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## Perception and Its Kinaesthetic Origin

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## PERCEPTION AND ITS KINAESTHETIC ORIGIN

### 1. THE ARBITRARY CHARACTER OF THE NAMES: "PERCEPTION", "MEMORY", "IMAGINATION"

The three so called "faculties": perception, memory and imagination, are in fact the products of an artificial distinction of philosophers. What we really observe in actual life is that none of these three "faculties" appear in their pure form. All three coexist in one active process of the mind; and according to which one prevails at any given moment we make an arbitrary distinction between them and call them by their distinct names.

This naming would not be so dangerous if it did not suggest that the character of those processes is quite different from that which we observe in reality.

First of all, the different names given to these processes suggest that their natures are absolutely different; but we shall endeavour to prove that this is not the case.

Secondly, the names referring as they do to the visual sphere (to perceive, to imagine) obscure the origin of those "faculties", which, though appearing to consciousness as mainly visual are formed by the motor reactions of all the organism, of which the visual elements are the abbreviated signs only.

### 2. OUR PERCEPTION FORMED BY OUR PREVIOUS EXPERIENCES. WHAT REALLY FORMS OUR PERCEPTION IS THE GENERAL READINESS TO ACT

When we are not moved to act upon any particular object, our perception remains vague and uncertain, is more potential than actual. But even this vague perception is formed from the potentiality of activities directed towards objects.

When I perceive a room without being especially interested in it, I have a general knowledge about it, but I am not aware of any details.

But when I fix my attention on any particular object, I begin to realise its potentialities. This is due to my previous experiences. I realise its shape and colour, its position and distance. If we exclude colour as due especially to the sense of sight, all these qualities are due to our previous activities. Many objects of similar shape form our knowledge of the shape of a given object; and our habit of measuring space by the combined help of sight and motor experience tells us how distant is the object with which we are concerned.

It is only an illusion that all that is given directly to us is due to the sense of sight. It is our activity which forms our visual impressions as a whole, interpreting the particular data of the sense of sight in terms of our previous activities which had manifested themselves in conjunction with similar sense-data.

All these previous activities differ in this way only from those which we call memories: in the case of perception we direct our attention to present activities, assimilating past activities to them; while in the case of memory we direct our attention to the past, partly eliminating the present sense-data, and partly assimilating them to the past.

But even if the purpose of our activity is directed towards the present, it does not mean that we can avoid the past completely, because all our ability to perceive is formed by past experiences.

### 3. ANTICIPATION OF EXPERIENCE IN PERCEPTION

Thanks to this ability shaped by the past and stimulated by our present need or desire we have the anticipation of experience in perception. That is especially evident in the case of delusions, which is as William James put it, "a false opinion about a matter of fact, which need not necessarily involve, though it often does involve, false perception of sensible things."<sup>1</sup>

In delusions a man moved by a strong desire, which is in conformity with the system of his false judgements, seems to see only what he desires to see, but he is not free to do so without the help of some fragments of perception. If he is suffering from the mania of self-importance and imagines himself to be for instance a king, he is inclined to interpret everything in such a way that it confirms his delusion. Seeing something yellow, for instance a straw on his bed, he would imagine that it is gold appertaining to the insignia of his royal power. The glimpse only of the object of a yellow colour would be perfectly sufficient for him to create an illusory perception, which was ready in him, and only waiting for a more or less appropriate sign from his senses.

Although this particular example has been taken from the world of insane people, it seems however very characteristic and essential to the real

<sup>1</sup> W. James, *Principles of Psychology*, Vol. II, p. 114.

understanding of our perception. To those who would object that cases of insanity are quite different from those of normal people, I would, of course, answer that insanity is compounded of the same elements which characterise our normal life, but mixed up in a different proportion and developed to a different degree.

On the other hand, mental diseases which are usually characterised by a great tension of emotional life naturally show many things more clearly than the manifestations of our normal life, where many of our mental processes seem to be ruled much more by habit than by true emotion. But even in our normal life every case which appears to be one of emotional stress, we can see nearly the same as what we can observe in these pathological states of morbid character.

People, when in a desert and suffering from intense thirst, are inclined to see everywhere the signs of a desired well; a man frightened in the darkness of the night would see a ghost or bandit even at the slightest signs from his senses, according to his previous pre-established dispositions and actual expectations.

If an anecdote be permitted, the tale of the young man who ventured to go alone to a cemetery at midnight, whose coat caught on a spike near a solitary grave, and who died of terror imagining himself captured by a ghost, seems to be one of many illustrations of the general truth.

What is here implied is that in deep emotions the anticipation of perception exists to such an extent that even the slightest sense-data which have any connection with expected perception, are sufficient to create this perception.

To enumerate all the cases would be quite unnecessary, so I shall limit myself to a few striking examples corresponding to the well-known emotions. Each of such emotions creates the illusion of a perception.

If we take love as an example, we may see many manifestations of the same phenomenon. A man deeply in love, missing his beloved, would be inclined to see her everywhere, even though he knows that her appearance in that place is impossible. Suppose he sees from afar the figure of a woman similar to her, his heart begins to beat harder, and mixed feelings of joy and surprise possess him before he is able to control himself and to realise painfully that the person whom he sees could not be the woman about whom he dreams.

