

pose of returning girls into the community, these girls should at least obtain as socialized a point of view toward punishment and misbehavior as is found among their subnormal peers who have never left the community.

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## DISGUST AND RELATED AVERSIONS

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THE forms of emotion dealt with in this paper center about the phenomenon of disgust. In the course of the study, it became apparent, however, that this task could not be satisfactorily accomplished without a consideration of related phenomena. Emotions cannot be put into precisely defined categories. The totality of possible human emotions forms a continuum in which some significant centers can be singled out and considered as nuclear points for a special investigation. Such selected centers, however, cannot be adequately understood without considering the periphery, that is, the transition to and connection with related phenomena.

The material for this study was not collected in any formal manner. Some years ago certain peculiarities of the disgust-reaction awakened my curiosity and induced me to collect relevant material wherever I could get it: by self-observation, the observation of others, and from conversations with a number of persons about their personal experiences. I am quite aware of the fact that this method, if it may be called such, lacks the desirable characteristics of maximal objectivity and control. When one refuses, however, to admit any scientific validity to procedures somewhat loose methodologically, one often throws out the wheat with the chaff. For such studies as the present, one cannot claim exactness in every detail. Their value is that of preliminary gross explorations of the field. More exact information regarding details must be left to inventiveness in applying experimental or other controlled methods to the study of one or another phase of these phenomena.<sup>1</sup>

## DISGUST

On asking people to name the first disgusting object which occurs to them, one obtains almost invariably some reference to excreta,

<sup>1</sup>The questionnaire method may be indicated for further studies. Cason (3) by that method collected much information on common annoyances, a topic which is closely related to the phenomena dealt with in this study. In fact, a great part of the annoyances dealt with by Cason falls clearly into the category of disgust. The general aim and orientation in Cason's work, however, is very different from that of the present study, and hence the results of the two are not directly comparable. The same consideration applies also to Harsh's attempt at the categorization of annoyances (5).

especially to feces. The list of such objects most frequently mentioned includes feces, urine, secretions of the various mucous membranes, sweat, and similar wastes of the human and animal body. The threat of disgusting objects to the individual is a very specific one. There is no clear notion present of a damage or harm which the disgusting object would inflict upon one's person. Disgust is directed rather against close contact with certain objects, implying mainly the fear of becoming soiled. The more intimate the contact, the stronger the reaction. There is already some degree of unpleasantness in having disgusting objects in one's immediate surroundings, and more so if they soil one's clothes. It is even more disgusting to touch them with one's bare skin, and very much more so to take them into the mouth, not to mention ingesting them. The intensity of disgust increases with the degree of intimacy of contact: vicinity, contact with the skin, mouth, ingestion. This series strongly suggests that the nucleus of the disgust reaction, the main threat against which disgust is directed, is the oral incorporation of certain substances.

The reason for so strong a negative reaction against disgust-producing substances is not at all obvious. References to microorganisms and toxic substances are clearly secondary rationalizations, since disgust reactions occur also in people who know nothing of bacteria and toxins. Furthermore, one's fears of poisonous materials do not have the characteristic quality of disgust.

A more likely explanation is that the reaction is due to the particular sensory quality: the disgusting object may be disagreeable to touch, it may smell bad, etc. It is, however, easy to demonstrate that sensory qualities as such have very little to do with disgust.

Colors, sounds, tastes, odors, and other sensations as such may be unpleasant, sometimes very intensively so, but never specifically disgusting. Only the objects from which the sensory qualities emanate are disgusting. This is true even of odors which seem rather specifically related to disgust. An example will illustrate this point. I was walking through a field and passed by a shack from which a strong odor, which I took for that of some decaying dead animal, penetrated my nostrils. My first reaction was that of an intense disgust. In the next moment I discovered that I had made a mistake and recognized the odor as that of glue. The feeling of disgust immediately disappeared and the odor now

seemed quite agreeable, probably because of some rather pleasant associations with carpentry.

In perceiving colors and sounds, less contact is involved with the objects than in the experiencing of their tactual qualities. Therefore, objects are, as a rule, much more disgusting to the touch than to sight or hearing. The decisive factor is, however, not the sensory quality but the contact.

Because of the more intimate contact and greater danger of being "soiled," certain tactual properties such as softness, stickiness, sliminess particularly accentuate the repulsiveness of the wastes of the body. If any disgusting material were thoroughly dried and compressed into a solid block which would be just as compact as a block of wood or metal and from which no visible particles could attach themselves to the skin, one would have considerably less resistance to touch it.

The particular repulsiveness of the odors of certain objects is due in part to the intimacy of contact. Such odors are especially offensive because they appear experientially as something which materially penetrates the nostrils and mouth, zones which are extremely sensitive to disgust-stimulating objects.

