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THE INTERPRETATION
of
NATURE and the PSYCHE

C. G. JUNG

SYNCHRONICITY:
AN ACAUSAL CONNECTING
PRINCIPLE

W. PAULI

THE INFLUENCE OF ARCHETYPAL
IDEAS ON THE SCIENTIFIC
THEORIES OF KEPLER



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EXPOSITION

The discoveries of modern physics have, as we know, brought about a significant change in our scientific picture of the world, in that they have shattered the absolute validity of natural law and made it relative. Natural laws are *statistical* truths, which means that they are completely valid only when we are dealing with macrophysical quantities. In the realm of very small quantities *prediction* becomes uncertain, if not impossible, because very small quantities no longer behave in accordance with the known natural laws.

The philosophical principle that underlies our conception of natural law is *causality*. But if the connection between cause and effect turns out to be only statistically valid and only relatively true, then the causal principle is only of relative use for explaining natural processes and therefore presupposes the existence of one or more other factors which would be necessary for an explanation. This is as much as to say that the connection of events may in certain circumstances be other than causal, and requires another principle of explanation.¹

¹ [Other than, or supplementary to, the law of chance.—Ers.]

We shall naturally look round in vain in the macro-physical world for acausal events, for the simple reason that we cannot imagine events that are connected non-causally and are capable of a non-causal explanation. But that does not mean that such events do not exist. Their existence—or at least their possibility—follows logically from the premise of statistical truth.

The experimental method of inquiry aims at establishing regular events which can be repeated. Consequently, unique or rare events are ruled out of account. Moreover, the experiment imposes limiting conditions on nature, for its aim is to force her to give answers to questions devised by man. Every answer of nature is therefore more or less influenced by the kind of questions asked, and the result is always a hybrid product. The so-called "scientific view of the world"² based on this can hardly be anything more than a psychologically biased partial view which misses out all those by no means unimportant aspects that cannot be grasped statistically. But, to grasp these unique or rare events at all, we seem to be dependent on equally "unique" and individual descriptions. This would result in a chaotic collection of curiosities, rather like those old natural history cabinets where one finds, cheek by jowl with fossils and anatomical monsters in bottles, the horn of a unicorn, a mandragora manikin, and a dried mermaid. The descriptive sciences, and above all biology in the widest sense, are familiar with these "unique" specimens, and in their case only *one* example of an organism, no matter how unbelievable it may be, is needed to establish its existence. At any rate numerous observers will be able

² ["naturwissenschaftliche Weltanschauung."]

to convince themselves, on the evidence of their own eyes, that such a creature does in fact exist. But where we are dealing with ephemeral events which leave no demonstrable traces behind them except fragmentary memories in people's minds, then a single witness no longer suffices, nor would several witnesses be enough to make a unique event appear absolutely credible. One has only to think of the notorious unreliability of eye-witness accounts. In these circumstances we are faced with the necessity of finding out whether the apparently unique event is really unique in our recorded experience, or whether the same or similar events are not to be found elsewhere. Here the *consensus omnium* plays a very important role psychologically, though empirically it is somewhat doubtful, for only in exceptional cases does the *consensus omnium* prove to be of value in establishing facts. The empiricist will not leave it out of account, but will do better not to rely on it. Absolutely unique and ephemeral events whose existence we have no means of either denying or proving can never be the object of empirical science; rare events might very well be, provided that there was a sufficient number of reliable individual observations. The so-called *possibility* of such events is of no importance whatever, for the criterion of what is possible in any age is derived from that age's rationalistic assumptions. There are no "absolute" natural laws to whose authority one can appeal in support of one's prejudices. The most that can fairly be demanded is that the number of individual observations shall be as high as possible. If this number, statistically considered, falls within the limits of chance expectation, then it has been statistically proved that it was a question

of chance; but no *explanation* has thereby been furnished. There has merely been an exception to the rule. When, for instance, the number of symptoms indicating a complex falls below the probable number of disturbances to be expected during the association experiment, this is no justification for assuming that no complex exists. But that did not prevent the reaction disturbances from being regarded earlier as pure chance.³

Although, in biology especially, we move in a sphere where causal explanations often seem very unsatisfactory—indeed, well-nigh impossible—we shall not concern ourselves here with the problems of biology, but rather with the question whether there may not be some general field where acausal events not only are possible but are found to be actual facts.

