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THE PSYCHOPHYSIOLOGY OF THE DREAM*

SANTE DE SANCTIS

University, Rome

I

EXPERIMENTAL DREAMS: METHODS AND RESULTS

A scientific study of the dream should rely as far as possible on the experimental method, an old method which dates back to A. Maury and Delboeuf. Investigations by psycho-analytic methods, and still better, disinterested observations of the investigator's own person, and those based on the disinterested testimony of dreamers (the method of *enquiry* which I have repeatedly practiced) provide the best data of reference for the valuation of the results obtained from experimental dreams.

At the end of the year 1896 I became greatly interested in the method of provoking dreams by suggestion and applied it by utilizing the results of French authors and the American writer Mary Whiton Calkins. Some years later I made experiments on young children and on myself. In these experiments I adopted nocturnal auto-suggestion, repetition of phrases, written words, stimulation of the skin, etc. On different evenings I employed stimuli calculated to provoke dreams on the three following subjects: *pride, defence against a moral danger, criticism*, etc. As explained in an essay on *Metodi oneirologici*, published in the *Rivista di Psicologia*, March, 1920, the result of these experiments was negative. The themes given to me at night never appeared even in remote and allegorical form in my immediate dreams, or in those of the following thirteen nights.

I need not refer to the observations made by other workers (for example, Stepanoff, and especially Mourly Vold) during experiments with sleeping subjects. On the whole, I can say today that auto-experimental dreams never yielded me brilliant results, because

* Translated by Bernard Miall.

This is as much as I can reliably report in respect of the experimental dreams which I have provoked, at irregular intervals, during the space of six years, and in three subjects: we know that a great proportion of the persons who are questioned as to their dreams declare that they never dream, or hardly ever, and in any case cannot remember what dreams they have had. However, many of these, when subjected to my experimental methods, gradually became true dreamers. I have found that the means best apt to excite dreaming is the creation in the individual of the "will to dream." Speaking of dreams and their importance and recounting dreams to them while they are awake are most efficacious means, since thus their own dream-contents fix themselves and are more easily reported on waking.³ Other means are: to act during sleep with sensorial stimuli of moderate intensity on the muscular system, ligaturing a joint or a segment of a joint (Mourly Vold's method) or making the sleeper retain a special position during sleep.

Recent investigations of artificial experimental dreams of my own and those of other persons confirm a number of facts already noted, for example: (1) that everyone is prone to the post-hypnic reconstruction of his own dream (Foucault, Jankelevitch), but that the logical adjustment of the dream may be avoided by the technique already described, and by asking the dreamer not for explanations and narrations, but for simple statements as to things seen, heard, or thought in the dream, without abridgement, and immediately after waking, without getting out of bed, and perhaps with closed eyes; (2) that apart from constructions of whatever kind, the dream, though it may be regarded as an "autistic" self-centered form of thinking (in Bleuler's sense), contains not only sensations, representations, and sentiments, but even trains of thought properly so-called, conflicts, and decisions of the will, accompanied by sensations of effort (Nietzsche, too, speaks of such an example: "I know I am dreaming, but I want to go on dreaming"); (3) that the dream consciousness never consents to assimilate the immediate acquisitions of the waking consciousness; that the waking will does not govern the dream, while it does to a certain extent govern sleep

³ My own experience does not go to confirm the fact that severe psychic traumas provoke and excite dreams, as is generally asserted. I read in Suetonius that Nero was not given to dreaming, but that after the assassination of his mother he dreamed many times; and the dreams followed the usual symbolism, revealing the fact that recollections of his crimes were troubling his conscience. Suetonius also says of Otho that he was troubled with dreams after the murder of Galba.

sensorial stimuli and reading before falling asleep greatly further the formation of a phantastic superstructure in the background of the dreams. This can be compared with a noisy theater orchestra that overpowers the melody or the whisper that sounds from the depths. More especially is the recollection of the dream overpowered; the dreamer will remember and report the "added" phantasies more frequently and better than the distant melody, always difficult to express.

Recently, however, I have succeeded in improving the method of experimental dreams produced in others. Dreaming in the phases of light sleep must be distinguished from that in the profounder phases of sleep, and it follows from this that the latter will, as a preliminary, be diagnosed "in the course of sleep." It is essential to construct the sleeper's *individual hypnic curve*,¹ and to make comparative observations of him in his pre-hypnic phases, and in the lighter and profounder phases of sleep, in respect of mimic movements, automatisms, respiration, etc. In applying the stimuli during the lighter and deeper phases, the profundity of sleep can be checked by the degree of stimulus (verbal or tactile, in my own practice, but auditive or kinetic in that of others) sufficient to interrupt or terminate sleep. (We know that the sleep of the tactile sense is light.) The moment he wakes the subject is asked to reply to this simple question, "What were you dreaming?" He must not be asked suggestive questions.² The psycho-analytic method, even if carefully applied, gives suitable results in but few cases.

