AN INQUIRY INTO THE NATURE OF HALLUCINATION

(Continued)

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VI

If we inspect more closely the relation of the stimulus to the hallucination, especially to the dream hallucination, we find that the intensity of the content is disproportionate to the intensity of the initiating stimulus, to the peripheral sense impression. A comparatively slight stimulation often gives rise to a dream of a highly dramatic character. This exaggerated character of the dream hallucination is well known. Thus a prick of a pin may give rise to a dream of being attacked by robbers and finally being run through by a thrust of a dagger. The application of a warm bottle to the feet may develop a dream of ascending a volcano and walking on molten lava,

while a cold stimulus may give rise to a dream of participating in a dangerous expedition to the North Pole. Pain in the head, impeded respiration and pressure in the region of the neck may develop, as in the case of a friend of mine, the horrible dream of being dragged into a narrow dungeon and then beheaded.

To explain this dream exaggeration a theory is advanced based on dissociation. It is claimed that dissociation tends to convert the physiological 'ideational currents' into sensory 'currents' and intensify and exaggerate the psychic states. Before discussing the theory it may not be amiss to examine the facts which the theory is called to explain. It is questionable whether the general relation of dream stimulus is quite correctly stated. It appears that the generalization is stated somewhat in the form of the well-known question: Why do great rivers flow by great cities? It is by no means generally true that the characteristic of dream consciousness is to exaggerate stimuli received and work them up to a pitch so as to convert 'ideational into sensory currents.' The relation is far simpler. The dream does not necessarily as a rule exaggerate incoming stimuli and make of them exciting and sensational dream hallucinations. What happens is this: the commonplace non-exaggerated, unaffective dreams tend to fade away almost immediately on waking, while the impressive dreams are usually remembered. I have observed a number of dreams in my own case as well as in others and have

found that the number of ordinary commonplace dreams far predominates over the striking and extraordinary dreams. Even in psychopathic cases in which subconscious dream life is often well developed, even in such states I have found in the cases which have been under my observation and experimentation that the commonplace dreams far predominate over the dramatic and extraordinary ones. The only way to convince oneself of it is to try to write down the dream immediately on waking. I find that the ordinary dream is very hard to hold in memory, it is elusive and is constantly slipping away from us, a special effort of attention is requisite to hold on to them; they are usually hazy, vague and confused. On the whole, the indifferent dreams really predominate, but it is only the impressive ones that remain in memory. Even the freshness and recency of the dream do not save it from falling into oblivion. Now while commonplace and indifferent dreams are forgotten older dreams, the more impressive, more awakening our emotions, especially emotions of fear, will be clearly and vividly remembered.

Still the fact that exaggeration and intensification of the sense impressions received by awakening a greater volume of secondary sensory elements and representations more often than in the waking state requires an explanation. This intensification may partly be due to the fact that in sleep sensory impressions often enter consciousness suddenly. This brings about a shock, awakening emotions which are

conducive to a greater stimulation of a greater volume of secondary sensory elements and their accompanying representations. Even in the normal waking state sense impressions suddenly introduced into consciousness may cause a shock and give rise to an illusion, the object appearing as something strange and formidable. We can often observe it in ourselves, when falling into a drowsy condition, a slight stimulus which we otherwise ignore will give us a sudden start. I often observed in myself when in a drowsy state and 'dropping off' how an ordinary stimulus such as a cough, for instance, will produce a shock affecting the visceral organs, the feeling being somewhat similar to the condition commonly described as a 'sinking sensation in the pit of the stomach'; the shock seems to reverberate all over the organism.

To this must be added another important factor, namely, the emotion aroused. When an object is perceived under conditions that do not permit its recognition or its assimilation and consequently its customary reaction, an emotion of fear, or that of fright is produced. Such is the case, for instance, when some objects impress us in the dark or when we get hold in the dark of some slimy, slippery and especially of moving objects. These two factors often work together inasmuch as an object suddenly introduced into consciousness is also not speedily assimilated so that the shock and emotion due to non-recognition or non-assimilation go together. Now in sleep stimuli entering into consciousness effect it in

a sudden way and from the very nature of the sleeping consciousness the external stimulation is but imperfectly assimilated: both factors, shock and emotion, due to non-assimilation are present and sometimes give rise to a highly wrought up emotional state which is so apt to transform objects by arousing different systems of elements and at the same time to impress the memory powerfully.

