

positive force may be. And here the other phenomena gone over by Mr. Podmore come in to give some feeble help. But they run into a mass of details ill adapted for synopsis, so with this brief notice I conclude.

Report on the Census of Hallucinations. H. SIDGWICK, A. JOHNSON, F. W. H. MYERS, F. PODMORE, E. M. SIDGWICK. Proceedings of the Society of Psychical Research. Part XXVI. Aug., 1894. Vol. X., pp. 25-422.

This extraordinarily thorough and accurate piece of work is understood to be the fruit mainly of Mrs. Sidgwick's labors; and the present reviewer, who has had a little experience of his own with the 'Census,' and knows something of its difficulties, may be allowed to pay his tribute of admiration to the energy and skill with which that lady and the other members of the committee have executed their burdensome task. They collected no fewer than 17,000 answers to the question: have you had, when awake, etc., an hallucination, etc. Of these answers 2,272 were 'yes,' and these Yes-cases were corresponded with or interviewed or in other ways subjected to as critical a scrutiny as circumstances allowed. The result is an unusually careful handling of the raw material offered, and a great accession of new facts. The census of hallucination was, as is well known, an idea of the late Edmund Gurney, who thought that the theory of chance-coincidence applied to 'apparitions' reported as occurring on the day of death of the person appearing might be tested by statistics. Gurney himself collected 5705 answers, and, applying statistical reasoning to them, thought it superabundantly proved that the 'veridical' cases amongst them were too frequent to be due to chance. The Sidgwick report, unlike that of Herr Parish, keeps the Gurney question well to the front, and its general discussion of the physiological and other conditions of the hallucinatory process is less erudite and elaborate than that of the German writer.

I will quote immediately the conclusions of the report as to apparitions at the time of death. "We have 30 death-coincidences in 1300 cases [of visual hallucination of recognized living persons] or about 1 in 43. But chance would . . . produce death-coincidences at the rate of 1 in 19,000 apparitions of recognized living persons, and 1 in 43 is equivalent to about 440 in 19,000, or 440 times the most probable number. Or, looking at the matter in a different way, we should expect that if death-coincidences only occur by chance, it will require 30 times 19,000, or 570,000 apparitions of living persons to produce 30 such coincidences. . . . We con-

clude then that the number of death-coincidences in our collection, if our estimate of them is accepted as fair, is not due to chance. This will not be maintained by anyone with the most elementary acquaintance with the doctrine of chances. The opponent of a telepathic or other supernormal explanation must take one of three other lines of argument, . . . even one death-coincidence being more than we should be justified in expecting chance to produce in a collection ten times the size of ours" (p. 247-8).

Everything in this conclusion depends on the numerical premises being severally reached in legitimate ways.

In the first place, take the assumption that out of 19,000 apparitions of the sort considered, only 1 should be expected to occur on the day of death of the person seen. This is based on the mean death-rate of England. Since in England the mean annual death-rate at present is 19.15 per 1,000 of population, the mean daily death-rate must be 365 times less, or 1 in about 19,000. All daily operations concerning persons, if not directly contingent upon their death, would under these conditions be more likely to strike the living than the dying in the proportion of 19,000 to 1, and this no matter how frequent or infrequent absolutely such operations should prove to be. Apparitions are operations concerning persons; and whether such apparitions be as frequent as dreams, or whether they be very rare, whether a large fraction or a small fraction of the population be visited by them, we should expect (if they be due to mere chance) always to find this proportion observed, that only $\frac{1}{19000}$ of them should be of people who were dying on the day when their apparition took place. [This 'day' is measured in the report by the 12 hours preceding and the 12 hours following the death.] To the present writer this reasoning and computation seem valid.¹