¹ The curve which I constructed is not very unlike that of Michelson, Kohlschütter, and Lambranzi. See "Experimental Investigations Concerning the Depth of Sleep," *The Psychological Review*, May, 1902.

² This method was adopted in 1901-1902 and recorded by Neyrez and myself in a paper in *The Psychological Review*. The technique may be varied considerably, according to the stimuli which it is proposed to apply. I have always proceeded as follows: In order to construct the individual curve, I determined twelve or fifteen values of the "tactile threshold of awakening" on the forehead or some other part of the uncovered body, obtaining each value in various phases of sleep. Such records were made every half hour, beginning from the end of the first hour of sleep, and regarding the duration of sleep as seven or seven and a half hours. Since as a rule I made only one record each night, and since it was advisable not to experiment every successive night and to repeat the experiment at the same hour of the night in case of doubt, from twelve to fifteen readings were necessary, each made on a different night, and from fifteen to twenty-five nights. A certain economy of effort was effected while the curve of sleep was being determined by also making notes of the dream which the subject reported on the occasion of each provoked awakening. If possible the subject should be rather tired, and should sleep in a quiet room; towards the end of the first hour, while he is breathing quite regularly, and is perfectly motionless, stimuli of threshold magnitude or a little more should be applied and increased until complete awakening occurs (that is, ability to realize the presence of the experimenter and to answer his question, as to dreams, etc.).

(as Anathon Aall affirmed in 1914); (4) that the dream is determined from many directions at the same time; that is, it is *hyperfetermined*, in Freud's sense of the word; (5) that the manifest content of the dream does certainly sometimes, though not always, contain elements unknown to the waking consciousness, such as criminal desires and schemes, abnormal sexuality, and infantile experiences; so we may say that the dream, as a sub-conscious process, is influenced by the "waking consciousness"; (6) that some dreams certainly convey in symbols, in a more or less transparent fashion, a profoundly significant and personal meaning which seems extraneous to the waking consciousness; (7) finally, that waking (provoked by stimuli of moderate intensity or spontaneity) from deep sleep reveals a wealth, scarcity or absence of images, and is usually accompanied by a sense of disorientation, or indeed by a sense of well-being without ulterior qualification.

It is evident that the experimental dreams which were dreamed by my three subjects under the conditions described above did not reveal anything very new. Still, if we combine these results with those obtained by different methods, they are worthy of some consideration. I shall lay special stress on the importance of waking the subject from the phase of profound sleep.

II

DIFFERENTIAL PSYCHOLOGY OF THE DREAM

In a plan for the study of individual psychology which I was requested to furnish by a commission presided over by Thorndike, I included dreaming among the characteristics of personality. The most specific elements of the character exist in the consciousness, but for the formative and more deep-seated elements we must look in the temperament and in the secret suggestions which the temperament is continually making. Obviously, then, we may hold that the normal individual's "type" of dream-activity forms part of his character and behavior; more as an effect than as a cause, it is true, but always constituting an important characteristic; so the dream, with its modality, is a component of the *psychic constitution* of the subject.

In the past I have given considerable attention to the individual psychology of the dream, but I need not here dwell on an argument already familiar. I will confine myself to referring to a particular

case observed during the last few years. A young man came to consult me in connection with his state of general debility, which prevented him from attending to his business with his usual energy. When I inquired as to his dreams, he informed me that he was given to dreaming of sea beaches. But he told me that he could not bear to see women in pyjamas on a sea beach; yet he rejoiced if he saw, even in the distance, the outlines of masculine bathers. Q. "What do you mean by rejoice?" A. "It gives me pleasure; but for me it is sometimes an enervating pleasure." In this case of a clearly homosexual dream the verdict of oneiric homosexuality was a safe one; for the homosexual emotion was many times repeated in the dreams, and the patient confessed that he had (in the waking state) a great longing for the seaside, but had not been able to manage a visit to the seaside that summer. As a result of numerous observations I am convinced that the dream *always* reveals the sexual tendencies of the dreamer, without having recourse to exhaustive psycho-analytic investigations.