It is claimed that the very fact of dissociation brings about an intensification of ideational states converting them into sensory states. Physiologically, the assumption is made that the sensory nerve cells can be set into activity not only by peripheral, stimuli, but also by central 'currents' going from center to periphery. The sensory centers are like a bucket with water, the upsetting of the bucket being likened to the upsetting of the sensory centers, giving rise to sensations. This upsetting can be affected by peripheral currents. Small intracellular ideational currents flow freely through the centers without upsetting them. Now when an obstruction occurs in the sensory centers the ideational currents which otherwise flow out and disperse may accumulate, and aided by a chance activity of central character may upset the nerve cell in the same way as our bucket may be upset by the accumulation of water from the small incoming currents (like the ideational currents), when the holes and interstices through which they usually flow out are stopped up. The hypothesis as far as explanation goes is good enough, the drawback is

that it explains too much. For it is hard to understand why intense dreams of this character do not occur more often.

Besides it is hard to realize how an idea can give rise to a sensation of any intensity by the mere agency of ideas, the sensation and its intensity being entirely a function of peripheral stimulation and consequent sense impressions. An idea, a representation, may be very vivid, but does not become a presentation or sensation. A sensation is not an 'intense' idea, nor is an idea a weak sensation. A series of sensations arranged in ascending or descending gradation of intensity may be likened to the continuous series of the spectrum in which there is a qualitative difference from line to line, a difference that admits of no substitution. A sensation the intensity of which is changed is a fallacious percept, a hallucination. A thunder clap perceived as a whisper, a whisper perceived as a thunder clap may be equally regarded as fallacious perception as any other change in the content of the percept. The rustling of leaves perceived as an explosion is as much of fallacious perception as when the paranoiac, for instance, hears in it curses and threats of his enemies. Sensations and percepts cannot change in content or intensity without giving rise to illusions or hallucinations. The changes that may occur in regard to sensations and percepts without their being qualitatively changed and becoming fallacious can only be in vividness belonging to the representative elements which cluster round

the primary and secondary sensory elements. A less intense sensation may be more vividly represented than one of greater intensity. A weak sound, a pale color, a light pain may be more vividly represented than the ones the intensity of which is far greater. This vividness, however, is not at all a characteristic attribute of the sensory elements, it is rather an attribute belonging to the functioning' system of representative elements into which the given sensory elements enter as constituent nuclei.

Keeping to facts as closely as possible we may venture without much risk on the following generalization which may be regarded in the light of a working hypothesis. Just as sensory primary or secondary sensory elements vary in intensity and can. be arranged in a continuous series of gradations of intensities, so do the representative elements vary in vividness and may be arranged in a continuous gradated series of vividness. *Sensory elements have intensity, but no vividness, while representative elements have vividness but no intensity.* Representative elements may refer to the same presentative content with different degrees of vividness. Vividness of representative elements like intensity of sensory elements may pass through all degrees of variation from *maximum* to *minimum* and finally reach a vanishing point. In this respect vividness is like sense intensity and as a matter of fact the two are usually interrelated.

Under ordinary conditions of psychic activity sensory intensity and representative vividness vary together. An intense sensation is vividly represented and a weak sensation less so, the vividness varying directly with increase or decrease of sensory intensity. This direct variation, however, is not always constant; there are conditions under which the two may part company such, for instance, as are found in states of distraction or in states of dissociation. Under such conditions a strong stimulation giving rise to sensory elements of great intensity may give rise to representative elements of but slight vividness. In states of distraction as well as in various states of mental dissociation sensations of great intensity may meet with so little vividness in the representative elements as to fall so to say below the threshold of consciousness, may be submerged into the twilight region of the subconscious and 'not be perceived at all.' From this standpoint we may say that the depth of dissociation varies inversely as the degree of vividness. When vividness is at its *maximum,* dissociation is a its *maximum,* and inversely. *Briefly stated, dissociation and vividness are inversely interrelated variables.*

VII

Functional psychosis, the basis of which is

dissociation, *may also psychologically be regarded,* according to the gravity of the psychopathic affection, *as a decrease or even loss of vividness of representative elements.* The diminution or total loss of vividness may be of different systems of representative elements and will thus give rise to various forms of psychopathic amnesias, which play such an important role in functional psychosis, which in the main is a disease of representative life consisting in a decrease of functional activity of representative elements and which from the present point of view may be regarded as *the tendency towards a minimum of the most important attribute of ideational elements, namely, vividness.*