A man who is animated by sexual desire is able to conjure the shape of a woman from a distant lamp post or letter box.

A man who is hungry would take anything for food which resembles even slightly some particular food by its shape or colour.

Usually we attribute all such phenomena in current life to imagination, but it is quite arbitrary and due to the great difficulty of separating imagination from perception. Even if after a minute of reflection a man is inclined to treat his own illusion as a phantom of imagination, nevertheless in the very act of experiencing it he felt just the same as he feels

when he has a perception. There is no difference of nature, his belief is the same, and so also is the adaptation of his body.

A man who has the illusion that he sees a piece of bread when he is hungry, has the same motor adaptation as if he saw real bread. The saliva flows to his mouth, he moves his tongue as if he masticated real bread, and there is a readiness in all his organism to reach out to the object which he considers to be a piece of bread, able to satisfy his hunger. The same reactions would appear in a similar situation where there was no illusion, but real bread.

This is clearly expressed by William James, when he talks about hallucination: "A hallucination is a strictly sensational form of consciousness as good and true a sensation as if there were a real object there. The object happens not to be there, that is all."<sup>2</sup>

The psychological "reality" of hallucination may sometimes involve more than one sense even among normal people who are under unusual emotional stress. An example of such a kind of hallucination is quoted by William James.<sup>3</sup> The relation runs as follows:

On the day above mentioned, Oct. 30, 1886, I was in ..., where I was teaching. I had performed my regular routine work for the day, and was sitting in my room working out trigonometrical formulae. I was expecting every day to hear of the confinement of my wife and naturally my thoughts for some time had been more or less with her. She was, by the way, in B., some fifty miles from me.

At the same time, however, neither she nor the expected event was in my mind; as I said, I was working out trigonometry the entire evening. About eleven o'clock, as I sat there buried in sines, cosines, tangents, cotangents, secants and cosecants. I felt very distinctly upon my left shoulder a touch, and a slight shake, as if somebody had tried to attract my attention by other means and failed. Without rising I turned my head, and there between me and the door stood my wife, dressed exactly as I last saw her, some five weeks before. As I turned she said: "It is a little Herman: he has come." Something more was said, but this is the only sentence I can recall. To make sure that I was not asleep and dreaming, I rose from the chair, pinched myself and walked towards the figure, which disappeared immediately as I rose. I can give no information as to the length of time occupied by this episode, but I had known I was awake, in my usual good health. The touch was very distinct, the figure was absolutely perfect, stood about three feet from the door, which was closed, and had not been opened during the evening. The sound of the voice was unmistakable, and I should have recognised it as my wife's voice even if I had not turned and had not seen the figure at all. The tone was conversational, just as if she would have said the same words had she been actually standing there.

In regard to myself, I would say, as I have already intimated, I was in my usual good health; I had not been sick before, nor was I after the occurrence, not so much as a headache having afflicted me.

Shortly after the experience above described, I retired for the night and, as I usually do, slept quietly until morning. I did not speculate particularly about the strange appearance of the night before, and though I thought of it some, I did not tell anybody. The

<sup>2</sup> *Ibid.*, pp. 118–119.

<sup>3</sup> *Ibid.*

following morning I rose, not conscious of having dreamed of anything, but I was very firmly impressed with the idea that there was something for me at the telegraph office. I tried to throw off the impression above noted. I walked away from the telegraph-office. As I proceeded, however, the preoccupation became a conviction, and I actually turned about and went to the very place I had resolved not to visit, the telegraph office. The first person I saw on arriving at the said office was the telegraph operator, who being on terms of intimacy with me, remarked: "Hello, papa I've got a telegram for you." The telegram announced the birth of a boy, weighing nine pounds, and that all were doing well. Now then, I have no theory at all about the events narrated above; I never had any such experience before nor since: I am no believer in spiritualism, am not in the least superstitious, know very little about "thought-transference," "unconscious cerebration," etc., but I am absolutely certain about what I have tried to relate.

In regard to the remark which I heard, "It is a little Herman," etc., I would add that we had previously decided to call the child, if a boy, Herman—my own name, by the way.

In this somewhat lengthy quotation, which, related with a naiveté that is all the stronger guarantee of its authenticity, we see that the expectation of the event created the simultaneous illusion of the sense of touch, the sense of sight, and that of hearing. If we compare this with many of our ordinary perceptions, or rather, instinctive inferences from the perceptually given reality, which are considered by us as true perceptions, the psychological reality is on the side of hallucination. Those perceptions themselves are very often based on one sense only instead of many as, for instance, were we to hear the voices of our parents in a dark room, it would be sufficient to assure us of their presence without further confirmation by other senses.

The strikingly active character of perception occurs so evidently in every case of great emotional stress, that we might be inclined to underestimate the same phenomenon in the case of usual perceptions, attributing this active character rather to unusual circumstances of emotional life.

It would however, be a great mistake to consider that this activity of perception reveals itself exclusively in cases of great emotional stirring.

Every perception is due more to our anticipated activity than to the sense-data in the proper meaning of this word.

