

# THE UNITY OF THE SENSES

by Erich M. von Hornbostel (1927)

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## I.

For the deaf there is no music. The obvious must always be suspect; we should question it - at least a little, tentatively - asking, Why is it so ?

A dancer had a dance, "The Lily". Her humanity vanished in the high waving chalice of her veil, a deep violet faded away in spirals, a dazzling white rose up expanding indefinitely. The noises of the suburban music-hall could not spoil this pure music.

Figurative speech ? Transferred meaning ? I do not pretend to have seen tones or heard colours. I am not deaf, and am fairly musical; I know what is really meant by "music", and was thinking of this very meaning. To call the dolphin a fish may offend the zoologist, but it is no metaphor. A certain negro tribe has a special word for "see"; but only one general word for "hear", "touch", "smell", and "taste". It matters little through which sense I realize that in the dark I have blundered into a pig-sty. In French "*sentir*" means to smell, to touch, and to feel, all together. A child who wants a "bright" trumpet rather than one with a dull tone, spontaneously returns to the original meaning of *bright*, which was used only of sound as late as the period of Middle High German. For Germans this use of *bright* now seems "transferred", so natural was its carrying over to light. Nevertheless, everybody knows what "brightness" of sound means - not something corresponding to light, but the same thing.

Here is a tone, here are a number of different grey papers from black to white; choose the one which is as bright as the tone This one ? (Indignantly) "Too dark!" This one ? "Too bright!" That one ? "Still too bright!" And so on. It can be done quite easily and with great precision; and everyone, except the colour-blind, can find a grey to match the tone. Furthermore,

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anyone can find on the piano that tone which sounds as bright as lilac smells. (Generally he thinks the task nonsense at first, but, if he can be persuaded to deal with such nonsense at all, it goes very well.)

So there is a sensuous which is not limited to one single sense. Indeed, looking more closely, the apparent exception becomes the rule, and one must search in order to find the private property of any one sense. It is true that these proprietors themselves are different personalities; the Seen is, as such, different from the Heard; and this is a difference which cannot be made clear to the blind

and the deaf. But all the senses have not such clear-cut individualities. There are very few people who know that it is not with the tongue or palate that they taste the aroma of a pineapple, but that they smell it, and that it will disappear if the nostrils are closed. The "five senses" are still proverbial, for it is only in the last few decades that science has split up the skin's sense of "feeling" into a greater number of senses. Warm and cold, however, still appear to us as directions on a single line, linked up by all the different grades of luke-warm and cool, and not as two different species, like seeing and hearing - and this in spite of their having two separate organs. With the finger-tips we can feel which of two vibrations is brighter and which darker, though an interval of only one whole tone lies between them; and an octave chord feels consonant on the skin in contrast to a seventh. Whether fishes hear as we do cannot be decided, though it is possible to train a shad to come in response to a whistle. The "hearing" of the skin, in spite of its relation to that of the ears, seems to call for quotation marks, because it is at the same time related to the pressure-sense. In this double relation of the vibration-sensation, we still feel in our own bodies how an originally single sense splits into two, which only become independent of one another in the course of evolution.

More advanced of all in their specialization are sight and hearing. And really, each of these two "highest" senses has something which belongs to it alone : to the eye, colours, which give variety to the world ; to the ear, the music of sounds and tones, a gift beyond life's necessities. Both are late acquisitions, still the least stable of all, and most easily exposed to attack and destruction. Many people - more than know it - are colour-blind or weak in colour-vision ; unmusical people are numberless and of all grades. What they lack, more or less, and what animals probably lack altogether, is that which distinguishes tones from other sounds, especially from noises; that which makes a tone so similar to its octave despite their different brightness; and makes the octaves harmonize in perfect consonance.

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Strange! It is just where eye and ear differ, that their connection has been sought. For colour, like pitch, changes with the wave-length : a fact which misled the physicists. (In reality there is a difference at this very point: brightness in hearing depends on frequency, while brightness in sight depends on amplitude.) Scriabine accompanies his *Prometheus* with colours, which—for him — correspond to the tones. Others would choose otherwise. More often, and with greater confidence, colours are ascribed to the vowels. Everyone who does this thinks his ascriptions the only natural and possible ones. I saw mother and daughter arguing furiously: "E is red!" "No, yellow!" But to both it seemed bright, clear, and sharp.

We pity the colour-blind and the tone-deaf: a world of nothing but greys seems dreary to us. Therefore we easily over-value the individual qualities, colour and tone, which belong to these spheres, and under-value the qualities which they have in common. And yet there is brightness without either colour or tone, but no colour or tone without brightness. He really would be a cripple who had these without brightness.

