

FALLACIES OF PERCEPTION.

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THERE are many misperceptions; so common are they as to be scarcely noticed. If a person will observe his own thoughts from moment to moment, he will be surprised at the number of fallacious perceptions which he makes, some of which are immediately corrected, others are corrected after lapse of time, and prob-



Fig. 1.

ably many others that are never corrected, because of their insignificance in the practical affairs of life. These errors of judgment are especially common in audition and vision, the two senses most highly vicarious. A sound may be obscure by reason of its faintness, or by reason of diverted attention. Sight may be obscure by reason of the twilight, or it may be obscure because attention is elsewhere directed. All such impressions may be veridical or may be

fallacious. If I am intently listening for a sound I may interpret a sight for a sound; if I am intently looking for an object, I may interpret a sound for a sight. If I am intently listening for a particular sound and hear another, I may interpret it for the one I was expecting; if I am intently gazing in expectation of seeing one object, and another falls upon the field of vision, I may see in

it the one for which I was intently gazing. These are all misperceptions.

I draw nine black lines on white paper, as shown in Fig. 1, and you see them as lines on paper. Now close one eye, and lift the page horizontally nearly

to the height of the eye, and these lines will appear as pins. By a little manipulation you can see them now as pins and now as lines. You know they are not pins, yet you see them as pins; that is, you have formed a habit of interpreting sense impressions like those made by the lines when they are in certain attitudes as marks or symbols of standing objects set as pins, stakes, men, or trees, and so thoroughly established is this habit that such an attitude of lines may be interpreted as standing objects when they are not, and you will affirm that they are lines at one time and standing objects at another. This is one of the standard illustrations of misperception. Now will be understood the statement when it is affirmed that only color is manifested by the object to the eye, and that when such a judgment is formed it

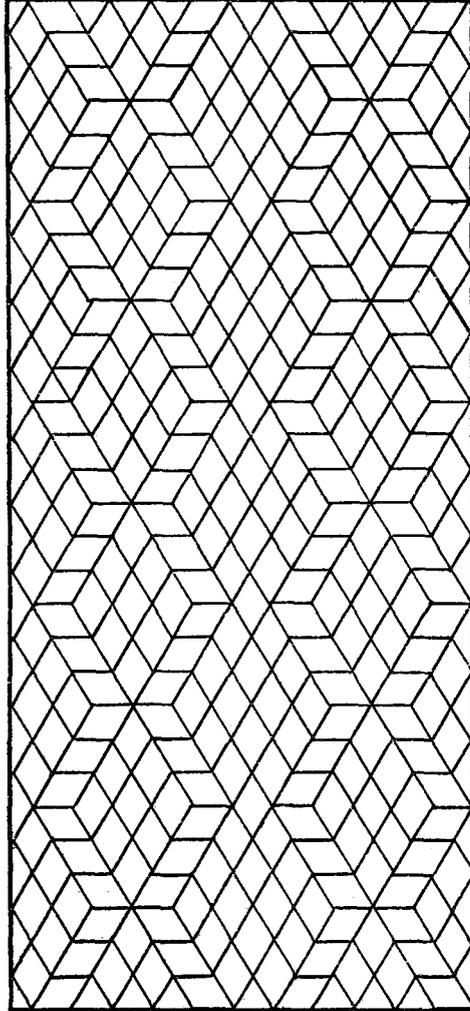


Fig. 2.

may or may not be valid, but that the color is interpreted as a symbol of the object in a judgment of perception.

Before me as I write there is a steam register, which is covered with a tablet composed of bars with interspaces, the bars being arranged in patterns; a drawing of this tablet is illustrated in the accompanying diagram No. 2.

Looking upon it in the ordinary position in which a book is read it appears as a pattern of bars; turn the top of the book to the left in such a manner as to see the bars obliquely, and it appears as a collection of crates or boxes inclined one upon another; turn it again so that the direction of sight is changed ninety degrees from the first position, and you can see it as a series of steps like a stairway, every tread having a series of re-entrant angles. Again, we see that in vision nothing but color is given to consciousness, and that form comes by interpretation or inference. Deftness in inference is acquired by practice; that is, it is the result of experience. We come to interpret lines in this manner as meaning form by the experience of every moment of waking life, and inherit the skill from a long line of ancestors, so that our powers of perceiving formed in this manner are both inherited and habitual, or, as I prefer to say, both instinctive and habitual, and that which is both inherited and habitual is intuitive.