If there are many false perceptions due mainly to emotion, there are also those due to habit,<sup>4</sup> or to both habit and emotion. How many times does it happen that we are mistaken concerning perception even without the agency of any emotional stimulus, when we interpret, with all our readiness to act upon objects, the few sense-data we have, trying to fill in those that are lacking.

One might, for instance, hear the dripping of water in the darkness;

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<sup>4</sup> Dewey admits this influence of habit in the forming of false perceptions in these words: "Immediate, seemingly instinctive feeling of the direction and end of various lines of behaviour is in reality the feeling of habits working below direct consciousness. The psychology of illusions of perception is full of illustrations of the distortion introduced by habit into the observation of objects." (*Human Nature and Conduct*, p. 32).

one would assume it was raining, and without any further investigation put on a mackintosh when going out, though it may later transpire that the sound of water was due to the open taps in the bathroom. If a clerk is accustomed to seeing his superior sitting at a certain desk in the office, he may start to talk on entering the room, as he usually does, only after a while realising that someone else now occupies the desk.

Many such situations where recognition does not follow immediately, are reproduced on the stage or in film for their comic effects.

A very typical example of a false perception due rather to the first factor is given us by the American humourist, Mark Twain, in his short story where he describes people afraid of thunderstorms, who, hearing rumbling sounds, take all necessary and unnecessary precautions against a thunderbolt, locking all doors and shutters of the house, and only later discovering that their terror was caused by military manoeuvres in the neighbourhood.

A similar story is told by the ancient Roman writer, Petronius, in his *Feast of Trimalchion*, where a fire-brigade rushes to the rescue, thinking that the house must be on fire since the noisy celebration of the drunkards seems to them to be the voices of people in distress.

One might object that in this latter case the mistake of the fire-brigade is more due to a faulty inference than a false perception, but it is not easy to draw a clear distinction between perception and a rudimentary kind of thinking when we are concerned with human behaviour, as in this case and many others.

It is possible that the mistake could be caused by an incorrect inference which we could translate into a traditional form of syllogism such as this:

Where there is a great noise, there is usually a fire.

There is a great noise,

Ergo there is a fire.

But it is more probable that they went to the rescue without any reasoning of this kind, just because they had been used to adapting themselves in a case of emergency to situations, which by specific perceptual qualities aroused in them the active attitude of professional men, without any need for reasoning or for special investigations, as happens very often in everyday life. But even if there were some inferences of such a kind it does not exclude the existence of perception; for many psychologists claim perception to be an unconscious inference from the sense-data. Even if it were so, it would not invalidate our statement about the active character of perception.

Examples from the hallucinations and illusions of insane people and of normal people point out these important characteristics of perception: its active character, and its formation in anticipation of sense-data, which confirm or deny it afterwards. For the creation of a perception, only a very slight basis of sense-data is sufficient, because perception is more the product of our previous activity than the direct result of the given sense-data, which it organises according to the desires and purposes of our activity.

4. IS THE ANTICIPATION OF SENSE-DATA IN PERCEPTION GENERAL, OR DOES IT OCCUR IN PARTICULAR CASES ONLY?

What remains to be analysed is (1) whether the example of perception characterised by the anticipation of sense-data are not of unusual type and for this reason not typical of perception in general; and (2) of what kind is this activity which forms our perception, and in particular is it similar or the same as the activity felt as movements of our body?

Considering the first, we would stress this point, that all mental facts are due to our human nature, which is determined by the general conditions of life: environment and our biological structure, and from whence arise the possibilities of our satisfying needs common to all human beings.

If one drinks from a glass and another from a silver cup, it does not change the fact that they both drink.

Thus it is in the case of perception: all men perceive, for without perceiving they could not live; some of these perceptions are more appropriate to our needs, some of them less, but the process is the same.

We see that in some of these perceptions the active character of perception is more obvious than in others. We see this especially in the cases of false perceptions: in the hallucinations of the insane or in the mistakes of a normal person. And this active character is very evident in cases of false perceptions due to a great disparity between the anticipated perception and the sense-data. But if activity is a characteristic of every perception we should see it not only in cases of false perceptions, but also in true ones. And if we do not see this active character so clearly in the case of normal perception, we must account for this and explain it, if our general statement about the active character of perception is to hold good.

As we know from everyday life normal perceptions correspond so exactly to the external world that to average people it would seem sheer nonsense to talk about the active character of such perceptions, and it would be most repugnant to them to hear them compared in this respect to hallucinations, which are held in great contempt because of their misleading and pernicious effects in practical life.

If we keep in mind our general principle of activity and anticipation of sense-data in perception we shall have to explain not so much why there are false perceptions, as why there are true ones.

In order to do this, we shall proceed by trying to isolate the factor to which is due the activity of perception in the case of false perception, and then we shall try to find similar manifestations of activity, if there are any, in true perceptions, and to explain the unconsciousness of this activity in normal true perceptions, where the active character of perception in general does not appear so obviously and strikingly as in the false ones.

Let us return to the familiar case of false perception in delusion and especially in the mania of self-importance. Someone who imagines himself a king takes the yellow straw on his bed for the gold appertaining to his royal insignia.

Delusion as such is not only characterised by false perceptions, it is characterised by faulty thinking as well.

