



Hallucinations and Illusions: A Study of the Fallacies of Perception.

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instincts surviving from the ape and the tiger, which an older generation would have explained easily as direct suggestions of the devil; and these may happen to come into focus, to rise to the crest of the wave at the moment of action, and so lead to a departure from what the agent himself, not only in calmer moments, but even then in the central current of his mind, considers "reasonable conduct". The exceptional case to which Prof. Sidgwick narrows down the problem seems capable of explanation on principles similar to those which Aristotle employs and which Prof. Sidgwick himself uses in the easier cases of "unreasonable action". It seems to me that all voluntary action is at the moment chosen *sub ratione boni*. Reason and desire are not absolutely opposed, for all volition involves both. To take the very illustration used by Plato (*Rep.*, iv., 439 e) in his argument for the distinction of mental faculties (I am not referring to the precise purpose for which Plato uses it, which is the distinction between *θυμός* and *ἐπιθυμία*): The man, who has an inclination to look at the dead bodies and yet thinks he ought not to do so, has two maxims floating in his mind, "Morbid tastes are to be repelled" and "All experience is interesting". The latter maxim is not *per se* bad, but only if it comes into conflict with a better.

May we express a hope that Prof. Sidgwick will find occasion to treat more fully this question of ethical psychology, as well as to extend his specimens of reasonable and useful casuistry?

D. G. RITCHIE.

Hallucinations and Illusions: A Study of the Fallacies of Perception. By EDMUND PARISH. London: Walter Scott, 1897. "Contemporary Science Series." Pp. xiv., 390.

IN *Hallucinations and Illusions* Mr. Edmund Parish presents a scholarly study of an important problem. This study, he tells us, grew out of an examination of the International Census of Waking Hallucinations in the Sane. In the English edition—the German is four years old—he has added new matter and recast certain chapters. The book may now be characterised as a sustained effort to set forth, in the light of the most recent psychical and neurological researches, the "common organic principle which, under whatever diversity of conditions, underlies alike normal and fallacious perception". Every leading proposition of the book lies in a matrix of carefully collated authorities. There is nothing vague, timid or unjustified. From definition to conclusion, the exposition is an orderly sequence of relevant considerations. As a result, Mr. Parish's book is at once an important contribution to the psychology of perception and an admirable introduction to the theory of insanity. Henceforward the student of hallucinations.

and illusions—that ancient battle-ground of futile distinctions—will do well to begin here and work backwards. He will find the profit of following a well-considered generalisation through a vast amount of detail. This generalisation is—that Dissociation of Consciousness is the condition precedent of all forms of fallacious perception. Dissociation—psychological and physiological—offers a scientific formula for every variety of hallucination and illusion. It leaves the detailed determination of causes to the practical alienist. If this generalisation can be substantiated, it will constitute a formidable instrument in the criticism of new researches. Even if it is not demonstrated, it will, as the sequel shows, form a good guiding hypothesis.

In chapter i., Mr. Parish distinguishes “sensory” delusions, where the subject believes he sees or hears something, from “mental,” where imagination alone is concerned. He excludes the “universal fallacies of perception,” such as the progressively altering size of the rising moon. He enumerates typical forms of illusion, as the phantom leg after amputation, or delusions due to ambiguity of stimuli. The parts commonly assigned to “imagination” and “sense,” he reconciles by iteration of Gurney’s statement that “all sense perception is ultimately a psychical phenomenon”. “Hallucination is perception without an object.” The originating cause is of no consequence. “Whether I hallucinate with eyes closed or open, whether I see distinct and vivid images or dim floating shapes, is a matter of no importance” (p. 17). Sane or insane, waking or sleeping, spontaneous or experimental, hallucinations are all equally fallacious perceptions. This term, it is true, implies a theory, but the theory has much evidence behind it, and the term indicates a definite relation to established doctrine. The concomitant physiological process of hallucinatory perception may not always depend on similar conditions of brain, but it probably “rests on analogous functional principles” (p. 17).