¹ In particular does the contention of Herr Parish (see the article on him, above, *ad finem*) seems inadmissible. He says that in estimating the probability that apparitions at the time of death are due to something more than chance we ought to measure their frequency by the ratio of their number to that of *the aggregate of all phantasms of whatsoever description*. He would even include illusions, since the process of illusion and hallucination are for him fundamentally the same. To base an argument on the ratio between the number of veridical death-apparitions and that of merely *all apparitions of recognized living persons*, he says, is a *petitio principii*. The point is a subtle one, and may well make one momentarily hesitate, but reflection leaves no permanent doubt. We have three orders of frequency in hallucinations to consider, that of hallucinations at large, that of hallucinations of persons, and that of hallucinations of dying persons. These may be caused by their respective objects, or may come at 'random,' their causes lying exclusively in the subjective cycle. The point is to see whether anything in the frequency itself can help us to decide which of these alternatives is the true one. Now with what frequency in outer things might these frequencies

Next, how are the numbers 1,300, for the whole number of visual apparitions of recognized living persons, and 30 for the coincidental ones among them, established? Neither of these numbers is that of the crude face of the census-returns, each being a number estimated by applying certain corrections to those returns, the corrections all being such as to weight the figures in favor of chance-coincidence as far as this can with any plausibility be done. The crude returns certainly include an unduly large percentage of coincidental apparitions, partly because a large number of non-coincidental ones are speedily forgotten and do not figure in the returns, and partly because, of the coincidental ones, some are likely to have been put in by careless collectors on account of that character, and not to have simply turned up in the census-taking by due process of chance. Now can any definite estimate be made of the amount of error that has crept into the census from these sources? The authors of the report find, by comparing the dates of the returns, that cases are the more frequent the more recent they are. This proves a forgetfulness increasing with antiquity. The obvious remedy would be, ascertaining what recent period could be taken as trustworthy, to find out how many hallucinations had visited the persons figuring in the census during that time, and then to treat

in hallucinations keep tally in the two cases, of outer causation and of no outer causation respectively? Obviously if persons do not cause hallucinations of themselves, the hallucinations of persons should be *no more* frequent among hallucinations than persons are frequent among all the things that may become objects of hallucinations; whilst on the contrary, if persons, and persons alone, do cause hallucinations, then hallucinations of persons *should* be relatively more frequent than other hallucinations, because the causation by the real outer object would be simply added, for this class alone, to the random inner causes that produce hallucinations in general. Similarly if the deaths of persons do not tend to cause hallucinations of those persons, the hallucinations of the dying should be *no more* frequent among hallucinations of persons than the dying themselves are frequent among persons; whilst if on the contrary the dying, and the dying alone among persons, do cause hallucinations of themselves, then these hallucinations should be more frequent among hallucinations of persons than the dying are among the whole population of persons. This latter ratio is what the Sidgwick committee finds realized in fact; hence its conclusion that the dying do cause hallucinations of themselves. Herr Parish's selection of the total number of hallucinations *überhaupt* as one subjective term of comparison leads to a statistical test which is also true in theory, *provided the corresponding objective terms be altered to match*. We shall then have (if dying persons do not cause hallucinations of themselves) this proportion: As is the ratio of real dying persons to all other real things, so at its highest should be the ratio of hallucinations of the dying to all other hallucinations whatsoever. But although there is no theoretic objection to this proportion, it is practically worthless, because we have no statistical data by which to compute the ratio of dying persons to all other real things.

the earlier part of their lives as if, in spite of their yielding smaller 'returns,' they must really have included as large a number, proportionally, of similar experiences. Taking the past 3 months as the trustworthy period, and considering visual cases alone, the authors of the report agree that the face-returns should be multiplied by 4, in order to represent the true number of 'apparitions' seen by their informants. But, as the total number of specifically described apparitions of recognized living persons returned in the census equals 350, and $350 \times 4 = 1,400$, the round number of 1,300 may be taken as probably near the figure sought.¹