The man in our case will be able to consider, for instance, the silence of the doctor who examines him as a manifestation of the due respect of his royal prerogatives, and to treat his confinement in the asylum as the result of persecution by his powerful enemies. He would be inclined in fact, to interpret everything according to preconceived ideas, centralised in his main idea of his royal character which satisfies his emotional need of self-assertion and self-importance. With everything given in his daily experience he will deal in a double way, as it suits his unconscious need: either he will try to connect it with his main idea, or, if this is impossible, he will discard that from his consciousness and eliminate it as not existent.

As he does in his reasoning so will he do in his perceiving: some sense-data he will accept; others, as unsuitable for his unconscious need, he will eliminate and try to forget. If he has a straw which he considers to be gold, he discards certain straw qualities, as for instance, its small weight, but he would accept willingly everything which reminds him of gold, i.e. the yellow colour and shining quality. If anyone, however, were to draw his attention to the fact that what he considers gold is much lighter than gold, he would find justification for his inconsistency in the built up *ad hoc* theory that his gold is lighter than usual, because it has been invented by his scientists specially for him, and is therefore of a better quality.

As we see then, all his pre-established attitudes are responsible for the creation of his false perception, which is due to his urgent need to confirm by perceptually given experience all the system of his ideas, for on this confirmation depends all the delusionary system of emotions and motor reactions.

The work of his attention in dealing with sense-data might be compared to trial and error in the motor sphere; he tries to "catch" those sensations only which suit his unconscious purpose, rejecting others as unsuitable. This activity in him is developed to such a point that it does not allow him to see objects as we see them—according to their "objective" qualities.

Now we come to another point why in our usual true perceptions we do not see the same "subjective" kind of activity and seem rather to accept the "objective" qualities of things as we see them as appertaining to the world independent of our perception, which seems more as given to us than constructed by our inner activity.

What we call objective qualities of things are due to the manifold activity of the human race, and emerged thanks to our numerous trials and errors which shaped our knowledge of the external world. We do not know what the things are in themselves, but we know what to expect from them according to our various behaviours; they contain for us various potentialities of action directed to them.

In general, this expectation is so much in accord with the expected result that we are inclined to think that we discover their objective nature.

That is so, because our reactions towards the objects have been shaped by many experiences of which only the successful ones have been fixed in our habits, and have inserted themselves into the system of all our reactions.

For this reason mistakes are in most cases comparatively rare. If I see an aspect of a chair, for instance, two legs of wood and part of a seat, it is enough not only for me to form a perception of the whole chair, but also enough for me to decide to sit in it. (We find a very similar example in Whitehead's *Symbolism*.)<sup>5</sup>

All our previous experiences concerning a chair are related to its various aspects, and it suffices to have merely a sign from the senses of a particular kind to rely on them and adopt appropriate behaviour, which with every repetition fixes more firmly the relation of this sign to the whole perceptual object. The formation of perception resembles, I may say in this respect, a hypothesis which, applied successfully many times, seems to loose with every successful attempt more and more of its hypothetical character, and becomes more like a passive reproduction of reality. Perception gains this "objective" character with every one of our actions towards objects, because every action supplies more sense-data, which confirm us in our "hypothesis" of relating the first sign to all our appropriate reactions to the object.

But even in our normal perceptions we can sometimes see their "hypothetical character" — it happens when we are facing something comparatively new, not knowing which reaction would be the most appropriate.

We take such an object if we can, in our hands, try to manipulate it in many ways in order to discover its various qualities which would be useful in future actions.

We can do the same in the case of a new perceptual situation which excites our interest. When we find ourselves in new surroundings we examine them with our eyes from the point of view of many eventual actions, especially those towards which we have the strongest dispositions.

As the Polish psychologist Władysław Witwicki<sup>6</sup> points out, a forest will arouse quite different reactions in a poet and in a businessman. The first will admire the beauty of the forest, while the second will examine how profitable it would be to cut the wood. In our sense, it would mean that a poet would look, for instance, for the place from which he would have the best view of the beauty of nature, while a businessman will see all the practical sides of the eventual cutting of the wood, but both of them, even in the first glimpse, will examine the possibilities of future actions. This anticipation of possible actions is immanent in every

<sup>5</sup> See Supplement, Note 14.

<sup>6</sup> W. Witwicki, *Psychologia*, Vol. II, Warszawa 1925.

perception; it gives it its proper emotional colour, it makes us feel in some surroundings depressed, in others elated, according to their suggestive power directing us towards eventual activities.

##### 5. IS THE ACTIVE CHARACTER OF PERCEPTION DUE TO A MOTOR ORIGIN?

The second question: of what kind is this activity which forms our perception, is not so easy to answer at once.

I am afraid I must start with a recapitulation of well-known facts. Perception is most often started by the visual stimulus. The sense-data provided by this stimulus form the necessary link between our previous experiences in which the same visual data had been given and this new experience which constitutes our actual perception.

There is however an essential difference between the sense-data taken apart from perception and perception itself. Perception gives us knowledge of the objects, when the sense-data could give by themselves (if artificially isolated) the sensation of the sense of sight.

This sensation however, never appears alone in practice. Even if we look at the patch of yellow colour, we have not only the sensation of yellow, but at the same time the perception of a scrap of paper on which this colour is presented to us.

