? Comunicación en Congreso Int. Neur. Paris 1949

SUR LES MECHANISMES CENTRAUX ET PÉRIPHERIQUES DANS L'IMAGE CORPORELLE = 1949

Prof. J. Lopez-Ibor (*Madrid*)

Je désire d'abord féliciter le Prof. Lhermitte pour son excellent et lumineux rapport où il résume ses remarquables travaux sur «l'image corporelle».

D'après ce rapport, l'intervention des facteurs centraux et périphériques dans l'origine du «membre fantôme» devient évidente. Il existe également une certaine concordance des auteurs sur la participation relative du centre et de la périphérie nerveuse dans la génèse du schèma, étant donné que la majorité des auteurs inclinent, comme le Prof. Lhermitte, à attribuer une prévalence fonctionnelle au centre. Mais parmi les nombreuses questions qui restent soumises à l'analyse il y a une d'un intérêt tout particulier : *celle de la façon de l'établissement des rapports entre le centre et la périphérie.* L'étude d'un cas très curieux où la formation fantasmale apparut lors de l'amputation d'un oeil m'a permis d'apercevoir comment peut se concevoir le fonctionnement du circuit centre-périphérie.

Ce cas, qui sera communiqué in extenso en une autre occasion, se résume ainsi : il s'agit d'un médecin qui souffrait d'un strabisme convergent depuis son enfance (O. D.). Après l'échec des traitements habituels on décida à 18 ans la correction chirurgicale. Mais avec l'intervention le strabisme changea de direction et il lui resta une diplopie transitoire qu'il essaya pedant 4 ans de corriger avec des exercices estéréoscopiques. Devant l'échec de cette gymnastique il se soumit à deux interventions chirurgicales : après la dernière il obtint un parallelisme évident des deux yeux, mais il ne pouvait fusionner les images, ce qui lui provoquait des douleurs extremement violentes, qu'il localisait dans la musculature oculaire. La douleur augmenta jusqu' à un point invraisemblable, le transformant en un être inutile. C'est alors qu'un professeur d'oftalmologie lui conseilla de réinstaller le strabisme dans son état primitif. Il n'y eut aucun succès, les douleurs continuèrent. Une iridociclitis se présenta et il fallut faire l'ablation de l'oeil.

Avec l'énucléation les malaises ne cessèrent pas. Il ressentait une tension dans la zone correspondant à l'oeil amputé avec des douleurs si violentes qui l'obligeaient à rester au lit. Il avait l'impression de la présence du champ visuel absent qui s'interférait avec le champ visuel réel, au point, dans les moments de fatigue, de brouiller l'image de l'oeil existant qui d'ordinaire était claire. Le champ visuel absent gênait le présent, parfois avec des ombres, d'autres fois avec des raies et des points lumineux. Le malade devait faire des effort considérables pour séparer l'oeil amputé et son champ visuel fantôme de l'oeil sain. L'anesthésie de la mus-

culature occulaire lui procura un soulagement de quelques jours. Mais la répétition du traitement fut moins durable. Chaque anesthésie était accompagnée d'une sensation spéciale. Dans le champ visuel apparut un brusque déplacement de 30. La vision fantôme devint un tourment tel qu'il le poussa au bord du suicide.

Dans ce malade il existait donc une vision d'un oeil fantôme qui entrait en lutte avec la vision de l'oeil sain. Plus il s'efforcait d'éliminer l'image fantôme plus elle était vive. Cette situation rappelle nettement une expérience de v. Holst: les mouvements occulaires ont deux modes de re-afférence: 1.° — moyennant un déplacement de l'image retinienne, et 2.° — grâce à la stimulation venant des muscles occulaires. V. Holst soutient que lorsqu' on envoie un stimulus moteur du centre à la périphérie celui-ci garde une sorte de copie de ce stimulus. (Efferenzkopie, copie efferente) qui est annulée ou effacée lorsque le stimulus sensoriel correspondant à l'ordre accompli arrive au centre. Tout ce processus est subliminal par rapport à la conscience, c'est une pure régulation ou ordination nerveuse sans aucune manifestation psychique. Si on immobilise un oeil et que l'on commande au sujet de regarder à droite il apparait une perception positive dans l'oeil, même s'il ne s'est rien passé sur la rétine ni dans les muscles, car ceux-ci sont restés immobiles puisque la copie efférente engendrée par l'ordre donné n'a pas été effacée par la sensation postérieure et c'est alors que le psychisme en prend conscience. La perception est la même que si l'oeil étant immobilisé on déplaçait le champ visuel à l'insu du sujet. Dans les deux cas le sujet nous dit que le champ a fait un saut à droite. Kornmüller a confirmé cette expérience sur lui-même en s'anesthésiant un oeil. Nous voyons donc que l'ordre de bouger l'oeil suffit à lui seul pour provoquer la perception. Si en un oeil immobile on provoque passivement un déplacement vers la droite, il manque la commande et la copie afférente, mais le déplacement de l'image retinienne est capable de donner la sensation de mouvement dans le champ perceptif.