Besides implying different degrees of contact, some types of sensations are not specifically characteristic of disgusting objects, while others definitely identify the object. The latter types of sensation are particularly apt to stimulate disgust reaction. Here again odors play a particular role. Fecal and putrid odors, for instance, outside of the chemical laboratory, occur nearly always only in connection with fecal and putrifying materials.

Summing up, one may state that the relation of the various types of sensations to the disgust reaction depends, on the one hand, upon the degree of intimacy of contact which they imply, and, on the other hand, upon the degree of specific association between sensory quality and disgusting object.

We state hence that disgust is a specific reaction towards the waste products of the human and animal body. The concept of waste or excretory products must, however, be understood in a rather broad sense, and not in the sense of a biological definition. The disgust reaction takes place on a quite primitive level, far removed from the strict logic of science. Thus, for instance, it would not be justifiable biologically to designate the products of

the sex glands as "waste products" although they often stimulate disgust. The object of disgust may be rather defined as "anything coming from the body." The fact that the object is one which has actually left the body is important for arousing the disgust reaction. Sputum, as long as it is in the mouth, is not particularly disgusting, but becomes such after elimination.

In spite of the fact that everything which comes from the body may appear repulsive, the central objects of disgust still remain the wastes proper of the body. This is evidenced in the fact that disgust from true wastes is rather universal, whereas disgust from other substances varies greatly with the culture. Objects such as milk and eggs generally are not considered disgusting. However, as soon as it is specifically emphasized that these substances come from the animal body, a certain amount of disgust is likely to arise. Many people would certainly be reluctant to drink milk obtained and eggs laid before their eyes. Further, the milk or eggs of only a few animals are considered acceptable as food, although there are cultural variations in the selection of these animals.

Kafka (7) emphasizes the fact that none of his subjects could mention any inorganic substance which is experienced as disgusting, and concludes that only objects of organic—animal or plant—origin appear to arouse disgust. This definition of the objects of disgust is too broad. In surveying my material, I find that no plant product was reported as disgusting, with the exception of certain slimy substances which greatly resemble certain animal wastes, and through such association stimulate a certain amount of disgust.

In addition to similarity, many otherwise entirely neutral objects become repulsive through *contact* with disgusting material. One would have great resistance to eating from a container once used to keep stools, urine, or sputum. No amount of cleansing and of assurances that no trace of disgusting material is any more present is sufficient to overcome this aversion. It seems as if we had conceived of animal wastes as being capable of permeating permanently everything with which they had once come into contact. Most people have found that if they inadvertently touched some disgusting object, they experienced a lingering, unpleasant, after-sensation on the skin even after washing the hands.

Because of contact with wastes, or rather because it is a source of wastes, the body of another person in general has a more or less clearly disgusting quality. Particularly repulsive are those parts of

the body which are related to excretory or secretory functions, such as anus, nasal cavity, armpits, etc. The original aversion toward the other person's body may, however, completely disappear in case of sexual attraction. We will have to consider this fact further below.

Food substances which in themselves are not disgusting at all may very easily become such through the presence of a disgusting object or even through thinking of some disgusting object or situation. It is a general experience that the strongest disgust reactions can be elicited during eating. The transfer of the quality of disgust to food occurs especially easily when attention is called to some similarity between the food and the disgusting object mentioned. A similarity, however, is not necessary, and often no conscious connection is made between disgusting material and food. One only experiences a sudden "loss of appetite" and a particular sensation of difficulty in swallowing. The special sensitivity to disgusting stimuli during eating will become more understandable when we consider the biological meaning of the disgust reaction.

The nature of the repulsion which one experiences with regard to the wastes of the body is related to the meanings which are attached to them. There is nothing particularly threatening or dangerous about the wastes of the body which could explain the strong avoidance reaction. These substances do not imply obvious noxiousness but merely and essentially *inferiority* and *meanness*. Wastes, to our minds, are something base, and contact with them is experienced as debasing, degrading rather than harmful. Excrements, in our culture and many other cultures as well, have also the socially conventionalized meaning of something mean and base. This fact is particularly clear with regard to insults and curses. The insults used in our own and many other cultures sufficiently indicate the cultural and psychological role of excrements and of those parts of the body which have some relation to excretion.

The meaning of the disgusting object often includes some animistic notions. It is not regarded as belonging to the class of inorganic matter but as something related to life, as something "almost living" which has the tendency or is endowed with the capacity to sneak up on, and to penetrate, the body in some unnatural way. This notion is not clearly conscious, but I found considerable evidence for it in some of the cases which I have had the opportunity to study.

The similarity in the organism's "attitude" towards the body wastes on a physiological level and on the level of psychologically integrated behavior is striking, and it may well be that this similarity is more than superficial. From the physiological point of view waste products are inferior substances, useless by-products of living which have to be eliminated. The common psychological meaning of wastes is also that of inferior, mean, base objects, contact with which is to be carefully avoided. Of course, one need not assume that some definite physiological notion is responsible for the disgust reaction—although the daily observation that they are *eliminated* from the body may be of some importance in determining the reaction and for the formation of the meaning of disgusting objects. The connection appears to exist on a rather immediate and much more organismic level.