From this standpoint, the degree of vividness of ideational elements can no more confer on them sensory intensity than the idea of riches, however vivid, can confer upon one the power of wealth. Dream hallucinations, like hallucinations in general, are sensory in character, not because of the intensive nature of the central elements or ideas, but because of the primary and secondary sensory elements present, directly and indirectly peripherally initiated, as it is in the case of. all sensory and perceptive processes. Hallucinations are peripherally induced and are started either in the same sense organ, or indirectly in some other sense organ, the secondary sensory elements form so to say the hypertrophied portion of the hallucinatory percept, but *they are always sensory in character and peripherally initiated.*

The more closely one investigates hallucinations, the more he learns to trace cases of supposed mysterious hallucinations to external peripheral sources. A pure central hallucination is as rare as the fabulous phoenix. A central hallucination means an unanalyzed psychic state. Whenever an analysis of such hallucinations is made, the peripheral sensory character, primary and secondary, stands out distinctly in the foreground. In the so-called 'purely central hallucination' the nuclear primary sensory elements remaining in the background of consciousness cannot easily be traced to their appropriate peripheral sense organs and their external stimuli and are on that account regarded as 'centrally initiated.' Dream hallucinations, hypnotic, hypnagogic and pseudo-hallucinations, if closely analyzed, can be clearly traced to peripheral origin,—to peripheral stimuli that give rise to primary sensory elements that form nuclei round which secondary sensory elements become organized as cytoplasm.

These so-called central hallucinations form the stumbling block of the psychologist and the psychopathologist. To account for them the theory is commonly advanced that the irritability of the ideational centers may reach such a pitch as to give rise to such intense ideational states as to amount to a full-fledged sensation or perception and thus bring about a pure central hallucination. It is strange that such a theory should be maintained at all and that it should gain currency. The theory does not accord

with the facts, and its very principle disregards facts. For no matter what strength an idea may attain it is still far from becoming a sensation. An idea of a bell does not sound and an idea of a blow does not strike. The fact is, as we have pointed out before, ideas or representations are qualitatively different from sensations; an idea can as little be converted into a sensation as the sour taste of vinegar can be turned into violet color of the spectrum. Ideas and sensations differ fundamentally, they differ in kind and no amount of ideational activity can ever be made to become sensory in nature. A higher pitch of ideational activity will make an idea more vivid, but can nowise confer upon it sensory qualities, just as all the immensity of space and infinity or eternity of time can not make them weigh as much as a grain.

A further modification of the same theory is given by those who maintain that central hallucinations are due to the irritability of the higher ideational centers from which 'ideational' currents are propagated to the lower sensory centers. In other words, it is not the idea that becomes by its intensity or by its vividness directly transformed into a sensation, but an intense or vivid idea may give rise to a corresponding sensation without the presence of an external stimulus, or of a peripheral sensory process. Psychologically as well as biologically regarded, the theory is untenable. For it is not in accordance with observed facts that an idea, however vivid, should give rise to a corresponding sensation or percept. Were

that the case the course of internal and external worlds would have become confused and confounded, man would have become the dupe of his own ideas, the world a gigantic madhouse, and the process of ideational activity would have long ago become eliminated in the struggle for existence.

From a physiological standpoint, the theory can hardly be considered, inasmuch as it is in direct opposition to the known physiological laws. Sensory excitation, ideational processes and motor reaction form, so to say, a sensory-ideo motor arc,—the excitation going from peripheral sense organs to central systems and thence to the muscles. Now the conditions postulated by the central theory are such as to have the processes reversed. Sensory processes work upward, from periphery to center, while motor processes work downward, from center to periphery. On the modified central theory, the sensory process in hallucinations is reversed, it goes downward instead of upward. There is not a particle of evidence for such reversal, the assumption being in contradiction to the principles of physiology. The claim of special structures for effecting such a reversal is entirely unfounded. As far as can be ascertained, the neuron works 'cellulipetally' in the direction of the sensory ganglia and central neuron systems, while the neuro-axon works 'cellulifugally' that is from sensory ganglia and central neuron systems to the periphery to the muscular apparatus. There is on the other hand not the least bit of evidence that the functions of neuron

systems can be reversed in their course.