Now, there is in our experience an immeasurably wide field whose extent forms, as it were, the counterbalance to the domain of causality. This is the world of chance, where a chance event seems causally unconnected with the coinciding fact. So we shall have to examine the nature and the whole idea of chance a little more closely. Chance, we say, must obviously be susceptible of some causal explanation and is only called "chance" or "coincidence" because its causality has not yet been discovered. Since we have an inveterate conviction of the absolute validity of causal law, we regard this explanation of chance as being quite adequate. But if the causal principle is only relatively valid, then it follows that even though in the vast majority of cases an apparently chance series can be

³ [Cf. Jung, *Studies in Word Association*, trans. by M. D. Eder (London, 1918; New York, 1919).—Ers.]

causally explained, there must still remain a number of cases which do not show causal connection. We are therefore faced with the task of sifting events and separating the acausal ones from those that can be causally explained. It stands to reason that the number of causally explicable events will far exceed those suspected of acausality, for which reason a superficial or prejudiced observer may easily overlook the relatively rare acausal phenomena. As soon as we come to deal with the problem of chance the need for a statistical evaluation of the events in question forces itself upon us.

It is not possible to sift the empirical material without a criterion of distinction. How are we to recognize acausal combinations of events, since it is obviously impossible to examine all chance happenings for their causality? The answer to this is that acausal events may be expected most readily where, on closer reflection, a causal connection appears to be inconceivable. As an example I would cite the "duplication of cases" which is a phenomenon well known to every doctor. Occasionally there is a trebling or even more, so that Kammerer⁴ can speak of a "law of series," of which he gives a number of excellent examples. In the majority of such cases there is not even the remotest probability of a causal connection between the coinciding events. When for instance I am faced with the fact that my tram ticket bears the same number as the theatre ticket which I buy immediately afterwards, and I receive that same evening a telephone call during

⁴ Paul Kammerer, *Das Gesetz der Serie* (Stuttgart and Berlin, 1919).

which the same number is mentioned again as a telephone number, then a causal connection between them seems to me improbable in the extreme, although it is obvious that each event must have its own causality. I know, on the other hand, that chance happenings have a tendency to fall into aperiodic groupings—necessarily so, because otherwise there would be only a periodic or regular arrangement of events which would by definition exclude chance.

Kammerer holds that, though "runs" ⁶ or successions of chance events are not subject to the operation of a common cause, ⁶ i.e., are acausal, they are nevertheless an expression of inertia—the property of persistence.⁷ The simultaneity of a "run of the same thing side by side" he explains as "imitation." ⁸ Here he contradicts himself, for the run of chance has not been "removed outside the realm of the explicable," ⁹ but, as we would expect, remains inside it and is consequently reducible, if not to a common cause, then at least to several causes. His concepts of seriality, imitation, attraction, and inertia belong to a causally conceived view of the world and tell us no more than that the run of chance corresponds to statisti-

⁶ Ibid., p. 130.

⁶ Pp. 36, 93 f., 102 f.

⁷ "The law of series is an expression of the inertia of the objects involved in its repetitions (i.e., producing the series). The far greater inertia of a complex of objects and forces (as compared to that of a single object or force) explains the persistence of an identical constellation and the emergence, connected therewith, of repetitions over long periods of time" (p. 117).

⁸ P. 130.