Que se passe-t-il si l'on combine les deux manoeuvres? On donne à un oeil immobile l'ordre de regarder à droite et en même temps on fait un déplacement passif vers la droite, alors la copie efférentielle de l'ordre et la reafférence venant de l'image rétinienne ont un effet complémentaire et le champ — l'Umwelt — reste constant. Voilà ce qui se passe objectivement. La perception correcte nait donc de la somme de deux perceptions, pour ainsi dire fausses, qui s'annulent. Ainsi s'explique la constance et l'immobilité de l'espace perceptible, malgré les mouvements occulaires. On peut montrer un processus analogue dans la façon d'accomoder.

En résumé, donc, notre image du monde extérieur et l'image de notre propre corps résultent d'une série de processus complémentaires dans lesquels interviennent la copie efférente du mouvement et des sensations cénestésiques provenant du mouvement des muscles. Lorsque ces deux processus ne se compensent pas naît l'image fantôme. Dans notre cas de l'oeil fantôme il est évident que les corrections sucessives que le malade avait subies et ses efforts avaient créé une sorte d'ataxie entre la copie efférentielle et la sensation. Souvenons-nous comment avec l'anesthésie du reste de la musculature occulaire cette sensation disparaissait passagère-

ment, tout comme disparait le membre fantôme quand on anesthésie le moignon.

Il serait inutile d'insister — Lhermitte le faisant suffisamment — dans son rapport sur l'intervention des mouvements dans le processus de formation du schèma corporel. En dehors de l' intervention du facteur visuel qui donne un schèma différent, l'image cénestésique se forme par la résistance du milieu extérieur et de nos mouvements vis à vis de lui. En marchant nous ne percevons pas nos jambes, comme nous le voyons, mais la résistance du sol sous nos pieds et les mouvements de nos genoux. Ainsi un malade de Lhermitte qui avait un membre fantôme disait: «Entre le pied et mon genou il y a un trou». Dans un travail publié il y a quelques anées je consignais déjà la disparition des sensations de présence des membres, une sorte de membre fantôme négatif, dans les expériences d'auto-relaxation de Schultz et de relaxation progressive de Jacobson.

Mais ce qui est intéressant n'est pas seulement l'intervention des mouvements réalisés ni de considérer l'image comme résultante de la réafférence cénesthésique provenant par exemple d'une articulation en mouvement; ce sont les *mouvements à réaliser,* les ordres ou projets de mouvement, une sorte de mouvement virtuel (Bergson, Palagy). Nous pouvons rappeler ici une fois de plus l'unité de la perception et du mouvement.

Il ne faut pas penser que l'être humain soit capable de percevoir tout ce qui se passe autour de lui. De la même façon que l'on ne peut concevoir la vie psychologique sans la présence de l'oubli, l'on ne peut réaliser la vie organique sans l'existence du non-perçu, de ce qui n'entre pas dans le champ de la conscience. Ce fait est rendu possible seulement par l'existence de regulations entre les copies efférentes et reafférentes qui se réalisent à un niveau inférieur. Quand elles se troublent nait la pathologie.