This feeling of the totality of our perception cannot be due merely to our sense of sight, it is due to this sense educated in some way by all our previous experiences. Now, if we ask ourselves of what kind are these experiences, we should first realise in what conditions we can have any visual sensation.

The answer to this is that we can have visual sensations in two ways: either when something moves before our eyes while we are immobile, or when we move ourselves.

Let us first consider the second case. The change of position of our body makes it easier for us to receive the new sensation. This change of position was of course necessitated by our practical purposes, and occurs more often than the first case.

Therefore it seems to me that I must again arrive at the conclusion that the realisation of movements of our body was the first factor in the creation of what we call our perception.

This does not necessarily mean, of course, that every perception is accompanied by an actual feeling of a kinaesthetic kind at the present stage of development.

There are two kinds of movement: voluntary and automatic, and only the first kind is accompanied to some extent by the feeling of effort, while the second kind is only observed by us in the same way as other changes in the external world, that is, by their effects.

All perceptions in their primordial stage were probably accompanied by

the feeling of effort (supposing that even automatic movements were voluntary at the beginning), though this feeling is not necessarily preserved till now, when our perception has itself, so to speak, become more or less automatic, and has a tendency to shorten itself into a purely visual process.

Now we have to return to our first case when we remain immobile, and the objects move before our eyes. We should ask whether in that case our perception possesses any feeling of movements, i.e. if the perceiving of moving objects may involve the feeling of our own movements, i.e. kinaesthetic experience.

Direct introspective observation seems to indicate that this is so, but how is this possible? It involves us in a great problem: what is movement in the external world, and how are we conscious of it?

When we see any "moving" object, for instance a horse or a car, we do not hesitate in everyday life to attribute movement to it as an integral part or intrinsic quality, basing our attribution on a general assumption that there is such a thing as movement — absolute movement in the Newtonian sense of the word.

However modern physics disowns such a notion. According to the theory of Einstein every movement is relative, because what we consider as moving in relation to one point, is immobile in relation to another. If we see a horse moving on the background of a forest, the movement from a physical point of view could be attributed as properly to the forest as to the horse, according to which of them we prefer to treat as immobile. From this it follows that there was not any necessity for us to treat the horse rather than the forest as moving.

If there is not any physical necessity, there must have been a psychological one. We should probably not have any idea of movement if we did not the feeling of effort when we effectuate the movements of our own body. This feeling connected with the results of our activity, presented to us as sense-data mostly of the visual kind, constitutes our idea of our own movement.

The same feeling applied by some kind of analogy of anthropomorphical character to the other objects gives us an idea of their movements, which is nothing but an extension of our own feeling by the aid of sympathetic identification of ourselves with other creatures (especially other human beings and animals), as we tried to explain already in the Introduction.

If then, the idea of a movement of moving bodies could be explained on this ground, it means that in the first place this idea originated in our own feeling of movement, and from that it follows that our first question, "What was the origin of our perception when we were immobile and looking at the moving objects?" is reduced to the second one, "What is the origin of our perception when we move our bodies?" which I have already tried to answer.

Now we come to quite a different question, which is whether any

feeling of movement still exists in our actual perception. Even if the objective reference originated in our feeling of movement it does not mean that every perception must contain such a feeling at our present stage of development. The reasons for this are that the feeling of movement tends to disappear when the movement is repeated many times and exercised for a long period of time. As we suppose that perception originated from the feeling of movement at the time of the origin of our race, or even earlier, it is quite possible that the actual feeling of movement could disappear, leaving only the traces which revive every time we return to our old ancestral experiences.

#### 6. THE PERCEPTIONS WHICH REVIVE THE MOTOR ACTIVITY

This occurs when we are in a state of deep emotion, which causes us to descend into the depths of our nature and to arouse our dormant energy, that of the depths of our unconscious life.

In such a state we are inclined to see movement even in perceiving inanimate objects. Very characteristic in this respect are the pictures of the surrealists, especially those of Picasso and Makowski. Even the most ordinary objects represented in these pictures as "nature work" seem to be invested with a new life full of movement and emotion. But this bringing to movement of nature is at the same time inseparable from the anthropomorphical outlook upon things. It seems to be the law which even the greatest artists cannot escape; that anyone who goes to the depths of unconsciousness revives in himself not only the greater motor activity in perceiving objects, but all the anthropomorphical attitudes which were characteristic of the primitive mind.

The great artists seem to emphasise only for artistic purposes what is the natural tendency in every one of us, when the strata of our unconscious are deeply stirred by emotions.

How many times, for instance, when we are frightened or uneasy, does everything seem to revive, and the objects to which we are used in everyday life seem to get a new unusual life, especially in the evening or moonlight.

On this idea is based one of the famous fables of Andersen in which he tells us how in the night the furniture in a room leads its own mysterious life. Innumerable are the poems written about love in which the roses and the stars sing in praise of an eternal charm.

But it is especially so of those anthropomorphic ideas which are connected with nature itself; everything in their nature is brought of life by artists and animated by movements, particularly those manifestations of nature which thousands of years ago were considered by our ancestors as gods showing their faces upon the earth.