Does the so-called law of functional *regression* find confirmation in the spontaneous dream, as according to many authors it finds it in hypnosis? In most cases, yes. It is doubtful, however, whether the so-called instinctive dreams repeat actually atavistic experiences directly, or whether they do so indirectly, by passing through the individual period of infancy. The question is theoretical rather than practical. What is certain is that in dreams we have reliable proof of instinctive and historical regression; sentiments and representations of infants, primitive peoples, and extravagant views unknown to the waking state.⁴

I have collected a few data relating to the incestuous dream. This dream, however, which is sufficiently common, especially in the less prosperous classes and in peasants, most certainly repeats infantile experiences. This has been confirmed by the fact that more than ⁴The problem of regression (cf. my article in *Scientia*, Jan., 1931) offers many unfamiliar and contradictory points. For example; while in the dream-consciousness we have glimpses, together with instincts and desires of all kinds, of religious representations (Christ, Mary, Saints, the Devil, etc.), and ideas and opinions, the products of culture, we do not obtain glimpses of more diffuse historical experiences, such as the age of the Homeric deities, or the cruel sacrifices of the religions of antiquity. This would go to prove that the stratifications of individual experiences provide the material of dreams far more frequently than the myths and legends of humanity. It is probable that the dream-consciousness nourishes itself upon the things learned by the dreamer (either by the waking consciousness or by the sub-consciousness) and that racial and historical experiences do not emerge from the sphere of the unconscious unless they are re-lived by the individual.

one subject who has reported incestuous dreams has also reported homosexual dreams. Notwithstanding this, I have noted in some subjects the recurrence of dreams containing magical and ritual details, or rather, beliefs proper to primitive peoples, which on waking could not by any means be referred by the subject to knowledge which he had consciously acquired; for example, the use in dreams of the magic numbers 3 and 7. In this connection I will refer to the dream of a lady doctor (night of 26 April 1916, reported to me at 8:00 A.M.): "Vivid and complete dream. . . . Resurrection. Resurrection has just been discussed (in the dream), but I am convinced of it, having witnessed it. . . . There was a dead man, perhaps a historical personage. I noted the beating of the heart. Theory of three deaths: sensorial death (that is, ordinary death); death of the soul; (the third death I do not remember)." No questions were asked. The dreamer, a Jewess, declared that she had never thought about the resurrection of the dead, and could not remember that she had ever read anything about it.

Some years ago I was greatly interested in what I called latent criminality.⁶ Inquiries and experiments made at the time proved to me that in the majority of the subjects studied the experimental induction of a criminal dream did sometimes succeed in invading the field of dream-phantasy, but was not able to pass the frontier of morality. The dream was interrupted by unexpected awakening when the sleeper was on the point of committing the crime. There is, then, a species of *censorship*, since the sleeper did not become a criminal in his dream. During the last few months I have endeavored to induce criminal dreams in a young man of good character and high moral standards, who did not know that he was a subject of experiment. The experiment lasted a week (two hours each night, before falling asleep). I spoke to him always of newspaper reports of poisoning and stabbing affrays, always relating my conversation to himself. Out of eight nights, the dream related in the morning immediately after waking was on two occasions of a criminal nature, containing representations of knives and poisons.

⁶ My first observations on the dreams of criminals date back to 1891. But the subject, of course, was not a novel one—both Plato and Plutarch speak of the dreams of criminals. I published an essay on this subject in 1896; I found that the true criminal dreams little, but that he dreams more while expiating his crime than when he is acting in a criminal manner; and that the scene of the crime was represented in the dreams of only twenty per cent of the forty criminals whom I examined. For *La criminalità latente*, cf. *Psicol. Sperim.*, II (1930), 478-789. For *La dinamica del Complesso*, p. 496.

In these dreams, however, it was not the subject who administered the poison or used the dagger. In one of the two dreams—that in which the knife was used—he awoke precisely at the moment when, feeling violently angry, it occurred to him to wound his companion. In this case the effective resistance—the *no*—barred the way to the motor representation of the criminal act. Hence, the phantasy did not pass the threshold of determination. In the second case the awakening provoked by the resistance of antagonistic ideas saved the subject from the oneiric crime. This and similar cases persuaded me some time ago that cruelty slumbers in every soul (latent criminality); but that in the majority of individuals the conflict between urge and inhibition persists in the dream.

If my observations are confirmed it may be deduced that the most moral individual is he who awakens most readily and promptly when the idea to act in a criminal way forces the gate of phantastic realization. Or the most moral individual is he who in the stratification of his personality possesses the most vigorously resisting upper stratum, which are able effectively to repress the deep-lying instinctive stratum of atavic experiences, aggression, rape and rapine, for the purpose of defence or for pleasure.

Certainly objections may be brought against this theory. Here is one: it may be that the inhibition which operates in the dream (subconsciousness) would not function in the waking state (in the consciousness), so that the dream of criminal action would prove nothing in respect of the subject's morality. Here is another: the carrying out of a crime in a dream might be the "symbol" of another action which in the waking state would not amount to a crime. A third: in the dream a crime might be committed as a reaction against a "sense of guilt" (cf. the psycho-analysts; Weiss has dealt with this) in the dreamer; or, as one used to say, by contrast. But in such a case, despite all opinions to the contrary, I should be inclined to see in the crime committed in the dream a slight latency or indeed a defective resistance in the dreamer's strata of social adjustment. This shows that in the dream the individual does not repeat the history of the peoples, nor does he philosophize, but simply revives the moral values which are present in his waking consciousness. I learned from one dreamer that in dreams he would contemplate without (oneiric) remorse the killing of an enemy in war, while he is not capable (in his dream) of killing a private individual for individual ends.