The disgust reaction, as well as any other emotional reaction of the organism, may be conveniently considered in its three main aspects: namely, the *symbolic*, the *motor*, and the *autonomic* ones. All three converge to form a specific form of avoidance reaction directed mainly against oral incorporation. The symbolic (mental, experiential) reaction would lend itself to a finer phenomenological analysis, but it consists essentially in an experience of passive shrinking and in a kind of *emotional recoil* from the disgusting object. The object does not appear dangerous enough to stimulate flight. Definite warding-off reactions cannot set in, the very contact with the disgusting object being that which must be avoided.

No measurements of the motor and vegetative components of the disgust reaction have been made. Some of these features are, however, fairly well marked and rather typical, so that the description based on gross observation might not be very far from the truth. There might be present some motor reaction of rather diffuse character, but most marked are those motor reactions which involve the muscles of the mouth region, muscles of mastication, and more particularly the muscles involved in swallowing. The mouth is either tightly closed as if to prevent penetration, or occasionally the lower lip is turned downward as if one wanted to eject something from the mouth with the least possible contact. The changes of tension in the muscles of mastication and particularly of deglutition can be best observed if the disgust arises during eating. One can easily observe the difficulty involved in eating, and particularly in swallowing, which indicates the presence of such muscle contrac-

tions as are opposed to the organization of muscle tensions in ingestion. During eating a number of symbolic, motor, and vegetative functions are organized into a unit which serves best the end of ingestion of food. In the disgust reaction, approximately the same part-functions become organized into another functional unit, whose aim is to prevent or counteract ingestion. The two functional units go in opposite directions. The various features of the disgust reaction become, therefore, more prominent and are easier to observe when they form an obstacle to the opposite tendency of ingestion. The reaction is mainly against ingestion, even in cases where there is no apparent danger of the disgusting material's reaching the mouth.

Another voluntary motor reaction can also be observed occasionally. This consists in a narrowing of the nares, sometimes stopping the breathing for an instant, or in a type of respiration with cautious and slight inspiration and brusque respiration through the nose. All these indicate defense against penetration through the nostrils. This reaction can be observed also when the disgusting stimulus has no olfactory components.

Among the vegetative components there seems to be an increased flow of saliva, a fairly common reaction to bitter or bad-tasting substances. It suggests the usefulness of this type of reaction in diluting the offending or noxious substances. The most marked vegetative component of disgust is a tendency to vomit ("turning of the stomach") or, in case of severe reactions, actual vomiting. This reaction obviously is again a reaction opposite of ingestion. In the total disgust reaction, symbolic, muscular, and vegetative functions are organized toward one end, which is essentially the avoidance of ingestion of disgusting material.

Disgust is probably a general reaction in the human race and not merely a product of cultural conditioning. Hirsch (6) has advanced a theory of the cultural relativity of disgust. He finds that Bourke's book (2) contains much material in support of the thesis that disgust is entirely a matter of cultural conditioning. After reading Bourke's book and surveying some other relevant anthropological literature, I definitely gained the impression that the phenomenon is universal in all its essential features and that only rather minor cultural variations of the main theme are recorded. Among the many examples reported by Bourke there are actually only a very few which might be used as arguments in

support of Hirsch's hypothesis. I will cite an example, one of the strongest among the few which might be interpreted in favor of cultural relativity. It is drawn from a description of a Zuñi festival, which Bourke has obtained from Daniel W. Lord.

In June, 1888, I was a spectator of an orgy at the Zuñi pueblo in New Mexico. The ceremonial dance of that afternoon had been finished in the small plaza generally used for dances in the northwestern part of the pueblo when this supplementary rite took place. One of the Indians brought into the plaza the excrement to be employed, and it was passed from hand to hand and eaten. Those taking part in the ceremony were *few in number*, certainly not more than eight or ten. They drank urine from a large shallow bowl, and meanwhile kept up a running fire of comments and exclamations among themselves, as if urging one another to drink heartily, which indeed they did. At last one of those taking part was made sick, and *vomited* after the ceremony was over. The inhabitants of the pueblo upon the house-tops overlooking the plaza were interested spectators of the scene. Some of the sallies of the actors were received with laughter, and others with signs of *disgust* and *repugnance*, but not of disapprobation. The ceremony was not repeated, to my knowledge, during my stay at the pueblo, which continued till July, 1889.<sup>2</sup>

For the sake of argument we may assume that this report is authentic. The description certainly could not be accepted as a proof that, among the Zuñis, excrements are not felt to be disgusting. One notes that this ceremony took place only on rare occasions and that only a very few people actually participated in it. Those who did not take an active part in it reacted to it with "disgust" and "aversion," and one of the active participants vomited. The only remarkable thing is that some of the Indians were able to overcome their disgust. The performance looks very much like a boast of what one is able to do. Similar acts, in a milder form, are occasionally observed in juveniles (compare the epidemic of swallowing live goldfish among students in America in 1938). Furthermore, it is possible that the few people who were able to overcome the disgust reactions were under the influence of some sort of drug. The following remarks, quoted by Bourke from a Zuñi informer, would support this view: "We have a medicine which makes us drunk like whiskey; we drink a lot of that before we commence; it makes us drunk. We don't care what happens; and nothing of that kind that we eat or drink can ever do us any harm."