Moon, sun, stars, sea and river are the everlasting themes which have such a great suggestive power of life that even in our civilisation artists

compare them, in semi-conscious metaphors, giving them in this way the greatest degree of psychological reality and charm; and the anthropomorphic element is always the one that is kinaesthetically coloured.

The examples are so numerous from all the literature of the world that I must limit myself to a few examples and quotations.

This beautiful poem by Shelley<sup>7</sup> is one of many illustrations:

*To the Moon.* (fragments)

And like a dying lady, lean and pale,  
Who totters forth, wrapped in a gauzy veil,  
Out of her chamber, led by the insane  
And feeble wandering of her fading brain,  
The moon arose up in the murky East,  
A white and shapeless mass —  
Art thou pale for weariness  
Of climbing heaven and gazing on the earth,  
Wandering companionless  
Among the stars that have a different birth,  
And ever changing, like a joyless eye  
That finds no object worth its constancy?

The motor expressions describing the moon in this poem are the following: "totters forth", "wrapped", "led", "wandering", "arose", "climbing", "gazing", "finds"...

Another example from Joseph Conrad<sup>8</sup> is the description of the Western Wind on the sea. It is a fully developed metaphor, like that of Shelley, and it is difficult to discriminate where artistic purpose prevails, where the echo of real feelings, since the origin of the whole is in the ancestral unconsciousness.

Heralded by the increasing fierceness of the squalls, sometimes by a faint flash of lightning like the signal of a lighted torch waved far away behind the clouds, the shift of wind comes at last, the crucial moment of the change from the brooding and veiled violence of the south-west gale to the sparkling, flashing, cutting, clear-eyed anger of the King's north-westerly mood. You behold another phase of this passion, a fury bejewelled with stars mayhap bearing the crescent of the moon on its brow, shaking the last vestiges of its torn cloud-mantle in inky-black squalls, with hail and sleet descending like showers of crystals and pearls, bounding off the spars, drumming on the soils, pattering on the oilskin coats, whitening the decks of homebound ships.

Faint, ruddy flashes of lightning flicker in the starlight upon the mastheads.

A chilly blast hums in the taut rigging, causing the ship to tremble to her very keel, and the soaked men on her deck shiver in their wet clothes to the very marrow of their bones. Before one squall has flown over to sink in the eastern-board, the edge of another peeps up already above the western horizon, racing up swift, shapeless like a black bag full of frozen water ready to burst over your devoted head.

The temper of the ruler of the ocean has changed. Each gust of the clouded mood that seemed warmed by the heat of a heart flaming with anger has its counterpart in the chilly blast that seems blown from a breast turned to ice with a sudden revulsion of feeling.

<sup>7</sup> *Poems from Shelley*, selected by Olwen W. Campbell, London 1925.

<sup>8</sup> J. Conrad, "Rulers of East and West" in *The Mirror of the Sea*, 3rd ed., pp. 134-135.

Instead of blinding your eyes and crushing your soul with a terrible apparatus of cloud and mists and seas and rain, the King of the West turns his power to contemptuous pelting of your back with icicles, to making your weary eyes water as if in grief and your worn out carcase quake pitifully. But each mood of the great autocrat has its own greatness, and each is hard to bear. Only the north-west phase of that mighty display is not demoralising to the same extent, because between the hail and sleet squalls of a north-westerly gale one can see a long way ahead.

It would be quite useless to point out all the motor expressions in this description of the wind; I should like to point to something else instead: the fact that a phenomenon of nature like wind is animated by the feelings of the writer, involves somehow the subordinated role of other objects or phenomena which are considered merely as the means to its anthropomorphised activity. For instance, the moon, considered as a living being by Shelley, in the description of Conrad plays only the part of an object in the described activity of the Western Wind (the wind "bearing the crescent of the moon on its brow"). It proves once more the truth that we perceive objects according to their emotional value, and that in the act of perceiving we are actively following our emotional inclination.

Let us finish these few examples from literature by a description of wind in modern poetry. Here is a poem by Andrew Young, called *A Windy Day*:<sup>9</sup>

*A Windy Day.*

This wind brings all dead things to life,  
Branches that lash the air like whips  
And dead leaves rolling in a hurry  
Or peering in a rabbits' bury  
Or trying to push down a tree;  
Gates that fly open to the wind  
And close again behind,  
And fields that are a flowing sea  
And make the cattle look like ships;  
Straw glistening and stiff  
Lying on air as on a shalf  
And pond that leaps to leave itself;  
And feathers too that rise and float,  
Each feather changed into a bird,  
And line-hung sheets that crack and strain;  
Even the sun-greened coat,  
That through so many winds has served,  
The scarecrow struggles to put on again.

All things animated by the wind seem to be alive in this poem, the movement creating this illusion of life which was so typical of humanity in the earlier periods.

In the works of anthropologists we find innumerable examples of this

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<sup>9</sup> *A New Anthology of Modern Verse, 1920-40*, p. 213. Chosen by C. Day Lewis and L. A. G. Strong.

animation of the phenomena of nature, giving rise to great myths of anthropomorphic character which are wide-spread through all humanity. The history of ancient religions provides so many examples of this tendency of attributing the manifestations of nature to gods, that I limit myself to one of many examples taken from Sir James Frazer. Earthquakes are from immemorable times attributed to the action of gods, conceived sometimes in an extremely primitive way. Here is the account given by Sir J. G. Frazer.