The whole number of death-coincidences amongst the 350 cases in question is 65, or 62 when 3 cases known to be selected by their collectors are struck out. There is no ground for supposing that death-coincidences tend to be forgotten by their percipients: On the contrary the cases appearing in the census date with disproportionate frequency from by-gone decades. This, of course, may be due to the fact that the number 62 is too small to give true averages when distributed over the 36 years covered. But to be on the side of severity the committee assume that the proportion reported from the last decade is the only normal one, and that the earlier stories may be false, and (by a computation based on figures which need not here be reproduced) they knock off 22 on this account from the total of death-apparitions to be used, and make it 40 instead of 62, just the opposite treatment to that which they applied to the gross group of 350 cases of which these death-cases are a part. From these 40 they again knock off 8 as an ample allowance for possibly unreported selection on the collector's part², and again 2 for good measure and as a sop to the adversary, so that finally the reduced number of 'veridicals' to be compared with the augmented number of veridicals and non-veridicals taken together, falls to the figure 30 which is used in the conclusion quoted from the report on a previous page.

¹The period of three months is found trustworthy when 'suspicious' cases are eliminated. Suspicious cases are those where the appearance may not have been an hallucination. Figures seen in a bad light, or through an open door in passing, or at a distance in the open air, are included in this category. Study of the cases reported to have occurred within three months of the accounts given, shows that these 'suspicious' ones are rarest in the first month, and are therefore presumably peculiarly liable to oblivescence. But if they are counted in, one month and not three months becomes the trustworthy period, and the multiplier of the crude returns must then be changed from 4 to $6\frac{1}{2}$. The influence of this counting of suspicious cases is considerably to enlarge the total of hallucinations to be supposed, and to make the odds in favor of the coincidental ones being due to something else than chance sink from 440 to 292 against 1.

²The data for computing this number of 8 are given on p. 243 of the report.

The reader will appreciate the candor of the committee, and see how earnestly they have sought to eliminate all that might add specious color, as distinguished from real weight, to their own side. The reader whom their argument does not impress will have, they say, to take one of three courses. He may deny the accuracy of the coincidental cases, to which the reply of the committee consists in printing 31 good ones as a sample. He may still insist that the collectors have loaded their returns with an excessive number of these cases, to which the reply is too minute for quotation here (pp. 57 and 210 of the Report) but amounts to a detailed proof that there is probably no overloading of the returns in general with *yesses*, and to good reason shown for the opinion that of the 62 coincidental apparitions taken as a basis for the enquiry, at most 10 can be assumed as possibly added deliberately by the collectors to their returns. But these have been eliminated in the reduced number of 30, finally admitted to count in the argument.—Thirdly the objector may say that many of the veridical apparitions *are* causally connected with the death, but not by telepathy or any other *vis occulta*. The illness of an aged person is the cause both of death and of anxiety among relatives. Anxiety is proved by the committee's own facts to predispose to hallucination¹; so both the hallucination in such cases and the death can be common effects of a single natural cause, the illness, working on two persons. This, it will be remembered, is Parish's final objection, mentioned above; and the report treats it as important. At the same time the authors point out that there are but 23 cases of the 62 veridicals in which the illness was known beforehand, and only in some of these was there anxiety. Moreover the close coincidence *in hour* of the death with the apparition in so many cases seems to preclude the application on a large scale of a cause like anxiety which in the nature of things must have lasted many hours or days.²

¹ Anxiety about illness was probably present in 89 out of the 1622 cases of which there are first-hand accounts, and grief about death in 42 of the other cases, making nearly 1-12 of the whole number. As we don't spend 1-12 of our lives in grief and anxiety of these sorts it must be that during these emotions hallucinations come with undue frequency.

² Mere expectation, which often causes illusions, seems to play no important part in causing hallucinations. At least the committee find only 14 cases in the whole collection where the phantasm was of a person for whose arrival the percipient was looking out. They give cases where 'suggestion' may be reckoned a cause (collective cases, prediction of apparition at spiritist seance, etc.), but these are ambiguous, and if occult agency be once admitted as a possibility, are perhaps as likely to be caused by that as by 'suggestion'.