Je voudrais soumettre ici un autre problème à propos de l'image du corps, ou plutôt je désirerais poser une question. En général on parle seulement de l'image qui résulte du contact de notre corps avec le monde extérieur, c'est à dire d'une image que nous pourrions appeler externe. Cette image se rapporte surtout aux parties de notre corps qui se meuvent volontairement. La question se complique alors, car dans la notion «schema corporel» il y a deux images, l'une visuelle et l'autre cénesthésique (je dirais plutôt «sensation de présence cénesthésique», pour la différencier de l'image visuelle) dont la synthèse n'est pas réalisée par un acte perceptif, mais qui est un jugement, une synthèse mentale, une pensée, une abstraction.

Pas mal de travaux et d'observations sur le schèma corporel ne font pas assez nettement la distinction entre ces deux plans: l'un perception visuelle et cénesthésique, et l'autre opération mentale.

Même le mot «schema corporel» fait plutôt allusion à l'opération mentale qu' à l'acte perceptif même. Y a-t-il donc une image corporelle de notre corps intérieur, de notre «intracorps»? Jusqu'à quel point est elle différente de l'autre image?

Évidemment, il existe une image de notre corps interne ou «intracorps» — permettez-moi d'employer ce néologisme — qui est l'image cénesthésique; son analyse nous éclairera sur le schema corporel. D'ordinaire nous n'avons pas connaissance de notre monde intérieur: seulement, lors de circonstances exceptionnelles physiologiques ou pathologiques, nous

apparaissent notre coeur palpitant ou notre stomac en mouvement. Une perturbation dans leurs fonctions les amène au plan conscient. La fixation de l'attention sur cette perturbation, en établissant un cercle vicieux, l'attache à la conscience comme dans les formations hypocondriaques. Il en est de même avec l'image du corps externe. Dans l'apparition du membre fantôme jouent un rôle évident l'amputation ou la maladie prexuelle ou périphérique qui troublent la régulation du système copie afférente-réafférentation sensorielle, comme nous l'avons déjà dit. Nous pouvons signaler un mécanisme analogue à propos des régulations végétatives. La perturbation est ce qui parait dans la conscience.

Notre image corporelle a donc une frontière mobile, fluctuante, et c'est pourquoi parler d'un schema corporel est une expression trop rigide. Nous n'avons pas d'image de notre corps, puisque celle-ci est continuellement en train de se faire et de se défaire, passant de l'ignorance à l'oubli et ne nous laissant qu'une légère frange du changeant présent.

Journal of Psychosomatic Research, 1956, Vol. 1, pp. 115 to 119. Pergamon Press Ltd., London

PROBLEMS PRESENTED BY ASTHMA AS A PSYCHOSOMATIC ILLNESS

J. J. LOPEZ IBOR, M.D.*

ASTHMA, as a psychosomatic disease, exemplifies, perhaps more clearly than any other illness, the difficulties encountered in dealing with psychosomatic problems. The main question is to determine a dominant personality type in this illness. The evidence in the literature does not help us to clarify the matter, and the statements we can find are less explicit than those about any other psychosomatic disease. Perhaps the reason for this is simply the absence of any definite personality type amongst asthmatics. Although this point has not been adequately proved, any psychotherapist with some clinical experience is aware of the variety of personality types in which asthma can occur. In my own experience I have not found any definite personality type in asthmatics, in spite of the fact that among the selected population seen by a psychiatrist, one would expect a certain type to emerge more clearly, and yet this is not so. The physician in general practice is bound to find a greater variety of personality types.

Another objection against establishing an asthmatic personality is the frequent finding of other psychosomatic disorders in different phases in the life of these patients. Not unusually they suffered previously from colitis, episodes of precordial anxiety, obsessional symptoms, or, what is more, depressive phases. There are many other workers who find a description of psychosomatic profiles often vague and inadequate.

There are other solutions to the problem of asthma which we find difficult to accept. ALEXANDER (1941) gives the interpretation of asthma as being related to an excessive dependence on the mother which has not been properly resolved. SAUL (1946) goes further in his views, asserting a strong wish in these patients to return to intrauterine life, a point which FREUD has already made. If we accept these views, we come up against the objection that the need for protection and the obscure tendency to regress to former phases of life is common to all neurotics, but is only expressed in different ways. In general, any interpretation trying to establish a psychogenic origin of asthma is insufficient. One often sees asthmatics in whom a psychic trauma produces an attack and, what is more significant, stops it. In one of my cases the attack was interrupted when the patient was told she was producing it by autosuggestion. But the same happens when the "status asthmaticus" is cut short by the administration of a placebo. Thus it seems as if there is a mysterious mechanism which is not always at our disposal. In some cases a relationship can be established, but not in others. It may be argued that such experiences are only meaningful in relation to previous ones, and that, as long as these are not uncovered, it is impossible to stop the attacks. However, psychoanalysts often fail to establish a relationship between asthmatic attacks and infantile conflicts. If we want to relate the conflicts to a desire to return to intrauterine life, we can say that in this case the individual cannot retain the memory as amnestic experience; this is shifting the