Another example given by Bourke demonstrates that a strong aversion may be overcome by an even stronger drive. Bourke reports the following custom from a Siberian tribe. In this tribe a kind of mushroom (*Amanita Muscaria*) is used which contains

<sup>2</sup> Italics are mine.

a strongly inebriating drug. A large amount of the drug is excreted with the urine. This drug being expensive, only the rich can afford it, while the poor gather around the houses of the rich when they have a drinking party, waiting with receptacles to collect the urine when some of the guests come out of the house. The same drug may thus be passed successively to four or five persons.

If one is acquainted with the powerful need created by a drug, it is not astonishing to find that it occasionally outweighs disgust. Extreme hunger or any other powerful drive may also do the same to some extent. What is important for our discussion is that in all these cases there is not an absence of disgust but a conflict between two tendencies, of which disgust is occasionally the weaker one.

The use of excrements in the primitive pharmacopoeia ("Dreck-apotheke") and for various magical purposes is quite frequent. These uses indicate, however, the universality rather than the relativity of disgust reaction. The following custom reported by Devereux (4) may serve as an example: "Among the Ha(rhn)de:(a)(ng), a savage jungle-tribe of French Indo-China . . . shamans who fear the temptation of becoming witches, which entails death by violence or slavery in foreign lands, will drink their own urine *to disgust the supernatural being* who gave them their unwanted shamanistic powers, and cause him therefore to take back that power."<sup>3</sup>

The crucial point in this last example is that excrements are considered as very effective means to arouse disgust. The practice of the shaman described by Devereux certainly does not indicate absence of disgust or indifference toward excreta.

It is not intended by any means to deny that cultural variations and individual exceptions do exist with regard to the disgust reaction. These variations are, however, slight and are far outweighed by the evidence for the universality of the reaction in the human race.

The results of the preceding analysis may be conveniently summarized under the following five headings:

(1) *The objects of disgust* were found to be the waste products of the human and animal body. The term "waste product" is to be interpreted in a broad sense and may include "anything coming from the body."

<sup>3</sup> Italics are mine.

An originally neutral object may become disgusting through contact or similarity with and other relations to waste products. Sensory qualities as such are never disgusting. They may, however, contribute to the disgusting quality of the object either because they imply an intimate contact with the object or because they are specifically associated with disgusting material.

(2) *The meaning of the object.* The waste products of the body mean something inferior and base. Remnants of archaic-animistic notions are frequently attached to them. They are considered not as entirely lifeless substances but as something "almost living" which has the tendency and the power of pervading inseparably everything with which they come into contact. Several arguments were mentioned against the hypothesis that disgust is entirely dependent on social conditioning. In spite of certain cultural variations, disgust can be regarded as a phenomenon which is universal in the human race.

(3) *The relevance of the disgusting object for the person* consists in the threat of being debased through the mere contact with mean objects. Contact with the mouth region and particularly the ingestion of disgusting material are the most feared. In this sense one may speak of an oral threat.

(4) *The reaction of the person to the disgusting object* was described in its three aspects:

(a) The *symbolic* (experiential, mental) aspect of the reaction consists of the experience of an emotional recoil.

(b) The *neuro-muscular* features of the reaction are inhibition of the movements of deglutition, narrowing of the nostrils and certain expressive movements of the mouth region as if preventing penetration through the mouth or simulating an effort to eject something from the mouth with the least possible contact.

(c) The outstanding *neuro-vegetative* features of the reaction are excessive salivation, nausea, tendency to vomit ("turning of the stomach") or actual vomiting.

The total reaction is essentially a defense or protest against the penetration of the disgusting substance through the mouth and to some degree through the nostrils.

(5) For a *holistic interpretation* of the total phenomenon,<sup>4</sup> one

<sup>4</sup>The holistic point of view is one in which an attempt is made to study the various phases of living in their psychologically, physiologically, and socially integrated unity and to avoid the artificial segregation of mental and physical aspects.

has to search for the common meaning of the various features discussed under the four preceding headings in order to understand why a person responds to certain objects with this strong and very specific form of aversion. All features of disgust very definitely point toward a common meaning. It was found that the objects of disgust are the wastes of the body, to which a meaning of baseness is attached; analogously the waste products are also biologically inferior substances. The reaction of the organism toward these substances is, physiologically, elimination, and, psychologically, aversion. The symbolic, neuro-muscular, and neuro-vegetative features of the reaction are manifestations of an oral rejection or of defenses against oral penetration. Since the attitude of the organism toward body-waste is elimination, the reincorporation of these substances would be literally a perversion. Disgust is a protest against this specific form of perversion.