The central theory then cannot stand the test of critical examination as it is neither in accord with the facts it is called to explain, nor does it fall in line with the facts and principles of physiology. We are therefore forced to fall back on the peripheral origin of hallucinations under the condition of central dissociation. According to the theory advanced in this paper, the origin, and structure of hallucinations, of dream hallucinations as well as of pseudo-hallucinations and hypnotic hallucinations do not differ in the least from those of normal perception, a difference unwarrantly claimed by the theories of central origin of hallucinations. *Hallucinations are peripherally initiated, hallucinations are abnormal percepts occurring under the conditions of central dissociation with primary and secondary elements as their central nuclei.*

VIII

The phenomena of so-called 'double thinking' are extremely interesting from our point of view. The patient hears his own thoughts uttered aloud. He has the hallucination of his thoughts uttered when engaged in writing or in reading, though loud reading may check the hallucinatory voices. These hallucinatory voices may be of an imitative character and simply, repeat what is spoken or read by the

patient; or they may be of an anticipatory character and utter the patient's thoughts before he himself utters them. The usual explanation of such cases is found in the theory of the so-called 'overcharged centers.' Where the voices follow and repeat the patient's words and phrases, it is assumed that the auditory centers are highly irritable and overcharged so that stimulations from other centers bring about, discharge into the 'ideational' auditory centers and auditory hallucinations result. In the case of reading, for instance, the visual image of the word awakens also an auditory image but when the auditory centers are overcharged the visual images awaken directly an auditory image before the spoken word takes place. Now this auditory image is so intense, on account of overcharge, that it becomes an auditory hallucination and the patient hears his own thoughts uttered aloud. This reflex action from one 'ideational' center into another occurs while the patient reads or writes, and that is why he has the experience, the hallucination that there is a voice often regarded as 'inner' which repeats his own words and phrases. Cases where the voice utters the words and phrases before they are written are explained on the hypothesis that the central discharge into the overwrought auditory centers occurs before the words are written down or before the motor discharge takes place. When, however, the patient hears the voice repeat the phrases soon after he has uttered them, the phenomena are explained on the supposition that the

centripetal currents from the speech centers into the auditory centers give rise to the voices, the patient hearing his own words shortly after he has uttered them, the efferent discharge from the graphic centers into the auditory centers will give rise to an auditory hallucination of hearing the words and phrases he has just written. In the phenomena of 'double hearing' the patient has the hallucination of hearing his own voice while talking or reading aloud, and then again another voice due to the centripetal discharge from the speech centers to the overcharged auditory centers. Thus in some patients these hallucinations of hearing are brought about by the voluntary suppression of speech, the patient then hears a voice uttering his own thoughts. This is claimed as confirming central initiation—the currents from the word images in the speech centers not having a free outlet run into the overcharged 'ideational auditory centers' and give rise to inner speech heard by the patient.

In opposition to this central theory of double thinking or of 'inner speech' held in various forms by psychologists and psychopathologists, there are some who maintain the view that these 'double thoughts' hallucinations are not of central, but of peripheral origin, being due to hyperæsthesia of the centripetal paths. The apparatus employed in speech carries out not only the requisite delicate movements, but also forms the sensitive apparatus for information of the movements executed. The sense of movement may be

regarded as originating in the muscles, especially in the joints and articular surfaces. Sensory stimulations coming from these structures to their appropriate central systems give rise to kinæsthetic sensations and motor ideas. Now if the peripheral sensory tracts of the muscle sense or of kinaæthetic sensations become hyperæsthetic, kinæsthetic sensations and motor ideas are aroused automatically and may give rise to hallucinations of positions, movements and acts; movements which have not been performed are thus experienced. If now the centripetal sensory tracts of the speech centers are hyperæsthetic then involuntary kinæsthetic sensations and respective ideas arise which go to form the hallucinations known as 'double thought.' The patient experiences 'inner' speech, a voice repeats after him his own thoughts, his own words and phrases. When the speech centers are overcharged and give rise to automatic centrifugal discharges, then the hypeæsthetic centripetal paths bring it back in the form of spoken .words and the patient experiences his own thoughts uttered by an inner voice which is foreign to him. In speaking the inner voice comes after the speech and reverberates like an echo and persists as an 'after image' of the spoken word or phrase. When the patient is engaged in writing, the voice usually precedes the written phrase, because the spoken word image precedes the written word image, the inner voice thus anticipates the patient's writing by uttering his thoughts. This theory seems further to

be confirmed by cases in which such hallucinations take place. If one observes closely cases of 'double thinking' or of 'inner speech,' he often finds' involuntary whispering' present—the patient whispers to himself. These whispers come back to him, on account of the hyperæsthesia of the peripheral paths he hears it as speech of some inner voice.