⁹ P. 94.

cal and mathematical probability.¹⁰ Kammerer's factual material contains nothing but runs of chance whose only "law" is probability; in other words, there is no apparent reason why he should look behind them for anything else. But for some obscure reason he does look behind them for something more than mere probability warrants—for a *law of seriality* which he would like to introduce as a principle coexistent with causality and finality. This tendency, as I have said, is in no way justified by his material. I can only explain this obvious contradiction by supposing that he had a dim but fascinated intuition of an acausal arrangement and combination of events, probably because, like all thoughtful and sensitive natures, he could not escape the peculiar impression which runs of chance usually make on us, and therefore, in accordance with his scientific disposition, took the bold step of postulating an acausal seriality on the basis of empirical material that lay within the limits of probability. Unfortunately he did not attempt a quantitative evaluation of seriality. Such an undertaking would undoubtedly have thrown up questions that are difficult to answer. The casuistic method serves well enough for the purpose of general orientation, but only quantitative evaluation or the statistical method promises results in dealing with chance.

Chance groupings or series seem, at least to our present way of thinking, to be meaningless, and to fall as a general rule within the limits of probability. There are, however, incidents whose "chancefulness" seems open to

¹⁰ [The term "probability" therefore refers to the probability on a chance hypothesis (Null Hypothesis). This is the sense in which the term is usually used in this paper.—Ems.]

doubt. To mention but one example out of many, I noted the following on April 1, 1949: Today is Friday. We have fish for lunch. Somebody happens to mention the custom of making an "April fish" of someone. That same morning I made a note of an inscription which read: "Est homo totus medius piscis ab imo." In the afternoon a former patient of mine, whom I had not seen in months, showed me some extremely impressive pictures of fish which she had painted in the meantime. In the evening I was shown a piece of embroidery with fish-like sea-monsters in it. On the morning of April 2 another patient, whom I had not seen for many years, told me a dream in which she stood on the shore of a lake and saw a large fish that swam straight towards her and landed at her feet. I was at this time engaged on a study of the fish symbol in history. Only one of the persons mentioned here knew anything about it.

The suspicion that this must be a case of *meaningful coincidence*, i.e., an acausal connection, is very natural. I must own that this run of events made a considerable impression on me. It seemed to me to have a certain numinous quality.¹¹ In such circumstances we are inclined to say, "That cannot be mere chance," without knowing what exactly we are saying. Kammerer would no doubt have reminded me of his "seriality." The strength of an

¹¹ The numinosity of a series of chance happenings grows in proportion to the number of its terms. Unconscious—probably archetypal—contents are thereby constellated, which then give rise to the impression that the series has been "caused" by these contents. Since we cannot conceive how this could be possible without recourse to positively magical categories, we generally let it go at the bare impression.

impression, however, proves nothing against the fortuitous coincidence of all these fishes. It is, admittedly, exceedingly odd that the fish theme recurs no less than six times within twenty-four hours. But one must remember that fish on Friday is the usual thing, and on April 1 one might very easily think of the April fish. I had at that time been working on the fish symbol for several months. Fishes frequently occur as symbols of unconscious contents. So there is no possible justification for seeing in this anything but a chance grouping. Runs or series which are composed of quite ordinary occurrences must for the present be regarded as fortuitous.¹² However wide their range may be, they must be ruled out as acausal connections. It is, therefore, generally assumed that all coincidences are lucky hits and do not require an acausal interpretation.¹³

¹² As a pendant to what I have said above, I should like to mention that I wrote these lines sitting by the lake. Just as I had finished this sentence, I walked over to the sea-wall and there lay a dead fish, about a foot long, apparently uninjured. No fish had been there the previous evening. (Presumably it had been pulled out of the water by a bird of prey or a cat.) The fish was the seventh in the series.