These observations and experiments are being continued. Meanwhile one of my assistants, Professor Pisani, has communicated the following case of a patient in our clinic: A year ago she was always dreaming identical (stereotyped) dreams, and had such dreams whenever she went to bed in a state of irritation. She dreamed at such times of stealing golden articles: chains, ear-rings, or even money. In the dream she experienced extraordinary pleasure at having committed a theft, and often after having stolen something she said, "At least I have got some satisfaction out of it, even if I am killed!" On waking, however, she had scruples, and was displeased at having, as she put it, "dreamed a naughty thing," and she then added, "It is not good to be a thief."

Personal observations and occasional unmethodical investigations have confirmed me in my old conviction that criminal dreams with complete realization, and experimental dreams without concomitant sentiments of reprobation or repugnance or remorse, do not occur in adult persons of good conduct who possess a delicate ethical sense. Still, I have often thought that criminal dreams do not always constitute a proof of criminality, while it is a proof of morality never to have such dreams, or to have dreams of remorse after having committed an action prohibited by the law, whether waking or in a dream.

The concept of censorship during a dream is, I think, confirmed. The censorship appertains to the dream-unconscious, as Freud would express it. It is nevertheless probable that there is a twofold censorship; that which is now known as the censorship of the phases of deep sleep and that appertaining to the waking consciousness, which may act more or less efficaciously on the dream when the sleep is in its light phases ("superficial sleep").

III

THE DREAM AND MENTAL PATHOLOGY

One of the best means is to experiment on or observe dreams of constitutional psychasthenics or patients actually suffering from obsessions or phobias. The latter often dream spontaneously of the object of their phobia. Advantage should be taken of this by speaking to them of the object of their phobia, of sins, of taboos, under the most varied aspects. For example, in a patient whose phobia took the form of a horror of castor sugar it was easy to disturb the

patient's sleep on the following night by talking for some time about powder and the grubs that eat furs. Since every obsessive idea is bound by links to antecedent and subsequent ideas, it is enough to excite the "constellation" to revive the nucleus. In another patient who had the usual phobia of infective bacilli I was able to induce vivid dreams by talking to her of worms or other parasites (analogous stimuli). In the above-mentioned patient I observed repeatedly that while it was easy for me to procure "induced dreams" with a basis of fear or personal injury, exciting the constellation, I never once succeeded, during forty days of experiment, in the experimental induction of therapeutic dreams which would have been of value as a means of attenuating her phobia.

These facts prove that the dream may be a good expedient for the differential diagnosis of psychasthenics and schizophrenics, and also that in phobic patients the subconscious apparatus functions in harmony with the cortical apparatus, without offering any particular resistance to the intervention of ideas from outside the system; and lastly, that the basal sympathetic-endocrine system opposes a strong resistance to stimuli proceeding from the cortical centers of the memory.

Hence it follows that the spontaneous or experimental dream may serve not only as a warning symptom of mental maladies, but also as a sign of their progress towards improvement or the reverse. I have seen in some cases that when recovery from a cyclothymic psychosis is at hand, signs of normality are beginning to appear in the dream. As long ago as 1901 W. Vaschide and H. Piéron described the case of a woman afflicted with a form of "circular insanity," who, thanks to her dreams, was able to make exact predictions of her periods of excitement, depression, and calm, or the continuation of her condition. F. Gorriti, of Buenos Ayres (1930), also noted that in a case of delirium the same sexual complex was found in the delirious state and in the dream, which expressed it in a devious form. The disappearance of the patient's mental disturbances is parallel to the disappearance of dreams under the influence of psycho-analysis, which reveals the pathological sexual complex to the light of consciousness. Here is a recent case (summer of 1932): I. F. was cured by suggestion, returned to her usual way of life, and was physically restored. I had told her that I wished her to communicate her occasional dreams, even if insignificant. Four months

after recovery a dream occurred which revealed the persistence of the phobia: her clothes were soiled and sticky with sugar (infection); the child's milk was upset over its clothes (filth). After a week of such dreams a fresh crisis of phobia set in, which then was immediately arrested by suggestion and psychology.