* Professor of Medical Psychology, Madrid University, Spain.

ground considerably. Allergy is also in this case a form of biological experience, but then one has to explain why such a biological experience has to be relived, in an existential form, by means of other biological phenomena, one of which may be an attack of asthma.

To my way of thinking, the problem of asthma as a psychosomatic disease must take particular account of the frequently phasic occurrence of the disease, with at times the substitution of other psychosomatic disorders (neurocirculatory asthenia, migraine, etc.). In order to find a general explanation for this, some workers have resorted to an allergic interpretation of many psychosomatic conditions. Such an interpretation may be acceptable in some cases, such as when migraine replaces an asthmatic attack, but it is not so simple to understand when the change occurs between asthma and obsessional symptoms. This is one of the reasons why I have included in one large group a number of patients who are usually classed separately in general medicine, psychosomatics, and psychiatry, under the heading of vital or timopathic circle. In these patients the main disturbance is due to an alteration of the structure that gives rise to the instincts and vital feelings (fatigue, anxiety, malaise, sadness, etc.).

In some asthmatics I have observed the onset of agarophobic giddiness at times when they were free from asthma. Other patients relate dreams of a vertiginous character. Both symptoms seem to point clearly to the fact that in the asthmatic there is a change in his experience of space. Asthma is a form of introjected anxiety. Asthma means narrowness, and, in an attack of asthma, not only the bronchial tubes are narrowed, but also the breathable world. The experience can be compared with that of a claustrophobic patient for whom the world also becomes small. They are both similar modes of existence.

In other papers I have tried to clarify this point (LOPEZ IBOR, 1950). In a great number of cases the so-called neurotic anxiety is in fact physiogenic; in other words, not reactive but somatically produced. The origin of this anxiety is probably determined by the diencephalon. Many authors have accepted a similar view regarding the mechanism of an asthmatic attack. STURM (1948) maintains that asthma has a central origin. The finding in the patient's life history of anxiety crisis, vertigo, circulatory disorders, phobias or obsessions, amongst others, shows a possible common origin for all these disturbances.

I have seen periods of anxiety and vertigo, following periods of asthmatic attacks, which I think are also referable to the diencephalon. They represent, as it were, an alteration of claustrophobia and agarophobia. A sufferer from vertigo does not experience the anxiety of boundless space, but that of emptiness, of falling, or feeling faint. Similarly the asthmatic is not consciously aware of the space being narrowed, but this "narrowing" has been introjected. TROUSSEAU (1878) has described mental symptoms in asthmatics, which today we would class under claustrophobia.

Neurotic anxiety would then be a physiogenic anxiety elaborated at a personal level and consequently experienced in various ways, depending on the historical circumstances of the subject. This physiogenic anxiety I consider included in the timopathic circle, together with other disturbances which are characterized by oscillations of what SCHELER (1926) calls "vital feelings," such as happiness or sadness. We are dealing here with a clinical group similar to cyclothymia. Just