¹³ We find ourselves in something of a quandary when it comes to making up our minds about the phenomenon which Stekel calls the "compulsion of the name." What he means by this is the sometimes quite grotesque coincidence between a man's name and his peculiarities or profession. For instance Herr Gross (Mr. Grand) suffers from delusions of grandeur, Herr Kleiner (Mr. Small) has an inferiority complex. The Altmann sisters marry men twenty years older than themselves. Herr Feist (Mr. Stout) is the Food Minister, Herr Romtäuscher (Mr. Horsetrader) is a lawyer, Herr Kalberer (Mr. Calver) is an obstetrician, Herr Freud (joy) champions the pleasure-principle, Herr Adler (eagle) the will-to-power, Herr Jung (young) the idea of rebirth, and so on. Are these the whimsicalities of chance, or the suggestive

This assumption can, and indeed must, be regarded as true so long as proof is lacking that their incidence exceeds the limits of probability. Should this proof be forthcoming, however, it would prove at the same time that there are genuinely non-causal combinations of events for whose explanation we should have to postulate a factor incommensurable with causality. We should then have to assume that events in general are related to one another on the one hand as causal chains, and on the other hand by a kind of *meaningful cross-connection*.

Here I should like to draw attention to a treatise of Schopenhauer's, "On the Apparent Design in the Fate of the Individual,"¹⁴ which originally stood godfather to the views I am now developing. It deals with the "simultaneity of the causally unconnected, which we call 'chance.'"¹⁵ Schopenhauer illustrates this simultaneity by a geographical analogy, where the parallels represent the cross-connection between the meridians, which are thought of as causal chains.¹⁶

All the events in a man's life would accordingly stand in two fundamentally different kinds of connection: firstly, in the objective, causal connection of the natural process; secondly, in a subjective connection which exists only in relation to the individual who experiences it, and which is thus as subjective as his own dreams.

effects of the name, as Stekel seems to suggest, or are they "meaningful coincidences"? ("Die Verpflichtung des Namens," *Zeitschrift für Psychotherapie und medizinische Psychologie*, Stuttgart, III, 1911, 110 ff.)

¹⁴ *Parerga und Paralipomena*, I, ed. by R. von Koeber (Berlin, 1891). [Cf. the trans. by David Irvine (London, 1913), to which reference is made for convenience, though not quoted here.]

¹⁵ *Ibid.*, p. 40. [Irvine, p. 41.]

¹⁶ P. 39, [Irvine, pp. 39 f.]

... That both kinds of connection exist simultaneously, and the selfsame event, although a link in two totally different chains, nevertheless falls into place in both, so that the fate of one individual invariably fits the fate of the other, and each is the hero of his own drama while simultaneously figuring in a drama foreign to him—this is something that surpasses our powers of comprehension and can only be conceived as possible by virtue of the most wonderful pre-established harmony.¹⁷

In his view "the subject of the great dream of life . . . is but one,"¹⁸ the transcendental Will, the *prima causa*, from which all causal chains radiate like meridian lines from the poles and, because of the circular parallels, stand to one another in a meaningful relationship of simultaneity.¹⁹ Schopenhauer believed in the absolute determinism of the natural process and furthermore in a first cause. There is nothing to warrant either assumption. The first cause is a philosophical mythologem which is only credible when it appears in the form of the old paradox "Εν τὸ πᾶν, as unity and multiplicity at once. The idea that the simultaneous points in the causal chains, or meridians, represent meaningful coincidences would only hold water if the first cause really were a unity. But if it were a multiplicity, which is just as likely, then Schopenhauer's whole explanation collapses, quite apart from the fact, which we have only recently realized, that natural law possesses a merely statistical validity and thus keeps the door open to indeterminism. Neither philosophical reflection nor experience can provide any evidence for the regular existence of these two kinds of connection, in which the same thing is both subject and object. Schopenhauer

¹⁷ P. 45. [Irvine, pp. 49 f.]

¹⁸ P. 46. [Irvine, p. 50.]