In the psychoneuroses in general the dream is almost always revelatory and symptomatic. Hence it is a valuable indication in the hands of the perspicacious psychiatrist. I have had fairly extensive experience of the nocturnal life of constitutional asthenics and hysterical women. Now in constitutional asthenics the feeling of fatigue and exhaustion appears very plainly and frequently in the fable of the dream. But the most notable fact is that in the phases of recovery the patient becomes more capable even in the dream; for example, in games or athletic contests he meets his adversary with a hope of victory. And similarly the epileptic constitution, in its psychic aspect, appears as frequently in the waking state as in sleep. In cases where epilepsy is suspected the investigation of dreams gives valuable indications.

During the clinical course of 1931-1932 I referred to the case of a young girl of good family, entirely ignorant of sexual matters, who was afflicted with hysterical convulsions, and who, in some twenty very hasty records of her own dreams, gave unconscious evidence of her homosexual and sadistic tendencies. The dream of transformation into a person of the male sex occurred several times. Pleasure experienced at the sight of blood was also very explicit. Only the more specifically sexual dreams made use of symbolism, which was, however, fairly transparent. For example: hares got into her bed and tickled her with their fur; a bayonet was hidden in a mattress; and something was pushed into the palms of her hands. In this hysterical patient there was a notable similarity between the manifest content of the dream and the phantasies which presented themselves after waking in the morning. The phantasies were symbolical of the whole case; for example, a book which spoke of disgusting or indecent matters gave her palpitations and general malaise, and forced her to close her mouth spasmodically and stiffen her legs.

As regards the dreams of schizophrenics, these patients are autistic (self-centered) both in the waking state and in the dream. It is a simple matter to detect in the dream neologisms (tendency to coin

or use new words) which give evidence of the agglutinations, condensations, and symbols of which the patient makes use in the waking state. Yet the neologisms of the waking state in paranoid patients are not always identical with those which present themselves in the dream. Sometimes it is impossible to say whether the neologisms of the waking state derive from those of the dream or vice versa.

These and many other similar facts go to prove that the waking consciousness and the dream-consciousness are closely related. It follows, then, that in mental disorders the *two states of consciousness* tend to become identical in their content and their motive forces. Further, it follows that the waking consciousness of the patient may be ignorant of the motive force and the distorted content of the dream-consciousness, while to the psychiatrist these will be plainly apparent. In these cases it is observed that certain dreams exhibit a transfiguration of their meaning. These facts, which are not, however, commonly observed, explain certain dream symbols which have been well described by the psychoanalysts—for example, by Jones and Weiss—and the practical but very expressive hypothesis of the Freudian *censorship*, which passes contraband provided it is disguised.

Symbolical dreams are found not only in psychoneurosis, but also in persecution mania. The allegorical dreams of certain sufferers from persecution psychosis are thus capable of reinforcing their dominant constellation.

IV

DREAM-SYMBOLICS

We have referred to symbolical dreams. The dream is symbolical by definition; it was always regarded as such. Homer in the *Odyssey* says that the wise man does not always succeed in discovering the hidden meaning of dreams. Artemidoros of Daldis and all the oneirophants of antiquity based their practice on the discovery of the deeper significance of dreams. Reversibility, the substitution, by virtue of occult affinities, of representations for thoughts, and thoughts for representations, has always been a familiar procedure to philosophers and artists.

There is, then, a dream-symbolics, which I may call a "pre-Freudian" symbolics. K. A. Scherner, von Schubert, Freud, and all the psycho-analysts have followed a tradition. This explains why

the usual critics do not, for doctrinal reasons, bring a *fin de non recevoir* against symbolics. It is certain, then, that the fable of the dream has sometimes a meaning which is hidden beneath the symbolism of the imagery. There are a sensorial symbolism (as there is, for that matter, in the waking state and in art) and a symbolism of analogy (G. Ferrero, G. Marchesini, and others), etc. Symbolics may consider a word or gesture (dreamed), the name of an object or person, a phrase, or the entire dream-content. It may deal with the visualization of the stimuli during sleep and other images (Havelock Ellis, Mourly Vold), with the substitution of concrete for abstract ideas, or the duplication of meanings.

On another occasion (1916) I spoke of *double-faced dreams*; that is, dreams with a twofold or double signification (superimposed or parallel). Sometimes it is the dreamer himself who recognizes the thing symbolized in the dream. And to my thinking this is the best confirmation the symbolism can receive. We should regard with suspicion those symbols—and especially the monoverbal symbols—which are obtained by means of fatiguing interrogation, except where neologisms are concerned; these have always a hidden meaning, as they generally represent a "condensation."

