

THE NATURE OF INTUITION*

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I. INTRODUCTION

It appears that under favorable conditions most, if not all, human beings, particularly specialists in various fields of science and commerce, can make judgments about the everyday matters of their concern by the use of functions whose processes are not ordinarily verbalized. In practice, judgments of reality are probably made through the integration of a series of types of cognitive processes (cf. Bergson¹). It is possible, for purposes of investigation, to separate this possibly continuous series into artificial segments. In different situations, different segments of the series would make the major contribution to the verbalized perception.

First, judgments can be made by means of logic and actively directed, verbalized perception: e. g., the clinical diagnosis of schizophrenia as made by a group of medical students. This is a conscious process.

Second, they can be made by means of un verbalized processes and observations based on previously formulated knowledge which has become integrated with the personality through long usage, and therefore functions below the level of consciousness; very much as the act of tying a shoelace must be learned by consciously thought-out steps, but later is performed "automatically" because the kinesthetic image has become integrated with the personality to such an extent that conscious awareness of how it is done is no longer required. This may be called a "secondarily subconscious" process. (Cf. "repression proper" or "after-expulsion"—Freud.) The diagnosis of schizophrenia as made by a specialist may be based on such processes and sensory clues, which, having been verbalized at one time, are perceived and integrated at a later period below the threshold of consciousness (subconsciously**). He may make the diagnosis on sight and perhaps only later verbalize his mental processes for his students. The group

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**This is a legitimate use of a word many people prefer to avoid. Here it is comfortable since it includes both pre-conscious and unconscious.

of students makes the diagnosis by a conscious synthetic process, while the specialist may make it by an intuitive process which he is afterward able to analyze.

Third, judgments can be made with the help of clues whose formulation has not yet become and may never become conscious, but which nevertheless are based on sense impressions, including smell. (Cf. "primal repression"—Freud.) This may be called a "primarily subconscious" process. The professional weight-guesser makes continual use of this intuitive process. His uncannily accurate guesses are based on sensory data which he cannot adequately analyze or verbalize, just as the painter may uncannily convey the age and vicissitudes of his subject through his non-verbal medium. The present study is chiefly concerned with this type of intuition, and the writer's observations show that such intuitions are synthesized from discrete sensory elements ("subliminal perceptions") whose perception and synthesis both take place below the threshold of consciousness. Analogous perceptions are spoken of by Freud as forming part of the "day's residue" in dreams.

Fourth, they may be made in ways which are quite unexplainable by what we know at present concerning sense-perceptions.

The first method is evidently a function of the conscious perceptive system. The second and third methods are probably functions of preconscious systems, since they can be brought into conscious analysis relatively easily, and because of their analogy to the use of preconscious material in dreams. The indications are that the fourth method is a function of unconscious systems (cf. Eisenbud²).

It is probable that judgments, about other people at any rate, are in most cases, if not all, a function of the whole epistemological series and rarely, if ever, the outcome of only one of these artificial segments of it. Since this discussion is mainly concerned with the third method, however, that which has been termed "primarily subconscious," it should be noted that various authors have expressed valuable opinions which can assist in differentiating the use of such processes in making judgments about people.

There is a class of "hunches" in everyday life and of judgments in clinical practice which appear to lack a specific basis in conscious or preconscious experience, and which probably belong here. Such are the experiences of "listening with the third ear"

described by T. Reik.³ Since we can throw little light on their mechanisms, they will be called simply "hunches." E. J. Kempf⁴, somewhat like Darwin, speaks of understanding emotional states in others by "reflex imitation through similar brief muscle tensions," and states that by this token "in a certain sense we think with our muscles." This method of judgment may be called "intuition through subjective experience" (proprioception). A similar method can be useful clinically in interpreting handwriting, Bender Gestalt tests, and some material in Rorschach tests. This is a little different from the type of intuitive judgment which is based upon extensive clinical experience, such as has been cited in the case of weight-guessers and which will be enlarged upon here in later clinical material. In Jung's terminology,⁵ intuitions of the latter type are "objective" and "concrete." Such intuitions may be termed "intuition through objective experience."