There are a number of aversions which bear a definite relationship to disgust proper and with which they occasionally blend. In the next section we shall attempt to clarify some of these relationships.

#### AVERSIONS RELATED TO DISGUST

1. *Disgust and sex.* Certain observations seem to indicate that the emotional reaction to the usual objects of disgust is not always an entirely negative one. Seelig (8), claiming that disgust is not necessarily unpleasant, states that it may, on occasion, have a definitely positive feeling tone ("pleasurable disgust," "Lustekel"). Although Seelig's claim may be exaggerated, a certain amount of ambivalence in the experience of disgust has been nevertheless noted by other authors, too. My material, obtained from normal persons, contains only a few references to ambivalence. From the psychoanalytic point of view, such an ambivalence would be understandable as a manifestation of repressed infantile coprophilic tendencies.

The analysis of the case of an eighteen-year-old schizophrenic boy may shed some light on the ambivalence occasionally involved in the disgust reaction. On his admission to the hospital, the adjectives "dirty" and "filthy" occurred with unusual frequency in his conversation. Since I assumed that the patient used these adjectives to denote sexual matters and since I suspected that his main conflicts lay in the sexual field, I approached the problem in a

cautious and very roundabout way. I said to him: "You use the word 'dirty' very frequently. I don't quite know what you mean by it. People use that word in many different ways." (No answer.) "Suppose, for example, you had a dish of food which you like, you wouldn't call that dirty?" ("No.") "Now suppose you had no fork or spoon and had to eat the food with your fingers. Some people might say that your fingers became dirty, although you had only a little of the same food on your fingers."

At this point the patient interrupted me: "Please, Doctor, don't speak to me about such things. If you tell me such things my heart begins to pump." His face actually became flushed and perspiration appeared on his forehead.

A few weeks later, when he had slipped into a catatonic state, this same patient was observed playing with his feces and attempting to eat them. Thus it is quite plausible to assume that the fear of dirt shown by this patient previously was a fear of his own "coprophilic tendencies."

The case of this patient gives definite hints regarding the nature and origin of such morbid tendencies. In the course of the work with this young man, it became evident—without any forced interpretation—that excrements had for him a definitely sexual meaning which explains the attraction which he felt for them. A few further examples of the patient's behavior will serve to illustrate the point. Whenever the conversation touched upon some emotionally charged topic, the patient, not satisfied with one word to express what he had in mind, would rapidly enumerate a number of synonyms. He would say, for instance: "coitus, copulation, coition, sexual intercourse, sexual embrace." Sometimes he would pile on each other as many as fifteen or twenty words. These words, although not all synonymous in a strict sense, were words which *for the patient* had a common or related meaning. The most frequently used series of words included "dirt, sexual intercourse, masturbation, 'Merry Widow,' sinfulness, excrement, sperm juice, swearing, smoking, drinking, stealing"—words which were enumerated in one breath. Furthermore, the patient exhibited also in his behavior associations similar to those occurring in his verbal productions. Thus, on one occasion he stole several cigars from the office of one of the doctors. He broke the cigars into small pieces. Some of the tobacco he put into a flush bowl, some he rubbed vigorously in his pubic region and some he tried to eat.

These few examples suffice to show that excreta and sex had closely related meanings for this patient. This fact manifested itself very clearly on numerous occasions during the rather extended period of observation. It seems plausible to assume that in this and in similar cases the attractiveness of excreta is due to the sexual meaning attached to them.

There are several circumstances which make possible an association between the excretory and the sexual functions. First of all, a common taboo places both functions in the category of the forbidden and shameful. In the above case, it is fairly clear that the association between excreta and sex is partly due to the common taboo. The series of associated words given previously includes not only matters related to excretion and sex but also to "stealing," "drinking," and "smoking"—that is, everything which is forbidden, particularly to the child.

An even more important factor in the association between excreta and sex is the close anatomical and functional relationship between the excretory and genital organs. The male urethra is just as much a duct for the urine as it is for the ejaculatory discharge. Children, and many biologically unsophisticated adults, often ignore the fact that the female urethra and the vagina are separate organs, and entertain the primitive theory that urine is passed through the vagina.

Thus the common social taboo and the anatomical and functional relationship between the excretory and the sex organs make it understandable that a sexual meaning may be attached to the excreta. It is likely that in the ambivalence towards excreta—an attitude which in a mild form may occur normally and in certain pathological instances is clearly present—the attraction is due to the erotization, that is, to the sexual meaning given to the excreta. If this interpretation is correct, the ambivalence does not pertain to the disgust reaction as such. Rather it means that the same physical object represents two psychologically different objects: first, a waste product of the body to which one reacts with disgust and, second, a sexual object which may have a positive attraction for the person.