Before attacking this physiological problem, Mr. Parish, in chapter ii., analyses more in detail the various pathological and physiological conditions of fallacious perception. He grasps into one concept the delusions of insanity, epilepsy, hysteria, ecstasy, alcohol and other drugs, bodily diseases, dreams, hypnotism and crystal gazing. “Obstructed association is indicated in almost every case” (p. 71). In this the author is in general accord with the standard teaching, as, for instance, in Mr. Bevan Lewis’s *Mental Diseases*. The novelty is in the mode of demonstrating how obstructed association serves to establish continuity between the normal and the insané. Even in mania, where the “on-rush of ideas” appears swifter than normal, the appearance is due to the increased flow of verbal images, and this, in turn, to impeded association (p. 72). One has only to watch the muttering delirium of a typhus patient to see that verbal facility may be a symptom of partial cerebral exhaustion. And so through other

instances. Dissociation varies in form and degree. It may even simulate the "waking" state (p. 75). In this chapter, I may single out the treatment of dreams (p. 50), of the hypnotic paralysis to dreams (p. 57), and of crystal vision (p. 63).

In chapter iii., Mr. Parish applies the notion of dissociation to the massed materials of the International Census. He concludes that the percentage of positive cases is too high to be representative. On the other hand, it is too low to be reliable. The inquiry is too little "intensive"; that is, the details per case are too few for criticism. Then, the returns are in danger of proving too much. For instance, if the "state of consciousness" (p. 90) is accurately recorded as "complete wakefulness," the number of hallucinations is found to be 38 per cent. more than in the borderland between sleeping and waking,—precisely the state known to be most favourable to hallucinations. But in the well-recorded cases, Mr. Parish finds indirect and unintended evidence of dissociation. Besides the moment of waking—notoriously a moment of delusion—there are suggestion (p. 94), fixation of the eyes (p. 95), prolonged reading (p. 98), sewing (p. 97),—all of them capable of causing dissociation. To discuss all the points raised in this chapter would be out of proportion. It is enough to say that the memory factor is shown to be more important than the returns, on the face of them, bear, and that the lapse of time between record and incident seriously impairs the value of the observations. The second point seems to me fatal to a great many cases that yet receive the same consideration as those strictly observed and recorded on the spot. In the non-coincidental cases, the objection is less; but, in the cases where sequence or simultaneity is everything essential, lapse of time means the evanescence of the psychological context and with it the possibility of verification. To judge by the enormous difficulties even of objective observation of sequences, a ghost story ten years old might, to my mind, as well be a thousand. And this apart from another fundamental consideration, that many observers indicate their doubtful competence by their indirect admission that the hallucination is the only experience they have had of the kind. Either hallucination is understood in a very restricted sense or the implications of the admission are completely unconsidered. It may be taken as almost certain that only from bad self-observation can a man say that a full-blown hallucination is his only experience of the kind. He is not thinking of dreams, or after-images, or of other innumerable gradations between normal and fallacious perception.

So far the fact and its probable nature. In chapter iv., Mr. Parish discusses the physiological processes in fallacious perception. The chapter is full of controversial neurology and the argument is not all on one side. After rejecting many varieties of centrifugal theories, Mr. Parish returns to the earlier—and later—hypothesis that the "cortical elements concerned in perception

and ideation are identical" (p. 142). [The term "element," which emphasises the inter-relation of cortical systems, is preferable, as a rule, to the term "centre," which, though sufficient for practical ends, over-emphasises the *locus*.] On the basis of his assumption, Mr. Parish designs a simple nerve-schema that fits hallucinations, illusions and other forms of dissociation. A sensory stimulus *S* produces in cortical centre *A* a process *a*. This process *a* irradiates, by association fibres, to other centres "actively associated with *A*," producing in these the processes a^1 , a^2 , a^3 . If, however, the association fibres are "blocked," the irradiation of process *a* will, following the line of least resistance, affect other centres *B*, *C*, *D*, normally acting, not with centre *A*, but with centre *N*, which for the present is assumed to be inactive. The centres *B*, *C*, *D*, thus roused by an unusual stimulus, functionate as if stimulated from their usual centre, *N*. The result is what I may term a "virtual perception," that is, a hallucination. The schema for an illusion is simpler. If the sensory stimuli are too feeble to cause irradiation from centre *A*, then the process *a* is deprived of its normal accompaniment of other processes. The result is an abortive perception, that is, an illusion. In hallucination, the stimulus rouses the wrong department; in illusion, the stimulus fails to get beyond the court of first instance. Thus a hallucination is a perception without its normal sensory object; an illusion is a perception uncorrected by its normal central concomitants. In illusions, certain processes are suppressed; in hallucinations, associations are forced. Thus Mr. Parish succeeds in representing every factor in the problem, and at the same time reduces "all false perception to a single physiological type—Esquirol's illusions" (p. 149).