Many authors have described other types of "intuition" under that name⁶ or something similar, such as "inspiration," "insight,"⁸ etc. On the other hand, many of the magnificent edifices of the philosophers, such as Kant, Descartes, and Locke, use the concept of intuition as one of their building blocks. If we aspire here only to consider what is commonly called "clinical intuition," we avoid the dangers run by those who try to scale the walls of philosophy. The philosophical aspects have been discussed by K. W. Wild.⁹

For the present purpose it is only necessary to define intuition sufficiently to separate it from its nearest neighbors. A pragmatic definition, based on clinical experience, may be stated as follows:

Intuition is knowledge based on experience and acquired through sensory contact with the subject, without the "intuiter" being able to formulate to himself or others exactly how he came to his conclusions. Or in psychological terminology, it is knowledge based on experience and acquired by means of pre-verbal unconscious or preconscious functions through sensory contact with the subject. This approximates the definition of Jung,⁵ who says that intuition "is that psychological function which transmits perceptions in an unconscious way." It is even something like the dictionary definition: "the quick perception of truth without conscious attention or reasoning." (Funk & Wagnalls.)

This concept of clinical intuition implies that the individual can know something without knowing how he knows it. ("That distant

cow is sick.”) If he can correctly formulate the grounds for his conclusions, we say that they are based on logical thought (“This cow is sick because. . . .”) and actively directed observation (“This is obviously the sick one.”). If his conclusion seems to be based on something other than direct or indirect sensory contact with the subject (“Somewhere a cow is sick”), then we cannot help but be reminded of what J. B. Rhine calls “extra-sensory perception.”¹⁰

After careful consideration, it will be found that an interesting corollary must be added to this definition. Not only is the individual unaware of how he knows something; he may not even know what it is that he knows, but behaves or reacts in a specific way as if (*als ob*) his actions or reactions were based on something that he knew.

The problem of intuition is related to a general question which may be stated thus:

From what data do human beings form their judgments of reality?

(By *judgment* is meant an image of reality which affects behavior and feelings toward reality. An *image* is formed by integrating sensory and other impressions with each other and with inner tensions based on present needs and past experiences. By *reality* is meant the potentialities for interaction of all the energy systems in the universe; this implies the past.)

Regarding the special matter of concern here, the “primarily subconscious” material which forms the basis for judgments about external reality, Reik³ has made some formulations with which the present conclusions, based on clinical experimental material, are in agreement. This is all the more impressive since the latter were arrived at independently after the pertinent observations had been made, during: (1) Attempts to intuit single specific factors in a series of several thousand cases. (2) Attempts to intuit many different factors about single individuals.

Curiously enough, among philosophers, the man whose ideas come closest to these conclusions is one of the most ancient. It was Aristotle who described what has been called “intuitive induction” as being based on the ability of the organism, first to experience sense-perceptions; at a higher level of organization, to retain sense-perceptions; and at a still higher level, to systematize such memories. “We conclude that these states of knowledge are

neither innate in a determinate form, nor developed from other higher states of knowledge, but from sense-perception. It is like a rout in battle stopped by first one man making a stand and then another, until the original formation has been restored. . . ."¹¹ It is also apparent how closely Aristotle's remarks are related to the discussion of the similarities between neurophysiological phenomena and the functioning of calculating machines which is part of the subject of cybernetics according to N. Wiener.¹²

The clinical material has a special bearing on one aspect of this question: Namely, from what data other than rational conclusions and consciously perceived sense impressions do human beings form judgments about external reality? ("Consciously perceived sense impressions" are those which can be readily verbalized, in contrast to "subconscious perceptions"¹³ and the "subliminal cues" of modern psychology.)

