome: a case report. *Acta Psychiatrica Scandinavica*, **222**, 53–8.

REY, A. (1959) *Test de copie d'une figure complexe*. Paris: Editions du centre de psychologie appliquée.

SPENGOS, M., KOKRAS, A., GARELIS, E. & SCARPALEZOS, S. (1970) Echoencephalographic study of the width of the third ventricle in epileptic patients. *Iatrika Chronika*, **10**, 177–84.

—— SOURETIS, J., PAPOULIAS, E. & SCARPALEZOS, S. (1971) Air-encephalographic study of epilepsy in relation to clinical and EEG data. *Iatrika Chronika*, **11**, 11–23.

VIÉ, J. (1930) Un trouble de l'identification des personnes: l'illusion des sosies. *Annales médico-psychologiques*, **88**, 214–37.

VOGEL, F. B. (1974) The Capgras syndrome and its psychopathology. *American Journal of Psychiatry*, **131**, 922–4.

WECHSLER, D. (1958) *The Measurement and Appraisal of Adult Intelligence*. Baltimore: Williams & Wilkins.

WESTON, M. J. & WHITLOCK, F. A. (1971) The Capgras syndrome following head injury. *British Journal of Psychiatry*, **119**, 25–31.

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