The people of Timor, in the East Indies, think that the earth rests on the shoulder of a mighty giant, and that when he is weary of bearing it on one shoulder, he shifts it to the other, and so causes the ground to quake. At such times, accordingly, they all shout at the top of their voices to let him know that there are still people on the earth; for otherwise they fear lest, impatient of his burden, he might tip it into the sea, ... When the Balinese and the Sundaese feel an earthquake they cry out, "Still alive" ... to acquaint the earth-shaking god or giant with their existence. The natives of Leti, Moa and Lakor, islands in the Indian Archipelago, imagine that earthquakes are caused by Grandmother Earth in order to ascertain whether her descendents are still to the fore. So they make loud noises for the purpose of satisfying her grandmotherly solicitude. The Tami of German New Guinea ascribe earthquakes to a certain old Panku who sits under a great rock; when he stirs, the earth quakes. If the shock lasts a long time they beat on the ground with palm branches, saying, "You down there: Easy a little! We men are still here." The Shans of Burma are taught by Buddhist monks that under the world there sleeps a great fish with his tail in his mouth, but sometimes he wakes, bites his tail, and quivering with pain causes the ground to quiver and shake likewise.<sup>10</sup>

From these and many other examples given by Frazer we see that the causes of earthquakes among primitive races are very different, though of a similar kind, according to their systems of beliefs; but in every one of these cases the perception of earthquake is interpreted in anthropomorphic ways, as motor experience projected on imaginary gods.

It is not so much a case of myths influencing the interpretation of perception, but the motor character of perception which creates those myths out of the necessity for reasonable justification of the processes perceived in a motor way, where there is no visible agency to which to ascribe the activity contained in perception.

The traces of this old anthropomorphism, and the motor activity connected with it, are preserved even now in European languages and the forms of grammar, I shall mention only the masculine and feminine articles used to denominate inanimate objects in many modern languages (French, Polish and others), and which is preserved in English for such things as the sun (he), the moon (she), ship (she), rivers, the sea, and so on.

The revival of motor activity is especially obvious in the works of artists and in the relics of ancient mentality, but it appears also, as is pointed out by Stout, in the observation of external movements and the perception of geometrical figures.

<sup>10</sup> Sir J. G. Frazer, *The Golden Bough*, pt. IV: *Adonis - a Study in the History of Oriental Religion*, pp. 162-163.

The sight of external movement occasions the revival of corresponding motor experiences in the subject who is attending to it. This motor revival forms an integral part of the perceptual complex, not of course a distant idea. The conditions of pleasure and displeasure which apply to the motor process in general, apply also to the reproduced motor process involved in attending to a moving object. When it takes place with special ease and facility of adjustment, we call the external movement that excites it "graceful". But it is not merely the perception of movement that involves the revival of motor activity on the part of the subject.

A slender column supporting an apparently disproportionate weight has a disagreeable effect on the spectator. It is as if he himself were supporting a burden to which he is not equal. The mere thought of Atlas bearing up the heavens on his shoulders makes us uncomfortable. The pleasing or unpleasing effect of geometrical forms is also to a large extent due to the motor activity involved in perceiving them. In part, this motor activity consists in actual movements, such as those of the eye following an outline; but in a great measure it arises from our mode of apprehending lines and surfaces as if they were themselves active.

We speak of a column "raising itself" into the air; of a path "winding"; and so on.

Language of this kind marks a fundamental feature of perceptual process.

The direction of lines and surfaces is apprehended as if it were a direction which the lines and surfaces themselves actively take and maintain. Hence in apprehending them there is a sympathetic revival of motor activity in us, which may be pleasing or unpleasing. When the geometrical outline is so irregular in its course as to defeat pre-adjustments on our part, and to demand abrupt changes for which we are unprepared, it is disagreeable. On the other hand, a gently flowing curve is agreeable, of course, if the figure is too simple it will be almost neutral in feeling-tone, but when it is at once complex and graceful, it may give rise to considerable pleasure. Marked displeasure occurs when sufficient regularity is present to create a pre-adjustment which other conditions disappoint. The experience is also unpleasant when owing to the simplicity or monotonous repetition of the object, attention is not sufficiently occupied. In this case an active tendency is thwarted because it does not find adequate material for its exercise. Of course, what is too simple or too complex for one person may not be too simple or too complex for another.<sup>11</sup>

Similar revival of motor activity according to Croce occurs in our appreciation of the objects of art.<sup>12</sup>

This revival of motor activity is especially striking as we pointed out, in the deep emotional life and particularly among neurotic people. Such people sometimes feel a strong dislike for someone whom they know only slightly, and with great difficulty restrain within themselves certain instinctive motor reactions; such as scratching their face or beating them. In the case of obsession for instance, the mere sight of a knife suggests killing, and subjects suffering from such an obsession are horrified by their motor association, even if they have not the slightest desire to kill anybody. Some very religious people, at the sight of holy pictures or figures, are tempted to knock them from the altar, or seeing a collection made in the church, are too frightened to steal any money from the plate.

