reading, and do not appear as a mere variation of speech-dreams. The latter appear only subordinately. In Kraepelin's cases, on the other hand, linguistic motor ideas play the chief rôle, reading or writing being a secondary phenomenon. While for the author *Schriftbilder* acquire 'hallucinatory independence,' for Kraepelin they never do. Doubtless we have to do here with an individual difference of reaction-type.

Both Kraepelin and the author find speech dreams common, though in general sight-ideas or images are more usual than sound-images, due possibly to the fact that the acoustic centers may be more depressed in sleep than the visual. (As opposed to this view cf. Meyer: 'Zum Traumproblem,' in the *Zsch. f. Psychologie*, noticed below.) Auditory perceptions (*wirkliche Gehörswahrnehmungen*) are rare in dreams, usually distinctly unpleasant, and causative of waking. They seem to have an abnormal, hallucinatory character beyond other dreams, and are very probably engendered by excessive fatigue.

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Zum Traumproblem. SEMI MEYER. *Zsch. f. Psychol.*, LIII., 206-224.

The author is fundamentally opposed to the current explanation of dreams as hallucinatory in character. Such an hypothesis would demand that certain definite brain areas be abnormally excitable in the dream-state, and this does not appear at all likely to be the case. By a study, in part of his own dreams, he is led to a more plausible explanation: *the relativity of psychic intensities*, as he terms it.

The nature of an hallucination is seen when we consider perception, which is the basis of all hallucinations. A perception is defined as a 'definite arrangement in space and time, of a number of simple sensations.' Perceptions fill the moments of our ordinary day: our thoughts are spatially and temporally oriented. The data of dreams, on the contrary, are ideas (*Vorstellungen*), concrete pictures. What we perceive by day are relationships, independent of memory pictures; the latter may occur, but as by-products only; they are non-essential to the thinking process. By day we think (*denken*), by night we picture (*vorstellen*), one concrete idea following another by laws of free association. Such ideas by day never lead to hallucination, for the very essence of hallucination consists in mis-perception, a breaking away from associations, and enforcing upon the subject a distorted, but spatially and temporally definite combination of sensations. In dreams these oriented perceptions are utterly lacking.

Further the characteristic of great vividness appears to be common to dreams and hallucinations alike and to distinguish both from the waking state. But vividness corresponds solely to intensity of excitation, and intensity is a strictly relative affair. Now it is in a consideration of this relativity of psychic intensities that the solution of dreams, as distinct from hallucinations, appears. Why do dreams appear so vivid?

Vividness or intensity, being a matter of degree, depends solely upon comparison of the given with the standard, a process which is going on, more or less consciously, every hour of our waking day. Two objects given simultaneously are inevitably compared and assessed as being of such or such magnitude. But in dreams, due to the fact of free association, two ideas are juxtaposed that have never come together in real life, hence have never been compared — and distortion follows. Further, dream pictures are indefinite and hazy, and are of *really less intensity* than memory pictures of the day. Unrectified by time and space determinations, we take them for real uncritically: we simply neither doubt nor assert their reality, until perhaps we begin to awake. In hallucination, perceptions are always definite. The 'voice,' *e. g.*, is fully oriented in time and space relationship; it is clear and usually persistent. The intensity, then, is a purely relative matter, and depends not upon its psychic associates among the ideas for estimation, but may be varied almost indefinitely by the greater or less strength of the actual sensations, whose intensities themselves are in turn equally indeterminate in dream-life, and for the same reason.

In sleep no affective-tone is present. If a sensation begets a feeling tone — as for instance a slight movement in bed might be associated with an idea of falling, causing the emotion of fear — we awake. The reason for this is clear if we regard every feeling as the coming to consciousness of an impulse which demands some sort of attention and motor reaction. By day our actions are controlled by such impulses working through feeling-tones: while in deep sleep, sleep proper, they never occur; there our impulses are quiescent — or else we awake. Dream-sleep, which is mid-way between complete consciousness and non-consciousness, is characterized by lack of attention, lack of goal for our ideas, cessation of impulses and feelings. To this state the day-dreams are analogous.

All this is in opposition to the much-discussed contention of Freud that dreams *are* guided by unconscious impulses and that the threads which link dream associations are just to be found in our affective life. Freud professes to be able, albeit by giving an extraordinarily new

interpretation to his data, to bring to light forgotten, affectively-toned, repressed experiences or wishes of his pathological patients from analysis of their dreams. The author does not discuss at length this view-point, which he characterizes as 'captivating the psychologist through the manifoldness of association possibilities that the author has discovered,' but he adduces in addition to his general thesis certain considerations which he seems to think, *a priori*, make Freud's interpretations unlikely.

Every dream is conscious; it is a disturbance of sleep, a tendency to awakening, only it is consciousness acting apart from temporally and spatially determined percepts, following rather, much as our day-dreams do, a free association of concrete pictures.

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VISUAL SPACE PERCEPTION.

Eine Methode zur experimentellen und konstruktiven Bestimmung der Form des Firmamentes. R. F. POZDĚNA. Zeitschr. für Psychologie, LI., 200.

The experiments were made with an artificial moon at a fixed distance from the observer's eye and at the same elevation as the moon. The angle in azimuth is described as 'möglichst geringes auf die Seite' but no measures are given. The artificial moon was provided with a stop plate diaphragm and brought to the intensity and color of the moon by screens of white and colored paper. No mention is made of a check by a null method. The observer's head was fixed but the direction of regard apparently left to instructions.

The observations gave 2.6 : 1 as the mean ratio of moon's diameter judged on the horizon and at culmination, with a wide range of dependence on subjective conditions, reaching 3.83 : 1 under the influence of a nervous headache.

Among the details of the experiment the suggestion of an iris diaphragm and the use of a clock rather than a sextant to determine the altitude might be of value in lessening the work of the operator.

For the psychological problem, since the limiting case of superposition and of juxtaposition of about 700 moons on a great circle could only lead to the geometric concept and not to a psychologic concept, the experiment should be extended to include (1) alternate covering of the two objects, (2) variations in altitude and azimuth with measurement, (3) as a control, experiments with two artificial moons.

The mathematical treatment of the problem of apparent form is