Light and shade are interpreted as deftly as lines, and we can see forms without other colors, so that a portrait which you know is only light and shade, is a symbol of the form and expression of a human face. But there are other colors both in nature and in art, and we instinctively and habitually interpret all colors as forms; but sometimes we see colors without seeing forms. The illusions of inference by the interpretation of lines in vision have been the subject of much investigation in psycho-physics, which is one branch of scientific psychology. But adequate experiments have not yet been made in light and shade, and in other colors when not represented by lines. The doctrine dates back to the days of Berkeley, who set forth the nature of perception in vision in such manner that it has become a classic, though he afterward devoted his energies to the propagation of fallacies in metaphysics and tar-water.

From time to time during the last thirty years, I have studied the nature of perception in myself and in others. Especially have I studied it as a mental phenomenon in the untutored Indians of North America. On every hand these facts have appeared: first, that every perception as a judgment involves an interpretation; second, that perceptions may be true or erroneous, as inferences

are valid or invalid ; and third, that visual perception itself is acquired by experience.

Among the Indians, I have found that at first lines are not easily interpreted, so that pictures in lines do not seem to represent forms ; but the power of interpreting forms by lines is rapidly gained. I have found also that the power of interpreting light and shade is great in the savage for natural objects, but must be cultivated for unknown objects of art. And, again, I have found that the power of interpreting the miscellaneous colors of pictures is well developed when they represent things with which they are already familiar, but that it is necessary to familiarise them with things to develop the power of interpreting unknown forms.

Again, in topographic maps, relief is represented usually by light and shade in hachures, but in the best maps relief is represented by lines which follow the contour at equal intervals of altitude. Such maps cannot be read by the inexperienced man, but he can develop the power so that a contour map will seem to be a picture of mountains and valleys and of hills and dales. Experience has taught me that this power is more easily gained and greatly assisted by representing relief in one color and drainage in another, as in blue ; for when the knowledge that water is blue is represented in the map as blue, it will carry the streams down and aid in the perception of the relief.

From the illustrations which have been given it will perhaps be made clear that perception is the interpretation of a symbol, and that the power of interpretation comes by experience. We are constantly perceiving with all our senses, but sounds and sights are the most abundant, coming in hosts with every minute of wakefulness, and a habit of interpretation is formed which is conjoined with an inherited aptness. External forms do not come to the eye or the ear as consciousness, but only to the mind as inferences. Habitual judgments of the mind which are illusions because unverified, may occur again and again in millions of cases, and the repetition but confirms the illusion, and such intuitive illusions can hardly be dispelled even by overwhelming knowledge, but the truth and the error will appear side by side and be entertained as verities, and the mind will search for some metaphysical explanation of them. As a last resort of logic, it will assume the existence of a mystery, and be confirmed in the doctrine that the universe is contradictory.

Our forefathers called the sky a firmament. It was believed to be a solid which presented a surface toward us, and this mis-

conception is universal among barbaric and savage people. By the Indian the sky is supposed to be ice, or some other crystalline solid, and it does appear to be a surface, in spite of our knowing that it is not. This arises from the fact that we always discover color on surfaces, and when surfaces are removed usually colors are changed. We have thus as individuals and as a race in all generations habitually considered color to be a symbol of surface. That which is habit in the interpretation of a sense impression contradicts that which we have learned by various operations of reasoning from other sense data. Thus habitual illusions often contradict certitudes, as they may be discovered by the higher forms of reason, and we often entertain certitudes, and fallacies as if co-existent, and the world seems contradictory. These judgments have a curious effect on the mind, for the contradictory judgments may both be held in a vague way to be certitudes and still in a vague way to be fallacies, until finally this is explained by a theory, that both are unknown and unknowable noumena which are manifested by deceptive phenomena. So habits of judgment are formed which are difficult to eradicate.

To unverified perception the rainbow as a form with a surface has been established because of the habit of interpreting color as a mark of surface ; this fallacy is common, perhaps universal. The clouds often seem to be painted upon the sky, or to be moving along the sky, but the trained meteorologist in time learns to distinguish clouds as forms, and discovers fleeting figures in them, and he still further discovers the relative position of clouds by recognising the near from the far, and yet, to the untrained observer, there still lingers an element of fallacy.

It was long believed that the earth has ends, corners, foundation, and a flat upper surface. When it was discovered that the earth is a spheroid, the illusion of up and down as components of direction at right angles to a flat plane was dispelled, and a concept substituted of down toward the centre and up from the centre. While a few grasped the idea, the many still held to the old, and now after more than two thousand years, there are people who have not mastered the concept.