It will thus be seen that the committee have considered on their own account all the difficulties urged by Herr Parish (with the exception of the 'pseudo-presentiment' hypothesis of Royce) and that they have considered them in a more objective and less conjectural way than he, without their case being weakened to any certain extent.¹ Plainly, though, if the 30 cases left to be used in the argument could all have been first-class cases (with record of hallucination before event, no anxiety, etc.) the argument would have been more convincing. But the successive weedings of the crude number 62 could not be performed selectively so as to accomplish just this result, and the Census is therefore still too small for *knock-down* proof of occult cause. If telepathy be regarded on other grounds as possible, then these statistics make it extremely probable. Otherwise they will not convert the disbeliever, who will pooh-pooh the statistical method *in toto* when it takes 17,000 answers to get 30 good cases to cipher with, saying that the field is too vast and lean for profitable reaping, that figures got by applying so many hypothetical corrections to inaccurate crude data, savor too much of guess-work to inspire confidence, and that cooked returns are cooked returns, even though, like these, they be cooked for the safe side, the side adverse to the conclusion reached by their means.²

This sort of reception by the hard-hearted is inevitable, and it is useless to ask how strictly logical it may be, for belief follows psychological and not logical laws. A single veridical hallucination experienced by one's self or by some friend who tells one all the circumstances has more influence over the mind than the largest calculated numerical probability either for or against. I can testify to this from direct observation. The case will, therefore, still hang

¹ The only criticism I can make is that the committee have possibly been too indulgent to the cases where the percipient was in bed. His conviction that he was awake is to be taken with large allowance under these circumstances.

² The figure 4, for example, used as a multiplier of the crude returns in correction of forgetfulness, is reached by this process: out of 87 visual hallucinations reported for the most recent year, 42 are stated to have occurred within the most recent quarter, and of these 19 within the most recent month, and 12 within the most recent half-month; numbers which correspond approximately to 168, 228, and 288 per annum instead of 87. But if from the 87 the 'suspicious' cases as described above are eliminated, and the most recent quarter examined, the figures are much more even. There are 12 suspicious cases in the recent quarter; so that then 30 instead of 42 becomes the number to be counted in the quarter. Of these the last month shows 12, and the last half-month 5, numbers which correspond to 120, 144, and 120 per annum respectively. This looks like distribution by 'natural law,' *provided the evenness of the figures be not accidental*. But where such small numbers are involved, how can one be sure on that point?

pending before public opinion, in spite of the laborious industry of Mrs. Sidgwick and her colleagues. Of course if the results of the American Census, not yet published, should correspond, that will add retroactive weight. But the most that can be said, so far, in the opinion of the present writer, is this, that the Sidgwick report affords *a most formidable presumption* that veridical hallucinations are due to something more than chance. Now this means that the telepathic theory, and whatever other occult theories may offer themselves, have fairly conquered the right to a patient and respectful hearing before the scientific bar; and no one with any real conception of what the word 'Science' means, can fail to realize the profound issues which such a fact as this may involve.

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ETHICAL.

A Study of Ethical Principles. JAMES SETH. New York: Imported by Charles Scribner's Sons. 1894. Pp. XVI, 460.

The subject is presented in three parts;—(I) an analysis of the psychological basis of ethical principles, and criticism of the corresponding systems; (II) a discussion of the virtues, under the caption of The Moral Life; and (III) the metaphysical implications of ethics. In Part I, Prof. Seth criticises Hedonism as unduly emphasizing the sentient nature of man on the one hand, and so-called Rigorism on the other as laying exclusive stress upon man's rational nature. Each is based upon a partial psychology, and hence incomplete and misleading. He would therefore distribute the emphasis, so that the total personality embracing both sensibility and reason is regarded as the proper basis of ethical principles. This personality differs from the lower, or animal self-hood of mere individuality in the power of transcending the entire impulsive and sentient life, subduing it unto the higher rational self. This power constitutes the will, and differentiates man from the animal. Following the epistemological analogy, as the Ego constructs the various data of sensation through the apperceptive process, forming out of them an object of knowledge, so in the construction of the moral end out of the impulses, there is a similar synthesis of the crude data of sensibility. Prof. Seth's ideal, therefore, is self-realization, and his ethical system he styles Eudaimonism, wishing to restore its original Aristotelian significance which presented pleasure as 'the very bloom and crown of goodness.' We question the propriety of using