A certain degree of erotization of the excreta may have led Kafka (7) to his sexual theory of disgust. According to Kafka disgust has little to do with the function of ingestion. Rather it is a mechanism regulating sex life. He seeks to establish the sexual nature of disgust reaction by postulating a mechanism which he

calls "inversion." By inversion Kafka means that in sexual attraction precisely those things which otherwise would be most repulsive become most attractive. Kissing would be an example of this. The mouth of another person, since it is a strongly secreting region, is generally repulsive, and it becomes attractive only in the case of a positive sexual attitude.

Kafka's theory of inversion does not seem acceptable, because one can hardly say that the most characteristic objects of disgust such as feces play any positive role in sexual attraction, except in some rather rare forms of sexual perversion. It seems that Kafka's view is based on a lack of discrimination between disgust proper and sexual aversion. The body of another person—because of its waste products—is likely to become an object of disgust. Such is, however, not the only point of view from which the body of the other person may gain a personal significance. The body of another person may be, among other things, also an actual or potential sex object, and emotionally evaluated in a positive or negative sense. The primitive forms of sexual aversion and sex attraction both are directed toward the whole body in general, with special emphasis on the genitals and such other regions of the body as socially or individually are closely associated with sex. Since the sex organs are strongly secreting regions of the body and thus likely to become objects of disgust, it is understandable why sexual aversion and disgust may become intimately linked in actual experience. There is, however, no inversion of the disgust reaction proper.

Sexual attraction and aversion is a problem in itself and one which we do not wish to analyze in this paper. We wish merely to indicate some of the relations which may exist between sex and disgust. We also omit the discussion of the psychological significance which excreta have assumed for the theory of psychoanalysis. We admit, however, that whenever meanings other than those contingent upon their being waste products of the body are attached to excreta, they may arouse emotions other than disgust.

2. *Disgust and uncanniness.* The feeling of gruesomeness or uncanniness is frequently associated with the experience of disgust. The former may also occur independently. The feeling of uncanniness is a variety of fear, the object of which is somewhat vague. Still, it is not a fear of the unknown in general but of an unknown to which certain particular characteristics are attributed more or less consciously.

The uncanny threatening object is thought of as an "unnatural" power, as something which is beyond the lawful and orderly course of events. Apparently unmotivated movements of objects, sounds apparently without any natural source, and the like, may arouse a feeling of uncanniness. The darkness, which veils the connections between objects and events in the environment, so that isolated messages of the senses are projected against an unknown background, is particularly likely to arouse gruesome, uncanny feelings. It is not the events themselves, of which we do not know the origin, that appear uncanny. This quality of one's experience seems to arise only if one associates it at least vaguely with some *personified*, unnatural source. Furthermore, these personified powers are thought to have *evil* intentions toward men. Even though civilized man has overcome intellectually most of the belief in ghosts, the remnants of such a belief still reverberate in his emotional life. Lichtenberg's aphorism expresses this state of affairs neatly: "Not only does he not believe in ghosts, but he is not even afraid of them." We already mentioned in discussing the disgust reaction proper that the meaning which defines one's emotional reactions is very different from one's purely intellectual formulation of concepts.

There are certain objects which are felt to be unnatural in a rather specific sense, namely, in that they do not fit into the usual course of *biological* events. Examples for these are supernumerary and mutilated parts of the body. The amputated stump—particularly when moved—does not appear as an actual part of the body but rather as an independent being that is unnatural, *i.e.*, which does not have its natural place within the organism but leads a kind of parasitic existence in it.

The danger which uncanny objects mean for us is essentially the danger of this "parasitic invasion." It implies the impairment or loss of the power of the organism for self-government. The harboring of alien powers means that events can go on within one's person over which one has no control. In folklore the characteristic fear of spirits is not so much the fear of bodily injury as the fear of being *possessed* by the spirits.

There are some relations between the meaning of disgusting and of uncanny objects that may explain why the two types of emotions often blend in actual experience. To the primitive mode of experiencing, the excreta, these lifelike entities, do not really seem to



belong to the organism. Rather do they seem to lead a parasitic existence in the body. Thus the danger of excreta entering the body fills one not only with disgust but occasionally with an uncanny feeling. The notion that excreta are *foreign* "beings" which lead an unnatural kind of existence may be responsible for the fact that excreta of others appear always more repugnant than one's own, since the quality of being alien and extraneous to the organism is more pronounced in the case of the former.

A typical object of uncanny feelings is a dead body. There is a class of animals—the amphibia—which people associate with the dead and therefore react to them with a feeling of uncanniness. These animals, like dead bodies, are cold and frequently pale. Some of them, such as snakes, have an unusual mode of locomotion which—since we generally regard ourselves as the standard—appears to us as unnatural. All these qualities make these animals uncanny. The skin of the amphibia, such as that of the frog, has a clamminess which makes these animals disgusting as well as uncanny.