¹⁹ Hence my term "synchronicity."

thought and wrote at a time when causality held sovereign sway as a category *a priori* and had therefore to be dragged in to explain meaningful coincidences. But, as we have seen, it can do this with some degree of probability only if we have recourse to the other, equally arbitrary assumption of the unity of the first cause. It then follows as a *necessity* that every point on a given meridian stands in a relationship of meaningful coincidence to every other point on the same degree of latitude. This conclusion, however, goes far beyond the bounds of what is empirically possible, for it credits meaningful coincidences with occurring so regularly and systematically that their verification would be either unnecessary or the simplest thing in the world. Schopenhauer's examples carry as much or as little conviction as all the others. Nevertheless, it is to his credit that he saw the problem and understood that there are no facile *ad hoc* explanations. Since this problem is concerned with the foundations of our epistemology, he derived it in accordance with the general trend of his philosophy from a transcendental premise, from the Will which creates life and being on all levels, and which modulates each of these levels in such a way that they are not only in harmony with their synchronous parallels but also prepare and arrange future events in the form of Fate or Providence.

In contrast to Schopenhauer's accustomed pessimism, this utterance has an almost friendly and optimistic tone which we can hardly sympathize with today. One of the most problematical and momentous centuries the world has ever known separates us from that still medievalistic age when the philosophizing mind believed it could make as-

sections beyond what could be empirically proved. It was an age of large views, which did not cry halt and think that the limits of nature had been reached just where the scientific road-builders had come to a temporary stop. Thus Schopenhauer, with true philosophical vision, opened up a field for reflection whose peculiar phenomenology he was not equipped to understand, though he outlined it more or less correctly. He recognized that with their *omina* and *praesagia* astrology and the various intuitive methods of interpreting fate have a common denominator which he sought to discover by means of "transcendental speculation." He recognized, equally rightly, that it was a problem of principle of the first order, unlike all those before and after him who operated with futile conceptions of some kind of energy transmission, or conveniently dismissed the whole thing as nonsense in order to avoid a too difficult task.²⁰ Schopenhauer's attempt is the more remarkable in that it was made at a time when the tremendous advance of the natural sciences had convinced everybody that causality alone could be considered the final principle of explanation. Instead of ignoring all those experiences which refuse to bow down to the sovereign rule of causality, he tried, as we have seen, to fit them into his deterministic view of the world. In so doing, he forced concepts like prefiguration, correspondence, and pre-established harmony, which as a universal order coexisting with the causal one have always underlain man's explanations of nature, into the causal scheme, probably because he

²⁰ Here I must make an exception of Kant, whose treatise "Dreams of a Spirit-Seer. Illustrated by Dreams of Metaphysics" (English trans., London, 1900) pointed the way for Schopenhauer.

felt—and rightly—that the scientific view of the world based on natural law, though he did not doubt its validity, nevertheless lacked something which played a considerable role in the classical and medieval view (as it also does in the intuitive feelings of modern man).

The mass of facts collected by Gurney, Myers, and Podmore²¹ inspired three other investigators—Dariex,²² Richet,²³ and Flammarion²⁴—to tackle the problem in terms of a probability calculus. Dariex found a probability of 1 : 4,114,545 for telepathic precognitions of death, which means that the explanation of such a warning as due to "chance" is more than four million times more improbable than explaining it as a "telepathic," or acausal, meaningful coincidence. The astronomer Flammarion reckoned a probability of no less than 1 : 804,622,222 for a particularly well-observed instance of "phantasms of the living."²⁵ He was also the first to link up other suspicious happenings with the general interest in phenomena connected with death. Thus he relates²⁶ that, while writing his book on the atmosphere, he was just at the chapter on wind-force when a sudden gust of wind swept all his

²¹ Edmund Gurney, Frederic W. H. Myers, and Frank Podmore, *Phantasms of the Living* (2 vols., London, 1886).

²² Xavier Dariex, "Le Hazard et la Télépathie," *Annales des sciences psychiques* (Paris), I (1891), 295-304.