A close examination of the two theories of the central and of the peripheral, reveals their inadequacy. The central theory, as it is generally put forth and commonly accepted, may possibly be regarded as the more inadequate. For the central theory rests on the psychological fallacy, so prevalent in psychopathology that it may be regarded as the psychopathologist's fallacy, namely; that an idea may reach such a high pitch of intensity as to become sensory in nature and give rise to a percept. The percepts formed by the visual perception of reading awaken, according to this theory, also accompanying ideas of sound intimately related associated with visual word reading, and it is these ideas that reach such a high intensity as to give rise to hallucinations of hearing, the words are read aloud, as if by a strange voice. This explanation, as we have already pointed out, is psychologically incorrect and rests on the fallacy that ideas have intensity and that an intense idea becomes a sensation, or that a sensation is but an intense idea and an idea is a weak, a faint sensation. To modify this view and assume that an intense idea stimulates and gives rise to the formation

of a percept is to assume a supposition not warranted by facts that an idea is equivalent to the action of external stimuli or objects with their requisite physical structures and processes. In either case, the central theory as it stands is not in accord with psychological and physiological data and, as such, cannot possibly be accepted at least in the shape as it is usually put forth.

Furthermore there is an inherent difficulty in the central theory itself. For if it be correct, as the theory claims, that the visual image calls forth an intense auditory image amounting to a hallucination, the hallucinatory voice should precede and not follow the patient's reading. In order to explain the hallucinations of double thinking or of double hearing in the case when the voice follows the reading, it would have to be assumed first that the visual image of the written or printed word stimulates the speech centers, which, innervating the muscular apparatus of speech, give rise to reading, which in turn stimulates the peripheral auditory apparatus, awakening activity in the auditory centers, giving rise to the hearing of the read words, and that then only do the indirect stimulations of the visual image coming from the visual centers awaken once more the same central connections, thus bringing about a repetition of the self-same words heard. We have to assume that the action of the visual centers in stimulating the motor speech centers with the resulting acoustic stimulations and functioning

activity of the auditory centers are enacted before the direct central stimulations from visual center to auditory center take place; in other words we must *assume central retardation.* Now what does this central retardation mean? It means that the phenomena of double thinking or of double hearing are brought about by some form of central inhibition, of central blocking of pathways as it is usually put: in other words, the requisite condition of double thinking is reduced to the psychopathological state of central dissociation.

The inadequate side of the central theory as it is commonly advanced lies in the supposition of its referring auditory hallucinations in the phenomena of double thinking or hearing to the intensification of the auditory image or idea, but no straining of an auditory image can get a sound out of it. Moreover, were the central theory correct it would really involve a double auditory hallucination, one preceding and the other succeeding the reading. For in the process of reading the visual image of the word awakens the auditory image along with its kinæsthetic image, stimulating the centrifugal motor apparatus and giving' rise to the spoken word. Now this awakened auditory image preceding the spoken word, on account of the assumed irritability of the auditory centers and the consequent 'intensification' of the stimulated auditory images, should necessarily give rise to a full-fledged hallucination. When the voice also follows the reading, a dissociation of the visual

from the auditory centers is assumed, a dissociation that gives rise to a secondary succeeding hallucination of the words and phrases read and spoken. The fact that the central theory requires the presence in all phenomena of double thinking that the voice should necessarily precede the reading; that when the voice follows the reading, another hallucinatory voice must have also preceded and that there is also a double stimulation from the visual into the auditory centers, that the hallucination first appears under conditions of association of visual and auditory centers, while the succeeding hallucination occurs immediately under the opposite conditions, namely dissociation,—all these assumptions make the central theory wholly unsatisfactory and unacceptable.

IX

The peripheral theory of double thinking is on general grounds more acceptable as it falls more in line with psychological and physiological principles and facts. Unfortunately the special facts which the theory is called for to explain do not exactly tally with it, and may even be said to contradict the hypothesis. For if the hallucinations of double thought are due to hyperæsthesia of the centripetal sensory-motor tracts, then reading aloud should intensify the hallucination, but the case is quite the reverse,—reading aloud makes the hallucinatory voice to disappear altogether.

On this theory again, the voice should follow the reading. We are thus confronted with the opposite difficulty met with in the central theory. On the central theory the hallucination should precede, while on the peripheral theory the hallucination should follow the reading. The central theory cannot account well for succeeding hallucinations, while the peripheral theory does not account well for preceding hallucinations. On the central theory there should be double hallucinations in cases where the voice follows reading, while on the peripheral theory there should be double hallucinations, when the voice precedes the reading. Besides hyperæsthesia alone should rob the perception of its hallucinatory character, the patient should. be the more conscious of his own utterance.