Thus we see that there are certain similarities between the various aspects of the two emotional reactions. They may occur entirely independently from each other but, because of the manifold relations between them, they easily blend.

3. *Disgust and food aversions.* Food toward which one has a personal idiosyncrasy may also arouse a reaction which is in some respects similar to disgust. Temporary food aversions may arise through overeating, particularly of sweets and fatty material. The similarity between disgust and food aversion lies in the fact that both reactions consist in the oral rejection of the object. The main difference is that the food toward which one has a personal aversion is not associated with the meaning of inferiority and baseness, which is the main characteristic of the disgusting object, and it lacks also the archaic meaning which disgusting objects usually have.

One class of foodstuffs—namely, meat—deserves special consideration in this connection. The use of meat, since it is part of a dead animal, should, according to the preceding considerations, be both disgusting and uncanny. Against such a deduction stands the fact of the almost universal use of meat for food.

If one analyzes the experience, it becomes clear that meat as food has undergone a radical change of meaning. Beefsteak does not involve for us the meaning that it is part of a dead animal. There

are several factors which help to bring about the change from the original meaning of meat as "part of a dead animal" to "food." Cooking, roasting, smoking, the use of spices, etc., all help to disguise the original properties of meat. Those who, like most people in Western society, are not accustomed to eating raw meat, will be reluctant to eat it, because to their minds only prepared meat has undergone the necessary change of meaning. Anything which reminds one of the origin of meat—for instance, a well-preserved blood vessel—is likely to arouse a certain degree of disgust.

The change of meaning from "dead animal" to "food" is not always easy. In many instances it does not take place. This failure is best shown by the fact that in any given culture only the meat of a limited variety of animals is eaten, while that of many others is avoided as disgusting. It is worth while to examine briefly the underlying principle of the selection.

If one lists those animals which are and those which are not considered edible, one finds that the first class is made up mostly of herbivorous animals, such as cows, sheep, goats, deer, rabbits, etc., the second mainly of carnivorous animals, such as cats, foxes, wolves, etc. The omnivorous animals take a middle position. They are sometimes eaten, sometimes not. This rule is most valid for mammals. But even among birds the strictly carnivorous varieties like the stork, eagle, etc., are considered as not edible. There are several exceptions to this rule, which none the less covers a great majority of instances.

The reason for this selection seems to lie partly in the circumstance that carnivorous animals themselves feed on material which is disgusting in itself. The strong aversion to eating scavenger birds or hyenas shows that we are not indifferent to that upon which the animal has fed, when we in turn determine whether or not the animal in question is edible. A second factor should also be considered. The disgusting quality of the animal body is due to its waste products. It is known that the excrements of carnivorous animals possess to a higher degree those qualities (putrid odor, etc.) which identify them as excrements than does the waste of herbivorous animals.

In general, the more disgusting and the more uncanny the animal is, the greater the difficulty in changing the meaning of the flesh from "dead animal" to "food." It is difficult for the flesh of rats, mice, insects—because of their factual or assumed relation to dirt—

or of frogs, snails, snakes and parasites—because of their additional uncanny qualities—to assume the meaning of “food.” It is well known, however, that most of these animals are eaten occasionally. In fact, even the most disgusting objects, for example, the uncleaned intestines of birds, are eaten occasionally as delicacies; but these are exceptions rather than the rule.

Hirsch states that those animals whose meat one does not eat in a given culture were originally totemic or tabooed animals. The original emotional reaction was that of veneration and avoidance. As the cult became forgotten, only avoidance remained, which finally turned into disgust. This hypothesis seems to be rather improbable for several reasons. Although it would be understandable to postulate the transformation of one emotion into a related one, like veneration into fear, the change from veneration to disgust is rather unlikely. Against Hirsch’s stand militates also the high correlation between the carnivorous and not-edible, and between herbivorous and edible animals. There are some herbivorous animals the meat of which is avoided; the most outstanding example is the horse. Although horse-meat is occasionally eaten, one could not say that its use is very common. Hirsch’s explanation may be in part applicable to this and similar cases. This animal may once have been taboo. It is unlikely, however, that, strictly speaking, the transformation of the emotion of veneration into that of disgust ever takes place. It is more likely that because of religious avoidance the meat of an animal has no occasion to assume the meaning of “food” and that the original meaning of “dead animal” is retained.

Several types of aversions are more or less closely related to disgust, but the most obvious ones seem to be those discussed in this section, namely, sex aversion, food aversions and the feeling of uncanniness.

#### GENERAL CONSIDERATIONS CONCERNING THE STUDY OF THE EMOTIONS

From the preceding analysis certain suggestions arise concerning the study of emotions in general. It appears convenient to consider the results under the following five headings: the object or situation which calls for an emotional response, the meaning of the object, its relevance to the person, the reaction proper and the holistic

interpretation of the given emotion. This simple scheme may prove useful for the study of any type of emotion.