In many phobias the same happens. Someone at the sight of a precipice has the impression that it is only thanks to the effort of his voluntary

<sup>11</sup> Stout, *Manual of Psychology*, ed. 1901, pp. 290-291.

<sup>12</sup> See Supplement.

will that he does not throw himself into its depths. People suffering from claustrophobia do not attend any public meeting, because the sight of a big crowd suggests to them the idea of being immediately crushed. But even in our most common experiences it is difficult for a lover at the sight of the face of his beloved to refrain from kissing her, or at the sight of his enemy to refrain from attacking him.

Under deep emotional stresses these natural reactions directed to motor discharge are so accentuated that even what are otherwise the most indifferent objects engage our feelings as if they were our personal friends or enemies, and suggest the corresponding motor attitude.

Here is the lively scene from De Quincey's, *The Confessions of an English Opium-Eater*, describing his last moment before he runs away from his school in search of adventure.

I shed tears as I looked round on the chair, hearth, writing table, and other familiar objects, knowing too certainly that I looked upon them for the last time. Whilst I write this, it is nineteen years ago; and yet, at this moment, I see, as if it were yesterday, the lineaments and expressions of the object on which I fixed my parting gaze. It was the picture of a lovely lady, which hung over the mantle piece; the eyes and mouth of which were so beautiful, so radiant with divine tranquility, that I had a thousand times laid down my pen, or my book, to gather consolation from it, as a devotee from his patron saint. Whilst I was yet gazing upon it, the deep tones of the old church clock proclaimed that it was six o'clock. I went up to the picture, kissed it, then gently walked out and closed the door for ever!<sup>13</sup>

In this description we see that the emotional stress reached such a pitch that the author not only animated the objects with his life of feelings, but gave outlet to his reaction, actually kissing the picture.

In idolatry the inanimate objects seem to play the part of the outlet for motor reactions as we know from the writings of the anthropologists who describe, for instance, the very widespread custom in China of beating the idols when they do not answer favourably to a request for goods.

This kind of reaction seems to be only the natural result of the motor character of perception.

#### SUPPLEMENT

William James considers that so called "idea-motor action" is typical of all actions and that the exceptions to this rule are due to "an antagonistic representation present simultaneously to the mind".

Answering the question: "Is the bare idea of a movement's sensible effects its sufficient mental cue, or must there be an additional mental antecedent, in the shape of a fiat, decision, consent, volitional mandate, or other synonymous phenomenon of consciousness, before the movement can follow?"<sup>14</sup> he says:

<sup>13</sup> De Quincey T., *The Confessions of an English Opium-Eater*, Prefatory notice, XIX.

<sup>14</sup> James, *Principles of Psychology*, Vol. II, p. 522.

I answer: Sometimes the bare idea is sufficient, but sometimes an additional element, in the shape of a fiat, mandate, or express consent, has to intervene and precede the movement. The cases without fiat constitute the more fundamental, because the more simple, variety. The others involve a special complication ... Whenever movement follows unhesitatingly and immediately the notion in the mind, we have ideo-motor action. We are then aware of nothing between the conception and the execution. All sorts of neuro-muscular processes come between, of course, but we know absolutely nothing of them. We think the act, and it is done; and that is all that introspection tells us of the matter.<sup>15</sup>

Pointing out that there is not any necessity, neither is there introspective evidence for the feeling of innervation, claimed by the other authors, he says that: "An anticipatory image ... of the sensorial consequences of a movement, plus (on certain occasions) the fiat that these consequences shall become actual, is the only psychic state which introspection lets us discern as the fore-runner of our voluntary acts."

James includes among these "anticipatory images of the sensorial consequences of a movement" the impressions which he calls after Dr. Bastian, "Kinaesthetic impressions", the impressions coming up from the parts which are actually moved. He considers that the anticipation of all these impressions is a sufficient condition for achieving a movement.

All these impressions, or rather, as James calls them, motor ideas, originated according to him as the result of many movements which were involuntary.

Even if we agree with James that voluntary movements are not primary functions of our organism, we disagree with him that they originated from unconscious movements.

On the contrary, we believe the every movement was "conscious" in the vaguest sense of this word, being "felt" whenever it met resistance, and that the reviving of these "felt" movements lies at the basis of voluntary movements.

This primary experience we call "pure motor experience" as it does not yet imply any presentation which is necessary when we make a voluntary movements. This "pure motor experience" is, in our belief, the prototype of all voluntary movements. This "pure motor experience" belongs to the stage when it is impossible to talk about "consciousness" or "unconsciousness", but is "felt" and not automatic. The proof that it could not be "automatic" is that through these primary "pure motor experiences" we achieved choices (or rather our ancestors in the animal stage of life), according to the resistance which was met.

If it had been automatic we could not have achieved these choices in our "trial and error" attempts as automatic actions consist in the repetition of the same. On the other hand, it could not be "voluntary" as we had not yet all the mental equipment necessary in order to represent to ourselves a movement.

<sup>15</sup> *Ibid.*, p. 501.

Similarly as this primary "pure motor experience" has a dynamic character expressing our needs (or the lack of balance in the organism), so our voluntary movements possess the similar dynamics. The anticipation of the sense-data in voluntary movements is a part of the revival of the feeling of being active in a concrete situation.

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