The symbolism is undeniable when the dream is a *transparent* allegory; that is, something like an Æsop's fable with the humor omitted. Example: Bismarck's dream (referred to by Kretschmer in *Medizinische Psychologie*), which is symbolical by transparency. Another dream of this kind is recounted by a well-known Italian writer, Ercole Morselli, in the *Lettera a Bianca* (1906; *Nuova Antologia*, 1 April 1932). Morselli was expecting a letter from his fiancée, Bianca. At night, in bed, he wept because he had not received it, until, although he was wide awake, he began to think the most lamentable and unlikely things; and suddenly he fell asleep. This was his dream: it seemed to him that he was riding on horseback at Bianca's side. His face was hidden. They rode with loose reins along an interminable road. Bianca asked him, "Shall we find him alive? I have a letter for him which, if he isn't yet dead, will make him live a hundred years." And he, behind his mask, disguising his voice, replied, "Use the spur, use the spur!" And they spurred their horses until the blood ran. At this moment he awoke and found the expected letter leaning against his lips. His

mother, having received the expected letter from the postman, had laid it on his pillow without waking him.⁶

I will here refer to a dream of my own (night of 6 December 1929): A vivid and insistent dream . . . my little ivory head (a paper-weight on my study table) falls and is broken; the pieces lie on the floor, the face, detached from the cranium, bears the marks of a hammer. In desperation I gather up the pieces and see that the cranium is recovering its proper shape. . . . I wake suddenly with a "feeling of joy." Immediate recognition of the symbolic value of the dream (some days before I had been impressed by a diagnosis; the dream symbolized the diagnosis by the fall and fracture of the skull; the hammer-marks represented the terrible doubts of the physician; the recomposition of the cranium symbolized the diagnostic error which I so keenly desired should have been made).

Such dreams are common. They occur when the individual has a program firmly fixed in his mind, or a guiding idea, or a dominant passion or sentiment. This is the reason why "bifrontal" or double-faced dreams, and symbolical dreams in general, are so frequent in neuropaths and psychopaths. I have many notes of such dreams before me. I will mention only a few. An hystero-psychopathic lady was living with a husband who loved her, but she conceived a passion for another man. She told me of a painful and persistent dream (stereotyped): a man robbed her of her two daughters. . . . in the dream she suffered greatly. The dream revealed plainly, although in symbolic fashion, the lady's subconscious conflict between conjugal duty and illicit passion. She complained of the extravagance of the dream, and even more of its persistence. I had hardly explained it to her when she added: "I understand that in the dream it is the man I love who robs me of my two daughters, but that is absurd!" In this case the dream is like a fable with a moral.

Sometimes the symbol is negative. A dreamer told me that he never dreamed of the things that preoccupied him in the waking state. But when, according to his own account, he became desperately jealous of a woman with whom he was passionately in love, he complained immediately that in his dreams his inamorata never appeared to him nor any presumed rival, though under the circumstances the appearance of the latter might have constituted a warn-

⁶ This dream recalls Maury's famous guillotine dream, which has been advanced as a paradigm of the duration of the dream. In my experience dreams of this kind are observed in constitutionally emotive sleepers when unexpectedly awakened by the action of an extrinsic agent.

ing. I thought that in this case the fact of *not dreaming* of the object meant that this object governed the fable of the dream, but only in a "cold" fashion; jealousy, therefore, while it occupied the waking consciousness, did not disturb the dream-consciousness. This was a fact which required explanation. On further investigation I was able to ascertain that it was not true that the dreamer entertained a jealous passion for the woman; he was suffering in the waking state merely because he was afraid that she might, being a wealthy woman, be won by a rival. As a matter of fact, when this presumption ceased to worry him he told me that he now sometimes dreamed of his old "love" (?), but without unpleasant emotion. It should be remembered that the acute emotions of the waking state are not at once revived in the dream, but a genuine passion does after a certain lapse of time make its appearance in the dream-consciousness.

V

THE DREAM IN GENERAL PSYCHOLOGY

It seemed to me that the essential point of the psychology of the dream must be its position in the series of "psychic processes." Let us distinguish, therefore, the *dream-consciousness* (subconsciously systematized during the dream) as opposed to the *waking consciousness*.⁷ Such a distinction I can still confirm and illustrate today, by reference to the separation of the organs of these two consciousnesses (cortex and trunk of the brain), the stratification of experiences in the psychic personality of the individual, and the respective values given to the different phases of sleep (superficial and profound sleep).

The relations between the waking consciousness and the dream consciousness have already been explained.⁸ Such mutual relations are *continuous* in sleep and in the waking state, but are also mobile. The sinusoid of the dream conscience has peaks corresponding to the depressions of the sinusoid of the waking consciousness and vice versa.

The "dream process" appertains to the dream consciousness, which is itself the consciousness of the individual, but with a peculiar

⁷ See G. Sergi, "Il Sogno: struttura e dinamica," *Rivista di Antropologia*, Jubilee vol. (1916), in *Kafka's Handbuch* (1923), and in *Scientia*, Jan., 1928.