In chapter v., Mr. Parish expounds in detail the factors of fallacious perception. Any condition that releases an element of the nervous grouping from its "compact system" and permits the irradiation of its energies in unused channels results in dissociation, which thus assumes an unlimited variety of forms. For instance, the elements concerned in organic sensations discharge freely into each other; but let an element loose, and there ensues dissociation. No stimulus by itself will produce hallucination; but when a stimulus co-operates with the blocked nervous machinery, hallucination inevitably follows. We have already seen some causes of dissociation. In this chapter, we have illustrations ranging from after-images—the *débris* of sensation—to the fixed hallucinations of melancholia. Undoubtedly, Mr. Parish handles his generalisation with striking effect. From this we pass naturally to the content of fallacious perception (chap. vi.). The main fact emphasised here is that only what passes in through the senses can be reproduced as hallucination. For instance, the blind from birth have not even the "ghost of an idea of light and darkness," and consequently can have no visual hallucinations (p. 186). Practically, this proposition may be

taken as true; but theoretically, it seems to me a surrender of the inter-association of centres. If we are to assume that the nervous apparatus of vision, in particular the cortical centres, are fully developed, one hesitates to believe, on negative evidence alone, that by no conceivable stimulus could the cortical centres be roused into producing a hallucination even of light. I speak, of course, of the case where the retina is more or less intact, but where the refractive media of the eye are completely opaque to light. If we are to accept Mr. Parish's theory that a centre may be stimulated from other centres not usually acting with it, we must allow the possibility of stimulating, not per sense but per centre, the latent visual centres. Otherwise we must accept the proposition that no cortical centre can be made to begin functioning except through the channel of sense. No doubt it would be difficult to prove the contrary, as it was difficult to prove the electrical excitability of the motor centres, and practically, as I have said, the proposition is true. Many other interesting points in this chapter, in particular "*rapport*" (p. 204) and "negative hallucinations," must go unnoticed.

In chapter vii., we have an account of "reflex hallucinations," the classical instance being "coloured hearing". Many theories are offered of this striking experience, but not one is entirely satisfactory. Except that the "colour" has not been consciously experienced in association with sounds, I find some difficulty in perceiving any real difference between this problem and the problem raised when a spoken word instantly induces a visual coloured image. And it is admitted that the minor instances of the phenomenon may be accounted for by ordinary association (p. 228). Perhaps the most important point in the chapter is the extended meaning given to the "*point de repère*," which must be taken to include any "sensory impression" that may act as a mental cue, and not merely an irritation of a particular sense, or an objective point. It seems to me that too little has been made of the *musca volitantes* and the retinal vessels as "*points de repère*". They offer a ready nucleus for moving hallucinations, when figures approach and recede (Gurney: MIND, x., 178).

In chapter viii., perhaps the most striking piece of analysis is the explanation of "audible thinking". This, according to Mr. Parish, is due to slight articulatory movements resulting from central innervation. If the movements are unnoticed, as the movements of the eye are, and yet the voice is heard, the result is a hallucination of an objective voice. This theory has much to support it, and the hypnotic experiment recorded at the end of the chapter makes it all the more convincing. Automatic speech, such as is here concerned, presumes dissociation or "splintering off" (p. 271).

Chapter ix.—telepathic hallucinations—is a searching examination of the fundamental principles involved in "Phantasms of the Living". The chapter must be taken in connection with the