II. CLINICAL MATERIAL

a. *Observations of Single Specific Factors in Large Numbers of Individuals*

These observations were made at an Army Separation Center in the latter part of 1945. One part of the processing consisted of a medical examination carried out in assembly-line fashion. Each soldier went down a line of booths, and in each booth certain organ systems were examined and the results noted in the appropriate places on a printed form. The writer was in a booth at the end of the line. The time available for the "psychiatric examination" varied on different days from 40 to 90 seconds. About 25,000 soldiers came down the line in less than four months. Several studies were made during this period, and about 10,000 cases were available for the study of the intuitive process.

The study was not formulated premeditatively. The writer became interested gradually in the nature of the process which with practice enabled him to detect and distinguish accurately some categories of human beings after 10 or 20 seconds of inspection.

The men all wore the same garments, a maroon bathrobe and a pair of cloth slippers. The examiner sat behind a desk, facing the door of the booth. After a soldier was "examined," the appropriate blank was filled in on the form, and the next candidate was summoned by calling "Next!" As one soldier left, the next one

shuffled in, and without any instruction, walked toward a chair beside the desk to the right of the examiner and sat down. Some soldiers kept their papers in their hands and some handed them to the examiner. These forms were looked at after the interview was ended. It was not necessary to know the names of the soldiers.

The "examination" consisted of two stock questions which were asked after a few moments of inspection: "Are you nervous?" and "Have you ever been to a psychiatrist?" At first, that was all, unless there were special indications. During this preliminary period, an attempt was made to predict from silent observation of the soldier how each man would answer the two stock questions in that particular situation. It was found that this could be done with surprising accuracy. The question then arose as to how these predictions were made, since this was not immediately apparent. After careful study the question: "How are such intuitive judgments made, and upon what are they based?" was partly answered for the factors concerned.

It seemed evident, however, that the formulation was not completely successful, for the percentage of such correct predictions remained higher when the intuitive process was allowed to function without conscious interference, than when judgments were attempted on the basis of deliberate use of the criteria which had been verbalized. The conclusion drawn was that the criteria used in the intuitive process had not all been formulated. A discussion of the nature of these particular criteria and their psychodynamic and psychiatric implications will not be undertaken here.

When it was thus found almost by accident that the intuitive process could be studied in that particular situation, a more formal experiment was undertaken. An attempt was made to guess by observing the soldier for a few seconds what each man's occupation had been in civilian life, and then to formulate the data upon which the guesses were based. During this experiment, the intuitions regarding the answers to the routine questions about nervousness were forthcoming as well, with practically no additional effort, and continued to be useful in picking out false negative replies. This means that two fields of intuition were active at the same time. Fortunately, then, the experiment did not interfere with the duty of making the best possible psychiatric evaluation of each man in the time available; and, I was informed later, it added interest and spirit to the routinized experience of each

man's examination. Since the center was not set up for experimental psychology, no control of the results was possible other than by the individual soldiers who went through the experience, except occasionally during a lax period, when some medical officer from a neighboring booth would drop in.

During the examination, the soldiers were under emotional tension related to a uniform goal-striving, namely, their desire to get out of the army as soon as possible, for they believed that the doctors could frustrate this desire. This tension was particularly high when they entered the psychiatrist's booth, because of the particularly imponderable (in their minds) nature of his function. The interview was an emotionally charged "examination" crisis, and not an artificial laboratory situation. This was emphasized in that environment by the fact that the soldiers were unclothed and were enlisted men, while the examiner was fully clothed and an officer. Upon becoming a participant in this situation, each was met by a neutral but unswerving gaze, and by silence and obvious "observation," in a fashion which only a few, if any of them, could have experienced before. Thus for most of them it was an imponderable, anxiety-laden, and new situation.