⁸ By dream consciousness I meant (1916) the "specific" mode of psychic activity during sleep. The dream consciousness merits this description, since in almost all persons it is "systematized" during sleep. The two consciousnesses are united by a bridge, which is the memory.

sense of reality, due to the *sleep-obstacle*. Sleep, in fact, even more than distraction, prevents the external reality from supplying aliment to the subject. Thus in sleep a more or less complete and durable subconscious system is formed. Such a system, more justly than the *subliminal ego* or *second personality*, might be called the *co-conscious system* (Morton Prince), inasmuch as the phenomena of the dream consciousness can "co-exist" and "alternate" with those of the primary consciousness, as has already been indicated. A dream of my own (on the night of 4 December 1931, transcribed at 4:00 A.M., and very clearly remembered) with its latent content, proved to be governed by the fear that I should be prevented from giving my lecture, as I was hoarse from laryngitis. The course of the dream demonstrated very clearly the opposition between the two consciousnesses, rapidly alternating and co-existing; the waking and the dream consciousness. While my waking consciousness, during the day preceding the dream, on waking in the night, and on waking in the morning, wished me to perform my professional duties, the dream defended my biological interests. This points to the different aims of the two consciousnesses. The dream consciousness is a function of the Freudian *Id*. In certain dreams, moreover, the dream consciousness has an anticipative power in respect to the sexual tendencies (symbolization of desires and erotism). We have seen how in other dreams the two consciousnesses have the same content; for example, in certain maladies.

The most important fact is that even in the waking state there is an alternation of the two consciousnesses (the Freudian *Id* and *Ego*). The primary consciousness is invaded, and sometimes even violently invaded (in the waking state) by the dream consciousness (which we will call the oneiroid conscious, or rather co-conscious, subconscious, unconscious); this happens in ecstasy, in moments of inspiration and caprice, and also in certain mental disorders and some intoxications.

The concept of the two consciousnesses reminds us of what may be called the stratigraphic composition of the psychic person. In fact, in superficial dreams distorted, condensed, and symbolized experiences abound, of remote or recent (but not immediately recent) acquisition, mingled with the more or less manifest cues of activity, self-defence, predominance, and sex. In dreams of various degrees of profundity infantile experiences emerge and the instinctive activ-

ity increases. Now the deeper strata of the dream consciousness coincide with the deeper strata of the individual psychic personality; they may emerge in profound sleep. The strata of the waking personality emerge not only in hypnosis (suggestive sleep), but also in certain "solemn" states of the waking consciousness, and in those which we call abnormal, which certainly have analogous characteristics. In previous publications I have mentioned that A. Pilcz, in 1899, concluded that the more remote happenings are reproduced in the deeper levels of sleep, and particularly in nocturnal sleep; that, according to Piéron and Vaschide, the more remote experiences recur in deep sleep; that Hacker (1911), when studying the dreams of profound sleep, found that in them the remoter experiences are revived. Then came my own personal experiments of 1912-1913 (eight reports, waking provoked at the end of the first hour of sleep), from which I concluded that the dreams of profound sleep are very imperfectly remembered, but that the sleeper has "the feeling of having dreamed" a number of things, very remote and deeply buried; I spoke of a "sense of return" from a distance (record of a dream of my late assistant, Dr. Cohen). Later experiments and observations confirmed all the above conclusions. It should be emphasized that from the psychological aspect the dream of the "deep hypnic phases" is the most regressive; it might be called the "dream of collective psychology." I have found that it approximates more closely to the processes of invention, inspiration, and ecstasy which are often observed in waking life; and that it departs in a characteristic manner from the psychic processes of attention and mental effort, which precisely for that reason are accompanied by mimic movements and variations of the respiratory rhythm, and give rise in the subject to conflicts which are often incurable. It is true (as I myself have often noted) that even in the dream there may be doubts, conflicts, effort, and fatigue; but dreams of this species are observed in the phases of light sleep. They are due to the gradation of the depth of sleep, and hence are related to the *imperfect* dream; that is, the dream mingled with elements of the waking consciousness, which intervene at intervals, following the oscillations of the curve of profundity or of the hypnic threshold.

If from one point of view we may speak of two consciousnesses, whether in the healthy individual or in the pathological subject, in actual fact the consciousness or personality remains *one* and *iden-*

tical, however numerous the continual transitions between the two consciousnesses, whether in the waking state or in the development of the process of dreaming. The remembered dreams show that the path of communication between the diencephalic-sympathetic system (lower parts of the nervous system) and the cerebral cortex has not been interrupted. The active or dynamic unconscious (the dream consciousness) does not form the entire texture of the dream; we have here a "prevalent" activity; at its minimum in the "predormitive" state, moderate in superficial dreams, and at its maximum in the dreams of profound sleep.

In conclusion, to diagnose the personality of the sleeper through his dream activity, we must take into account what may be learned from the sleeper himself on waking, or on being experimentally awakened, from his deepest sleep; that is, the sleep of the first few hours.