One man sees the disc of the moon when it is riding high as having the size of the top of a teacup, another as large as a cart-wheel. But the moon will seem to be larger than a barn if it is seen behind a distant barn, or it may seem to be as large as a great mountain when it rises behind such mountain, and yet every intelligent man knows the moon to be 2,162 miles in diameter. As the

moon rides the heavens, it seems to be this side of the surface of the sky, although we know that there is no such surface. Such habitual judgments of space and form seem to contradict our knowledge. When knowledge contradicts primitive and habitual judgments, there is a pseudo-belief in both, and the universe seems contradictory.

The sun appears to us as a mile or two away, but we know that it is ninety-three millions of miles away. The sun seems very much nearer to us when it rides high in the heavens than when it comes up behind a near hill, or when it rises behind a distant mountain with intervening plains. What we know and what appears seem to contradict each other; and antinomies are invented to explain these contradictions.

By a natural process of fallacious judgment, the idea of space as void is developed as an existent thing or body. This is the ghost of space—the creation of an entity out of nothing. I may remove the furniture from the room, it is still filled with air; I may remove the air from the room, it is still filled with ether. We may suppose it possible to remove the ether, then nothing—void—remains, but man has no means by which to accomplish the feat, and we call the air and the ether space. The space of which we speak is occupied; it is the space inclosed by the walls, occupied by air and ether. We may measure its dimensions by measuring the walls, but we cannot measure the void. We can by no possibility consider non-space or void as a term with meaning; we can consider only the walls as the real terms. If we reason about it mathematically and call it x , the meaning of the x in the equation is finally resolved by expressing it in terms of body as they are represented by surface. This non-space has no number; it is not one or many in one—it is nothing. It is not extension as figure or structure—it is nothing. Void space should be called voidable space, as voidable by one set of extensions when filled by another. The fallacy concerning space is born of careless naming. No harm is done by this popular misperception of space until we use it in reasoning as a term of reality; then the attributes of space may be anything because they are nothing. Such space is the occult noumenon, the reified void. This is the space of Kant, and usually the space of metaphysic. It is the reification of "pure" property, void of all extension which can have no relations; that which is without relation is non-existent.

When I consider the distance from here to San Francisco, I may think of the plateaus, mountains, hills, and valleys which have

to be surmounted and crossed in traversing the distance, or I may think of the days required to make the journey. Yet I imply or posit the plateaus, mountains, hills, and valleys, so when I consider the distance to the sun I posit the spatial particles which intervene, though I may cancel their consideration, but if I affirm that space as nothing intervenes I affirm a fallacy. By calling it a five days' journey I do not annihilate the topography.

In the earlier stages of culture, when there was no knowledge of air and ether, this was the judgment of mankind, but I must not go on repeating this judgment when I know the truth. If the primeval judgments are held to be veridical, and scientific judgments also to be veridical, then the world is contradictory. Metaphysicians formulate these erroneous judgments and scientific judgments as antinomies.

Misperceptions have been discussed sufficiently for present purposes as exhibiting the characteristics of illusions. I go on to discuss spectres which are derived from hallucinations in order to set forth the characteristics of delusions.

Fallacies of sensation in the metabolic sense seem rarely to produce fallacies of perception. If they do arise they are vague. It is rarely, indeed, when they are produced that the deceived mind refers them to distinct objects as forms, but in extreme cases deceptive forms appear, especially in the case of odors, as when the subject refers such odors to the bodies of the dead, as the woman who referred the pestilential odors which she believed she sensed to the corpses buried under the Salpêtrière.

Usually the fallacies of touch produce illusions which the deceived subject attributes to some form of object which touches the skin; commonly these objects are insects.

In my study of the literature of hallucinations, I find but few hallucinations of the sense of pressure; yet there are a few, as when people dream or insanely imagine that they are enclosed by walls which are ever becoming narrower and thus compressing them.

To the person who has all of the senses, most of the hallucinations occur in audition and vision, because of the function which spoken and written language performs in the ideation of these senses. Hallucinatory sounds often produce phantasmal words spoken by spectral persons.

The spectral person may be the self, or it may be another or a congress of others. When the voices of others are falsely perceived as persons, these others are spectres.

Spectres may be classified by senses deceived, and subclassified by the agencies through which they are produced. The class of spectres derived from hallucinations of vision we will treat as thus subclassified, for the purpose of illustrating the doctrine.

When the nervous system is relaxed in slumber so that sense impressions carried by the fibrous nerves are directed by the ganglionic nerves at random to different portions of the cortex of the brain, sense impressions are produced upon that organ which result in dreams, and the imagination of the sleeper revels in wonderland. As these are of nightly occurrence, and all men dream, the ghosts of dreamland that fill the sleeping life are remembered in many a reverie of the waking life.