as it is possible to differentiate a phasic sadness of vital character, there is also phasic anxiety of vital character. The relationship between asthma and the timopathic circle is demonstrated by the numerous cases in which an asthmatic phase appears replacing or following a vital depression, or an obsessional or phobic phase. BROWN and GOITEN (1943), in a study of the personality of asthmatics, found these patients had a cyclothymic disposition associated with paranoid features, repressed hostility, and ideas of self-punishment. Repressed aggression and a self-punishing attitude are, in my view, some of the numerous components of a developed anxiety crisis. MCDERMOTT and COBB (1939), in their work on asthma, emphasize a number of character traits such as cleanliness, punctuality, meticulousness, which are merely features of an anxious personality. In BOSS's (1954) anthropological interpretation of asthma, anxiety plays a very important role. Bronchial spasm, asphyxiation, and arrest of breathing are interpreted as a way of existence in a world overcharged with unbearable stimuli which reach a point of marked anxiety. The same applies to normal people in a heavy or noxious atmosphere: the response of the bronchial tubes is the same. Hence the return to the phase when the mother acted as a filter. These anthropological associations are based too much on the analysis of the situation, and they tend to disregard endogenous factors. A healthy person cannot breathe comfortably in an unhealthy atmosphere, but the asthmatic cannot breathe comfortably in a healthy atmosphere. The important thing to understand is why such a psychic or physical atmosphere becomes unhealthy for him. Is the source of intolerance in the atmosphere or in himself? The anthropological interpretation of the asthmatic crisis, establishing an analogy between the somatic and psychic levels, runs the risk of leading us into error, since it admits implicitly the same form of causality in both spheres. Physical causality is not the same as psychic determinism; the asthmatic crisis is like all crises, human and psychophysical: occurring simultaneously on both levels.

One of our patients, years after she had had asthmatic attacks, remarried and had a daughter. The birth produced a very severe anxiety crisis, and during it she developed a marked and persistent spasm of the neck of the uterus, to such a degree that a Caesarian section had to be performed. This suggests that the general phenomenon of "shutting off" and isolation would be also a general biological formula for certain patients, and that it would be projected on to different areas of neurological regulation.

What the asthmatic does in a crisis is to breathe in air which is not properly breathed out. Part of it is retained, and what he attempts to do is to expel it. The boundary which is established on the surface of the respiratory apparatus, between the subject and the world, is thus changed. The analogy with what happens in the obsessional patient is obvious. A patient suffering from an obsessional idea or impression finds that he cannot expel it from his mind. From the point of view of the symbolism of functions we must remember that breathing belongs, on the one hand, to the most rigid and unconscious automatism and, on the other, is clearly dependent on our volition, which is not the case with our circulation or digestion. This interaction of the will supposes the insertion of freedom, and probably in this way in ancient times breathing was related to the spirit.

Regarding the question of precipitation of asthmatic attacks, it is well known that attacks may be due to diverse and very curious mechanisms. One of my patients

had phasic attacks of asthma since childhood, always at 3 o'clock in the morning. On one occasion her husband decided to put the clock forward, but the patient woke up at the usual time, saying that she would soon have an attack. When told it was already 4 o'clock, the patient suffered no attack. Many similar examples can be found in the literature. It would be an error to pretend to solve the problem by calling it suggestion, and this is not because the term is faulty, but because it does not throw any light on the process involved. Such quick-acting suggestion is seldom seen in other illnesses; also, suggestion does not always work. In the case we mentioned, the trick of advancing the clock subsequently failed. Thus it appears that sometimes the patient is in a peculiar state of mind in which certain experiences are effective in response to that particular state.

The variety of personality types and circumstances in which an asthmatic attack can occur, show that this can be *overdetermined*, in the same way as the content of dreams, that is to say, they can play different roles of an unspecific kind in the individual life. If this is true, it would be, on the contrary, wrong to always attribute a fixed symbolism to the crises. The means of expression, either normal or abnormal, for a human being are inadequate compared with its enormous possibilities for action. Mental life absorbs the instinctual drives and transforms them into vital themes. The number of these is much richer than the basic instinctive structure. Every gesture is significant in a variety of ways. If this is the case with normal expressions, it must be all the more so with pathological mechanisms of an expressive character. The attack of asthma can be produced somatically—as in cardiac asthma—or mentally. If there is a multivalent somatic determinism, there is even greater multivalence in the psychic sphere. Hence the variety of personality types in asthma. We have then a variety of personalities which at a given moment use the more immediate mechanism of morbid expression.

One of my asthmatic patients had an enormous capacity for struggle, was ambitious, and anxious for power. On account of external circumstances, incidentally unjust, he had to abandon public life. He then developed asthmatic attacks, culminating in a "status asthmaticus." After the crisis he was able to reorganize his life, centring rather on values which were dependent on his own personality and less on external circumstances, all of which allowed him to become more adjusted.