criticism of waking hallucinations, of which the telepathic cases are special instances. Here again Mr. Parish applies his theory of dissociation. But he has some primary objections. The question of "chance" is fundamental to the method of the investigation. To those accustomed to handle statistics, the temptation to infer causation from a few coincidences is ever present; but the stronger the temptation the more necessary is the intensive analysis of the correlated occurrences. And Mr. Parish maintains, as in the former chapter, that the analysis is too little intensive. Then, is telepathic agency a *vera causa*, or only a hypothesis required by the figures? Are the hallucinations "veridical"? That is, does their content adequately correspond to the fact assumed to be represented? Mr. Parish gives many reasons for doubting the "veridicality" in all the cases (p. 276). As discounting the records, he again emphasises the memory fallacy, the identifying fallacy, the adaptation of correspondence after the fact, and the like. These considerations, if in the charm of the new hypothesis they were not sufficiently allowed for, were doubtless present to the minds of the investigators. A more damaging fact is the dwindling percentage of positive cases as the time of occurrence approaches the time of record. His explanation of this fact seems to me nearer the truth than that afforded by telepathy. "Thus there is nothing for it but to explain the circumstance that the proportion of veridical hallucinations reported as occurring more than ten years ago, is nine times as great as the proportion occurring within the last five years, as indicating that such striking experiences continue to be remembered when a multitude of other hallucinations have passed out of mind. To compare the coincidental and non-coincidental hallucinations is to compare the incomparable, and the attempt must be abandoned as at the outset fruitless" (p. 289). The remarks already made on "waking hallucinations" apply with even greater force to the alleged telepathic cases; for here the essence of the case is causal coincidence of hallucination and objective occurrence: not the mere psychological occurrence itself. If the telepathic hypothesis is to lie, it must exclude all that is due to association, to community of experiences, to what I may name the "mental venue" of the telepathic correlates, to suggestion. The Psychical Research Society endeavours to exclude these factors. But, in the light of what we have already accepted, namely, the identical nature of waking and dreaming hallucination, their exclusion is almost impossible. And that they certainly are not excluded in every case Mr. Parish shows by an analysis of several cases (pp. 293-4). In these he discovers further proof of dissociation. The matter of coincidence seems to me completely altered if dreams and waking hallucinations are to be taken as of the same order and due to similar psycho-physical conditions. If telepathic agency were an established fact, the analysis of the coincidences would be a relatively simple thing. For then

the coincidences due to that one agency would be as easy to isolate as the coincidence of a dream and a special occurrence is now. There is almost nothing in the records to indicate that the recorders always understood that, for the purpose of the record, the psychological context was as valuable as the isolated occurrence. The physiological context also is not unimportant; but the details of this are practically none. With the experimental cases we get to firmer ground, but the same difficulties have to be faced. It is, however, in this direction that we must look for final confirmation or rejection. I cannot help feeling that the simple and fascinating hypothesis of telepathic agency has led almost all the recorders of phenomena to put less stress on the part possibly due to agencies already known. Mr. Parish's conclusion is that telepathy is—not proven.

In his last chapter—x.—Mr. Parish touches on the familiar difficulties in “explaining” psychical facts by non-psychical facts. As a matter of method, this is outside his problem. He is entitled to assume a psycho-physical organisation, through which certain phenomena emerge. The “blocking” of paths in this mechanism is merely the forming of another mechanism, through which certain similar phenomena emerge. The ultimate question of the relation of neurosis and psychosis does not fall within the scope of a positive research like this. At the same time, one is glad to have indications of the author's final point of view. Everywhere he is careful not to confuse psychological terms or notions with physiological terms or notions, and he never offers a piece of speculative physiology for more than it is. In an appendix he gives analytical tables of the English and Munich Census of Hallucinations. It remains to add that the book is well written and well rendered in English.

W. LESLIE MACKENZIE.

Ueber die Raumwahrnehmungen des Tastsinnes. Ein Beitrag zur experimentellen Psychologie. Von Dr. VICTOR HENRI. Berlin: Verlag von Reuther u. Reichard, 1898. Pp. xii., 228.

WHEN an object impinges on the skin with sufficient force, we have a tactual sensation, characterised by intensity, quality (pressure, pain, heat, cold), duration and spatiality. The present volume is a monograph on the spatial attributes and relations of touch. It embodies a number of original investigations, carried out by Dr. Henri since 1892, and a review of previous work, experimental and theoretical. Pt. i., ‘facts,’ deals with tactual space under the three headings of extension (stimulus limen, difference limen, correctness of ideas of space), localisation (with contact and movement, visual localisation, localisation with description), and physiology and pathology (reflex localisation, transplantation, etc.). Pt. ii., ‘theories,’ has a chapter on the origin and development of the spatial moment in tactual sensations, and