The dream consciousness has its own ontogenesis. It begins in the elementary psychism which is associated with the first development of the nervous system. Adhering less firmly today than in the past to Pflüger's old conception of the "spinal animal" and the genetic law of emigration recently confirmed by Monakow, and even H. Jackson's law of liberation, confirmed by Head, we must realize that we have to deal with the elementary psychism proper to the whole nervous system (in animals which have a nervous system). We must not exclude the notion that some sort of functional activity may exist in the foetal nervous system and in the new-born infant. Meanwhile, if the myelogenic law of Flechsig is still (at least in its general outlines) immune to all criticism, if it is certain that even before birth there are myelinated nervous formations in the encephalon, we may admit that the myelinated segments are already functioning in some obscure fashion, but in a manner not extraneous to the foetal sensibility; and if they function they must do so in accordance with their biological purposes, so that such function can only be the initiation of that which will exist after birth. This being so, we may rationally presume that the undifferentiated and unremembered subconscious—undifferentiated and unremembered by reason of the immaturity of the cortex in the foetus and the new-born infant—is similar to that of the profound sleep of adults.⁹

⁹What I have said of the infant goes to confirm Ribot's statement that the infant forms abstractions before it can speak.

I should like here to refer to what I wrote in 1911 (*Manifestazioni est. del pensiero*) in *Rassegna Contemporanea*, IV, No. 8: "It is probable that an undif-

In the adult the dream appears in all its Dionysiac splendor (dream of light hypnic phases), while in the waking life of the adult Apollonian thought is dominant, with momentary Dionysiac reappearances due to the dream consciousness. The two consciousnesses exist in their full development as the personality of the individual reaches its maximum.

At two points the nascent consciousness (of earliest infancy) and the dying consciousness (of old age and the moribund), which represent conditions of profound sleep and of thought without imaginings, coincide; namely, in certain states of profound mental changes and in certain moments of "divination" and ecstasy (immobility without vision); in ineffable moments (moments of extreme psychic impoverishment which can be reconstructed and reclothed in images only on waking).

But we may still ask: What is the knowledge of having dreamed and the sense of remoteness, considered from the psychological point of view? In short, what is the state of the sleeper in profound phases of sleep? To reply to this I must remind the reader that Hacker and Köhler and I myself found in the dream "situations" (*Bewusstheiten*); but we are trying to express the ineffable. According to our mode of regarding the problem, the "situation" indicates *undifferentiated energy*,¹⁰ that is, the basal "situation" on which affective and representative differentiations build themselves up.

Thus we have reached the boundary. No greater precision is permitted to the psychologist. This statement must suffice: the dream activity tends to cease in the profounder phases of sleep, while, nevertheless, permitting of the intervention and intuitive perception of the persistence of "personal consciousness," but in a highly reduced or undifferentiated form. From what has been said above it will be seen that the dream as "psychic process" must be related to

differentiated psychic activity, an unformulated thought, as Erdman would call a thing so simple and opaque . . . accompanied by an indistinct sense of life, constitutes the psychic state of the infant.

Gradually, however, in the very young child, the brain completes itself in the hemispheric segments, the organs of sense, and the sensorial centers, and thus "differentiated" affective and representative movement is initiated.

The dreams of light sleep in very young children are well known. In the old observations of children of three made in the psychological laboratory of Rome, it was found that the predominating dream was the affective dream of fear (Doglia and Banchieri) excited by summary or very rare and obscure representations.

¹⁰ See *Psicol. Sperim.*, I, 73 *et seq.*

all the other processes which we observe in the psychic activity of the waking consciousness.

In profound sleep, correlatively with silent functioning of the motor (so to speak) the sensory and imaginative cortex, the cenesthetic ego, as the psychiatrist calls it, is dominant; a *pure feeling*, a species of diffuse protopathic sensibility, differing from the cerebro-spinal sensibility; that is, without particular contents, without objective reference. But the psychic activity is undifferentiated only in flashes. In reality it is (in the adult) the echoes of past representations that sustain the *pure feeling* and form the pale web of a personal conscious of such elementary contents.

This mode of regarding the problem throws a bridge between those things which are dreamed but are ineffable (as in the mystical experience), and those things which are dreamed and can, however fantastic, be described and clearly remembered on waking. If we read the statements which intelligent mystics have made in all good faith we shall see that their most important moments, as regards the greatest "plenitude of love" (St. Teresa), may be compared with the sensations experienced by the sleeper awakened from profound sleep. The mystic's "speech of silence," the "basal sleep" of suggestion (V. Benussi), and the first moments of awaking from profound sleep are situations which, if not identical, are at least *analogous*.¹¹

¹¹ *Ibid.*, p. 82 *et seq.*