1. The investigation may preferably start with a definition of the class of *objects* which provoke the type of emotion in question. Sometimes this task is an easy one, but sometimes extremely difficult. In certain instances a great variety of rather diverse objects or situations may provoke similar emotions. In this case one should inquire as to what is common to all those objects and situations.

2. Any object gains significance for the person through its *meaning*. The entire meaning of an object is usually a rather intricate complex of notions which, as a rule, only in small part is clearly conscious. To find the less obvious and rather hidden meanings requires much skill and often the application of special techniques. The analysis of disgust and of the feeling of uncanniness reveals the fact that the emotional life of civilized men still is largely determined by very primitive, archaic meanings. These meanings are not as a rule clearly conscious, but they are nevertheless powerful determinants of behavior. In the analysis of meaning one should distinguish as far as possible the universal, the socially determined, and the purely personal elements.

3. The person does not invariably react to objects even after they obtain a personal meaning. The object must be *relevant* to the person before any response takes place. In the case of disgust the biological relevance of the object is a threat of being soiled by waste products. This threat is the true stimulus for the reaction. It is noteworthy that the stimulus thus defined is not something entirely pertaining to the environment, but it already implies a subject with specific needs, drives, cravings, or whatever terms one wishes to apply to the organism’s dynamic tendencies. This is an example of the unity of the environment and the individual, a topic which has been considered by me in greater detail elsewhere (1).

4. *The reaction proper* may be described from three aspects: the symbolic (experiential), the neuro-vegetative, and the neuromuscular aspect. In the disgust reaction all three factors meaningfully converge in preventing the oral penetration of disgusting substances. This type of analysis ought to be applicable to any type of emotional reaction. Its essential characteristic consists in that it does not seek merely to establish correlations between psycho-

logical and somatic factors, but it rather seeks to detect the common biological meaning of the reaction as it is revealed in its various features. Although the notion of a psychophysical parallelism or a psychophysical interaction is generally considered as outmoded, in many studies devoted to psychosomatic relations there still persists the idea of interaction between somatic and psychological functions. The analysis of the disgust reaction shows that the connection of somatic and psychological features may be understood without reference to interaction. They may be regarded not as interacting but as convergent part functions unified into a total reaction through a common biological role.

5. When the various aspects of a certain type of emotion are analyzed, one may attempt a *holistic interpretation* of it. There is a special reason why the interpretation should be of the holistic type. The premises are that every form of behavior is a meaningful unit and all that pertains to a given form of behavior—object, meaning, relevance, reaction—contributes its part toward revealing the fundamental nature of that behavior.

The five points of reference are the minimum to be considered in the study of emotions. In certain instances further points may profitably also be taken into account. Thus in the clinical variety of investigation not only the more or less general but also the strictly individual aspects are of importance. In the case of pathological emotion, such as a phobia, the emotion stimulating object, its specifically personal meaning and relevance, and the specific personal mode of reaction have to be clarified. This, in turn, usually necessitates the scrutiny of the biographical data of the person.

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## THE SO-CALLED EPILEPTIC PERSONALITY AS INVESTIGATED BY THE KENT-ROSANOFF TEST\*

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ACCORDING to the views expressed by Clark (2; 3; 4; 5; 6; 7; 8), Bridge (1), Doolittle (10), Thom (19), Jelliffe and White (13) and many other writers, the personality of the "epileptic" patient constitutes a specific and pathognomonic reaction type, represented by aberrations in the intellectual, emotional, and social patterns of behavior as follows: intellectual dullness, inelasticity of thought, rigidity of opinions, deficiency of memory, egocentricity, pedantry, ambition, irritability, querulousness, tenacity, stubbornness, superficiality, fanaticism, hypochondriasis, moral and ethical depravity, introversion, vanity, loneliness, shallowness in religious convictions, dipsomania, barbarosity, and sexual immaturity. In addition, hallucinations, delusions with persecutory and incestuous content, and physical stigmata are repeatedly described as part of the "epileptic personality."

A critical examination of the numerous writings committed to this concept indicates that the authors' convictions have been reached essentially by the method of subjective impression and that they have been reinforced largely by verbal reiteration and the implicit tendency to perceive the "epileptic" individual in terms of a well-established attitudinal set. The difficulties of interpretation inherent in personal bias do not appear for purposes of scientific investigation to have been circumvented, and for this reason certain reservations to the acceptability of the traditional teachings present themselves. These reservations take the following forms: first, that the concept of a specific "epileptic personality" is open to the same theoretical and experimental criticisms which may be directed against "trait psychologies" in general (9; 16; 20; 21); second, that the concept implies "epilepsy" to be itself a disease entity, an implication which in the light of present-day evidence is scarcely tenable; third, that dialectic support of the concept invariably

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