In the culture reached at the stage of tribal society, images reflected by the water or other shining objects are supposed to be ghosts. Echoes are also referred to ghosts. Thus there is an explanation given to the common phenomena of reflected sights and sounds by attributing them to the ghosts which appear in dreams.

Hallucinations of ecstasy always seem to produce phantasms or spectres of vision. Hence the spectres seen by the great men of the world who have had a weight of affairs to contemplate—too great for their mental faculties; hence the spectres seen by divines and poets. Such ghosts can be summoned readily by those phenomena which we have classified under the general designation of crystal vision, for the mind seems able by an effort of will to abstract attention from sense impressions in a fixed gaze upon a bright object, and then to be deluded with false judgments about such bright objects, seeing in the bright object itself many strange forms which are recalled from memory and projected into many incongruous relations of space. The phantastic images of the Braid's crystal are thus ghosts summoned from the vasty deep of hallucination.

The hallucinations of hypnotism make men see things which do not exist, and prohibit men from seeing things upon which their eyes are turned, when the patient is under the influence of the words or of the suggestions of a dominant operator.

Chloroform, ether, peyote, and many other drugs, bring us hallucinations under conscious experimentation. But there are many intoxicants. In tribal society intoxicants are used for the purpose of producing hallucinations; in modern society alcohol is used as a beverage to produce gustatory pleasure; but in whatever way intoxicants are used hallucinations are produced. The hallu-

cinations of obscure vision, reinforced by the hallucinations of hypnotism, are still reinforced by the hallucinations of intoxication, until ghosts are the common property of mankind, and only through scientific training is the mind able to banish them. But these ghosts, while they affect the lives of many sane people, do not take entire possession of them.

When, however, the mind is diseased, the hallucinations of sane life take possession of the person. The poor soul possessed by hallucination becomes a prey to melancholia, hysteria, and dementia. But the mind of the superstitious man, who is ever recalling the phantasms born of hallucination, is exploiting upon the brink of the sea of hallucination into which he may plunge by insanity. While ghosts may be smelled, touched, or heard, yet they are more commonly seen, for vision is the most idealistic sense.

In the realm of ghosts there are five provinces—the land of dreams, the land of ecstasy, the land of suggestion, the land of intoxication, and the land of insanity. In tribal society ghosts of animals prevail, while in civilised society ghosts of men prevail. If you were talking to a savage about some unusual occurrence, he would tell you how he had been warned by a bear, that a humming-bird had appeared, that a rattlesnake had crossed his way, that an eagle had come to him in his dreams. Homer's ghosts all appear as deities in the guise of human beings.

For twenty centuries metaphysics has been in search of the noumenon—the thing-in-itself. For a long time it spoke with disrespect of scientific research, but in modern times it patronises science as a very useful adjunct to metaphysic by showing how spectacles, as phenomena, symbolise noumena. The assumptions of metaphysic as it patronises science would be the richest jest of civilisation, had they not their equal in the ridicule they make in considering realities as base-born, belonging only to the lower world where men live, while metaphysic is supposed to dwell in a region of sublime thought.

We have defined ghosts as fallacies of hallucination conceived as forms. Those who believe in ghosts define them in some other way. Milton may be considered one of the best authorities on ghosts :

. . . . for spirits when they please
Can either sex assume, or both ; so soft
And uncompounded is their essence pure ;
Not tied or manacled with joint or limb,
Nor founded on the brittle strength of bones,
Like cumbrous flesh ; but in what shape they choose,

Dilated or condens'd, bright or obscure,
 Can execute their airy purposes,
 And works of love or enmity fulfil.

Shakespeare does not believe in ghosts, but he knows how they are seemingly produced by hypnotism.

Ham.—Why, look you now, how unworthy a thing you make of me. You would play upon me ; you would seem to know my stops ; you would pluck out the heart of my mystery ; you would sound me from my lowest note to the top of my compass : and there is much music, excellent voice, in this little organ, yet cannot you make it speak. 'Sblood ! do you think I am easier to be played on than a pipe ? Call me what instrument you will, though you can fret me, you cannot play upon me.

Enter Polonius.

God bless you, sir !

Pol. My lord, the queen would speak with you, and presently.

Ham. Do you see yonder cloud, that's almost in shape of a camel ?

Pol. By the mass, an' 'tis like a camel indeed.

Ham. Methinks, it is like a weasel.

Pol. It is backed like a weasel.

Ham. Or, like a whale ?

Pol. Very like a whale.

Ham. Then, will I come to my mother by and by. They fool me to the top of my bent. I will come by and by.