Since written protocols were not regularly kept, numerical data is available for only a small sampling of the study. On 17 different days, the guesses or lack of them were recorded for "unselected" segments of the line-up, comprising in all, 391 cases. In 84 of these cases, no attempt was made at guessing the occupation, as no clear impression was obtained by inspection. In the remaining 307 cases, guesses were made and recorded. Of these guesses 168, or 55 per cent, were correct, and 139, or 45 per cent, were incorrect. On other days, when intrinsic distractions (as opposed to extraneous stimuli) were operating, as on the day when the separation center was de-activated, only about one-quarter as many correct guesses were made as on the days when intuition was operating, free from relevant emotional interferences: e. g., 14 per cent of correct guesses as compared with 55 per cent. A similar fall in accuracy usually occurred as fatigue set in, if more than 50 guesses in succession were attempted. It was noted that there was a "learning period" of about two weeks when the study began, during which the reliability of the intuitive process gradually increased, after which no further significant increase was demonstrable.

Records on this subject were spread over a period of 47 days, interspersed with other studies. The following is the first half of a statistically-average record presented verbatim. (The special notes, including those referring to "eye sign," will be discussed later.)

Throughout the study, as exemplified, continual attempts were made to verbalize the grounds for the judgments. Whenever a criterion was satisfactorily verbalized, it was tested on several hundred cases. It was found again, as in the case of diagnosing "neurotic behavior" in the preliminary period, that reliance on such formulated criteria yielded less reliable results than intuition. Each time a new criterion was added to the formulation the percentage of hits went up, but never reached the level attained through the use of intuition during "intuitive periods."

The occupations which were most closely studied were "farmers" and "mechanics." These were the two groups which the examiner became most adept at diagnosing. From the series of 307 guesses which were recorded, 58 out of 79 guesses of "farmer," or 74 per cent, were correct, while 14 actual farmers, or 20 per cent of their total, were wrongly assigned; and 17 out of 32 guesses of "mechanic," or 53 per cent, were correct, with 10 actual mechanics, or 37 per cent of their total, wrongly assigned. During the whole run of the experiment, recorded and unrecorded, which included an estimated 2,000 cases, about 50 cases a day for about six weeks, the percentages of correctly recognized farmers and mechanics were high. The study of intuition in connection with these two occupational groups revealed some of the properties of the process. The following formulations gradually emerged, as the basis for each separate judgment was studied.

1. Certain men, when they met the examiner's neutral gaze, shifted their eyes to the left and stared out of the window. The examiner came to call this in his mind the "farmer's eye sign." It was felt, however, that this was not the whole story and that something was being missed; that the intuitive results were based on something more which was being observed and which was not included in this verbalization.

2. This uneasy feeling was confirmed by the fact that when intuition was suspended and this "eye sign" criterion was consciously applied, there were many more errors in determination. A study of these errors led to a refinement and reformulation of

Protocol No. 1

7 November, 1945

<i>Guess</i>	<i>Inquiry</i>	<i>Notes</i>
1. Truck or factory	Truck or factory	(Short, alert, stocky)
2. Lawyer or small store-keeper	Lawyer	
3. Farmer	Farmer	(Eye sign present)
4. Machinist or truck driver	Truck driver	
5. Farmer	Milkman	(Had suitable complexion but not the eye sign, and I doubted it)
6. No guess made	Ranch and bull stud man	
7. No guess made	Auto body, welding, etc.	
8. Something to do with automobiles	Truck driver	
9. Truck driver	Truck driver	(Something about the mouth and the way the hands are held; or wrists)
10. Farmer	Farmer	(Eye sign)
11. Mechanic	Mechanic and carpenter	(i. e., "uses hands")
12. Sales or office	Farm or factory	(Uncertain soft voice; anxiety state, moderate)
13. Contractor	School teacher	(Handles, i. e., bosses people)
14. No guess made	Steel mill	
15. Oil fields	Farm	(Retested for eye sign and was positive)
16. Raised on farm, worked in factory later	Raised on farm, worked in factory later	(Eye sign modified)
17. Raised on farm, worked in a big city	Raised on farm, worked in a big city as plumber and mechanic	
18. Truck driver	Truck driver in army, in civilian life was sexton in cemetery	
19. I don't know, probably a mechanic	Logger. Truck driver in army	
20. No guess	Truck driver	
21. Farmer	Truck driver, small town	(Eye sign too fast for farmer)