A closer examination of the peripheral theory discloses a fundamental fallacy which it primarily involves, a kind of *ignoratio elenchi.* The theory is probably correct in principle, but it misses the essential point of the whole problem; it may be an adequate explanation for motor, but not for auditory hallucinations. Hyperæsthesia of the central motor speech tracts would at most give rise to pure kinæsthetic hallucinations: The patient may have hallucinations of action, tension, or of movements in his peripheral speech organs, but he will have no hallucinations of hearing. To have an auditory hallucination, as to have an auditory perception in general, the auditory peripheral and central apparatus should be stimulated. No other organ but

the acoustic apparatus can possibly supply sensations and percepts of an auditory quality, unless the hallucination be of a reflex secondary character, but then it may be induced through any other peripheral source than that of kinæsthesis of the speech organs.

Although each theory taken by itself proves to be inadequate and leads to contradictions and puts us out of accord with facts, still the two may be regarded in a certain sense as supplementing each other if modified by supplementary conditions. Now the central theory emphasizes the aspect of the central character of the phenomena, while the peripheral theory lays stress on centripetal factors; both, however, can be brought in line with facts, if assuming centripetal factors of kinæsthesic and specially auditory hyperæthesia we also refer to the central conditions of dissociation. The patient in double thinking is subject to subconscious states, to states of dissociation; this dissociation is of central character and specially affects the visual and kinæsthetic systems. Impressions, on account of dissociation and peripheral hyperæsthesia, are subconsciously received and subconsciously reacted upon. The visual impressions of the written and printed characters are subconsciously perceived and subconsciously uttered in a whisper and sometimes quite loud, as I had occasion to observe in a case of mine. This subconscious utterance, unperceived by the patient, comes back to him as a strange external

voice proclaiming the patient's thoughts or repeating his words and phrases. The hallucinations of 'double hearing' are due to subconscious whispering which comes back to the patient as an auditory hallucination. I had the occasion to verify this phenomenon of subconscious whispering in a case in which functional dissociation was quite marked and in which auditory hallucinations and double thought were quite persistent.

In cases where the auditory hallucinations precede the reading or writing it is the subconscious whispering along with kinaesthetic and auditory hyperæsthesia that give directly rise to the phenomena of 'double thought,' or of 'double hearing.' The dissociation being in the kinæsthetic systems the patient does not experience consciously the peripheral incoming sensations due to his subconscious whispering. More often the patient continues to whisper subconsciously what he has just read consciously. Such a habit is common with many people in the normal state and is due to the result of the persistence of the peripheral sensory impression, to a kind of verbal after-image. The absence, however, in the normal condition of dissociative states prevents the formation of subconscious whispering with its consequent auditory hallucinations partly due to hyperæsthesia of the auditory tracts.

If cases of 'double thinking' are closely examined one finds in them the presence of subconscious states

with their psychomotor reactions, the patient in walking on the street, for instance, may hear a voice telling him words and phrases that can be traced to signs and advertisements which he has read subconsciously though he himself has not been aware of it. What happens in such cases is this, the patient whispers or even utters aloud the words he subconsciously sees on the signs. It is this subconscious whispering that comes to him back as an auditory hallucination of a voice. In one of my cases in which the patients suffered from auditory hallucinations, I found on close examination the phenomenon of unconscious or subconscious whispering, which became very much aggravated in proportion to the state of distraction in which the patient was, ranging from an almost inaudible whisper to a loud talk, the patient being entirely ignorant of it and could not be made aware of it, even when the attention was fully called to his talking. One of my patients suffering from pronounced auditory hallucinations, but in whom the dissociation is not deep, aptly describes his experiences as 'autovocalization.'

Similar conditions can be induced in hypnosis thus confirming our point of view by experiment on otherwise normal people. If a post-hypnotic suggestion of subconscious whispering is given, the subject experiences an hallucination alogous to that of 'double thought,'—the subject hears a voice telling him the words and phrases which he himself

whispers, but of which he personally is entirely ignorant. The peripheral character of the 'double thought' or hallucination under condition of central dissociation may thus be regarded as an efficient working hypothesis in accord with facts.

From the whole course of our discussion it appears that we remain more closely in touch with facts, if we accept the view that hallucinations. require states of dissociation as central condition and that they are primarily peripherally initiated having secondary sensory elements as their main content; in other words, hallucinations are *dissociated secondary percepts*.