²³ Charles Richet, "Relations de diverses expériences sur transmission mentale, la lucidité, et autres phénomènes non explicable par les données scientifiques actuelles," *Proceedings of the Society for Psychical Research* (London), V (1888), 18-168.

²⁴ Camille Flammarion, *The Unknown* (London and New York, 1900), pp. 191 ff.

²⁵ *Ibid.*, p. 202.

²⁶ *Ibid.*, p. 192 f.

papers off the table and blew them out of the window. He also cites, as an example of triple coincidence, the edifying story of Monsieur de Fortgibu and the plum-pudding.²⁷ The fact that he mentions these coincidences at all in connection with the problem of telepathy shows that Flammarion had a distinct intuition, albeit an unconscious one, of a far more comprehensive principle.

The writer Wilhelm von Scholz²⁸ has collected a number of stories showing the strange ways in which lost or stolen objects come back to their owners. Among other things, he tells the story of a mother who took a photograph of her small son in the Black Forest. She left the film to be developed in Strasbourg. But, owing to the outbreak of war, she was unable to fetch it and gave it up for lost. In 1916 she bought a film in Frankfurt in order to take a photograph of her daughter, who had been born in the meantime. When the film was developed it was found to be doubly exposed: the picture underneath was the photograph she had taken of her son in 1914! The old film had not been developed and had somehow got into circulation again among the new films. The author

²⁷ Pp. 194 ff. A certain M. Deschamps, when a boy in Orléans, was once given a piece of plum-pudding by a M. de Fortgibu. Ten years later he discovered another plum-pudding in a Paris restaurant, and asked if he could have a piece. It turned out, however, that the plum-pudding was already ordered—by M. de Fortgibu. Many years afterwards M. Deschamps was invited to partake of a plum-pudding as a special rarity. While he was eating it he remarked that the only thing lacking was M. de Fortgibu. At that moment the door opened and an old, old man in the last stages of disorientation walked in: M. de Fortgibu, who had got hold of the wrong address and burst in on the party by mistake.

²⁸ *Der Zufall: Eine Vorform des Schicksals* (Stuttgart, 1924).

comes to the understandable conclusion that everything points to the "mutual attraction of related objects," or an "elective affinity." He suspects that these happenings are arranged as if they were the dream of a "greater and more comprehensive consciousness, which is unknowable."

The problem of chance has been approached from the psychological angle by Herbert Silberer.²⁹ He shows that apparently meaningful coincidences are partly unconscious arrangements, and partly unconscious, arbitrary interpretations. He takes no account either of parapsychic phenomena or of synchronicity, and theoretically he does not go much beyond the causalism of Schopenhauer. Apart from its valuable psychological criticism of our methods of evaluating chance, Silberer's study contains no reference to the occurrence of meaningful coincidences as here understood.

Decisive evidence for the existence of acausal combinations of events has been furnished, with adequate scientific safeguards, only very recently, mainly through the experiments of J. B. Rhine and his fellow-workers,³⁰ who

²⁹ *Der Zufall und die Koboldstreiche des Unbewussten* (Schriften zur Seelenkunde und Erziehungskunst, No. III; Bern and Leipzig, 1921).

³⁰ J. B. Rhine, *Extra-Sensory Perception* (Boston, 1934) and *New Frontiers of the Mind* (New York, 1937). J. G. Pratt, J. B. Rhine, C. E. Stuart, B. M. Smith, and J. A. Greenwood, *Extra-Sensory Perception after Sixty Years* (New York, 1940). A general survey of the findings in Rhine, *The Reach of the Mind* (London and New York, 1948; in Penguin Books, 1954), and also in the valuable book by G. N. M. Tyrrell, *The Personality of Man* (Penguin Books, London, 1947). A short résumé in Rhine, "An Introduction to the Work of Extra-Sensory Perception," *Transactions of the New York Academy of Sciences*, Series II, XII (1950),