This fact forces us to consider the problem of whether the "occasional apparatus," as BLEULER liked to call it, is predetermined in the patient. It seems very probable that this is in fact the case, and that in its production a number of factors intervene dependent on certain dispositions developed during early infancy. It seems to me that the asthmatic's first five years of life are worth careful analysis, such as that carried out by SPITZ (1950) in another group of patients.

The time of onset of asthmatic attacks, in relation to the development of the personality, deserves more attention than it has been given up to the moment. When one studies the development of personality in asthmatics throughout the years, marked differences are noticeable between them, not only in more or less permanent character traits, but in the way more variable ones unfold throughout their lives. I believe that such a study would throw a considerable amount of light on the prognosis of asthmatic patients. Something similar occurs in many other psychosomatic illnesses. Many asthmatics develop isolated crises appearing throughout their lives, others become chronic. Finally, in another group, to which I particularly

wish to draw attention, the crises cease or lessen, but the personality gradually changes. Some of my patients have been cured of their asthma, but they have then shown themselves as psychopathic or abnormal personalities, to such a degree that they required in-patient treatment.

I am inclined to think that the psychosomatic study of asthma—and of other illnesses—will advance much further if the limits of the so-called psychogenesis were taken into account. By psychogenesis one must understand an alteration produced by an experience, and it implies that the elimination of that experience would be enough to suppress the disturbance. (In psychoanalytic doctrine the interpretation is complicated by the addition of repressed experiences.) In fact, psychotherapeutic experience shows this is not always the case, and that the suppression of a conflict which is a determinant in the illness, or the recognition of a past experience, is not enough to produce a cure. In fact, very often psychic conflicts only act as *catalysts*. Their presence unleashes the disorder, but their absence does not cure it, and once the disorder is produced it takes its course unaffected by psychotherapy. In such cases one must admit that the corresponding nervous regulation takes its course autonomously, because it is not intrinsically linked with the precipitating experience. In many anxiety states and depressives we find a similar situation. An emotional shock produces the appearance of an anxiety crisis, but once produced it follows its own autonomous course. In fact, what the shock has done is to crystallize an abnormal mental state of a vital origin; or, to put it in another way, a physiogenic state which was already on the move. But this is not only noticeable in the case of vital illnesses. It is also noticeable in others which are clearly neurological. We have all seen the symptoms of Parkinsonism or spasmodic torticollis which appear to follow an emotional shock. However, no one would dare to speak today in such cases of psychogenic Parkinsonism. The shock has played a part, but one not strictly causal. I propose to call this action *catagenesis* (from the greek "cata," downwards). We are dealing here with a disturbance which takes place at the somatic level, "descending" or coming down from the psychic. In asthma we frequently find catagenic actions which set in motion a deep morbid state of affairs which already existed. In some asthmatic patients a careful anamnesis uncovers infancy episodes of bronchitis of an asthmatic type. Afterwards a highly charged experience can set in motion or reveal what already existed; the experience has not produced it. To speak in such cases of psychogenesis is inadequate.

REFERENCES

Boss M. (1954) *Einführung in die Psychosomatische Medizin*. Vg. Huber. Bern.

Brown E. A. and Goiten L. (1943) Some aspects of mind in asthma and allergy. *J. Nerv. Ment. Dis.* XCVIII, 638.

French T. M. and Alexander F. (1941) Psychogenic factors in bronchial asthma. *Psychosomatic Medicine—Monographs* II *and* IV National Research Council, Washington, D. C.

Lopez Ibor J. J. (1950) *La Angustia Vital*. Paz Montalvo, Madrid.

McDermott N. T. and Cobb S. (1939) Psychiatric Survey of 50 cases of Bronchial Asthma. *Psychosom. Med.* I, 203.

Saul L. J. (1946) The relations to the mother as seen in cases of allergy. *The Nervous Child* 5, 332.

Scheler M. (1926) *Der Formalismus in der Ethik*. Marholtz, Halle.

Spitz R. A. (1950) Relevancy of direct infant observation. *The Psychoanalytic Study of the Child*. Imago Publishing Co. Ltd., London.

Sturm A. (1948) *Die klinische Pathologie der Lunge*. Stuttgart.

Trousseau A. (1878) *Clinique Medicale ed l'Hotel Dieu de Paris*. Vol. 3, Paris.