The painter Troost once papered a bedroom with dark blue velvet-paper. The walls were charmed away, the eye plunged with- out resistance into a soft, warm, embracing depth. That this depth happened to be blue did not of itself matter; but the blue tended to produce the same effect as the darkness and velvety gloss. Generally speaking, even for the perception of colour, not the colour itself—blue, yellow, or red—is the essential, but all the rest that reaches us by the eye as well as by other senses. When we want to describe this, names come quite easily from

everywhere, from the spheres where they happen to be used to-day, and we understand them because we are not using them in a context foreign to their true nature.

So there remains little which is unique to a single sense, and that only incidentally, and only, perhaps, in the case of the higher senses. Nevertheless, the sense which is used will leave its mark on the phenomenon. What is seen, heard, or touched, will, necessarily, we think, have an optical, acoustic, or tactile character. But even this is not necessary.

There are super-sensuous sense-perceptions. Movement can be seen, heard, or touched. It is not necessary, however—as every cinema-goer knows—that it should actually take place. An "apparent" movement, indistinguishable from a real movement springs forth from two pictures, sounds, or skin touches following one another at the right spatial and temporal intervals. Now, under certain circumstances, there are apparent movements, communicated

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through the eye, the ear, or the sense of touch, which, however possess none of the qualities of the seen, heard, or touched—indeed, nothing of any sensuous sphere. And yet they are movements' normal, and distinctly perceived—not ghosts. Once I dreamed: "It" rushed, raced, past me, around me, though I lay very quietly and neither saw, heard, nor felt anything. But never was a thing more manifest, more real to me, than this "storm-in-itself".

In ordinary life, it is true, we do not meet any "in-itself". A movement which we perceive is less real than a movement which we ourselves make. And it is difficult—custom can never quite stop it—not to participate, in some way or other, in perceived movement. And the more it "moves" us, "touches" us or "carries us away", the more difficult this is. Again, "movement of feelings", "course of thinking" are not metaphors, any more than "movement of the air" and "course of a race"; we simply say what we mean, and incidentally add the immediate specification (A comparison is only a comparison in so far as it limps; so far as it hits, it is a simple statement.) But even here the special meaning will not develop until later. The original meaning of a word does not appear from its different applications, but only comes out when the whole range of meanings is surveyed and the various nuances are seen as one. The whole out-growth must be gathered back into itself; only by such a condensation can we regain the pregnant germ. By cancelling out differences, on the other hand, we get nothing but the empty shell (the general concept of Logic).

That such abstract concepts do not occur in natural thinking is very characteristic of primitive people (it is characteristic of us to think this a fault in their intelligence). But this does not mean that primitive man perceives only the sensuous in the sensuous the perceptible in the perceptible, only experiences the casual in what he is experiencing thus, here, and now. In order to do this he would have to make abstractions from life, tear objective and subjective from one another, and let the stream of experience crystallize into a material presence—and this is just what he cannot do. In his perception are desire and fear; his thoughts stand before him, and behave as any of his kind behaves. He does not put soul into things, because soul has not yet been taken out of them. He does not pin names on to things; does not ask "What are you called?", but "Who are you?", because everything still is what it is called. And as it is, so it looks, so it sounds, so it feels, so it does to him for good or evil, and so he does to it in turn.

This "so" is heard in speech. The sound paints—and paints

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more than mere sound. The sense of hollow sounds (like m, mb) is "dull, dark, bitter, blunt, heavy, dense, thick, big, full, round, swelling, deep, tired", and much more, but all this in one. And now think of the opposites, "bright, sharp, light, blank", and so forth—how strange it would be for these to say that they were "umb" ! Nobody would believe them. Now speech is not the setting of words one after another, but is a happening in sound. Even isolated single sounds still have a sense—the example was only meant to show that they do have one—but it is less definite than in the course of speech, and often essentially different. It is only the structure of this course, the melody, which transposes the living reality into the sphere of acoustics, at the same time leaving its full sense intact.

To sum up : what is essential in the sensuous-perceptible is not that which separates the senses from one another, but that which unites them; unites them among themselves; unites them with the entire (even with the non-sensuous) experience in ourselves; and with all the external world that there is to be experienced.

## II.

What is essential in a work of art does not lie in the sensuous-perceptible. The artist will protest against such a disregard of sensuous beauty. (And rightly.) What is essential in a work of art does lie in the sensuous-perceptible. The artists protest still more. (And very rightly.) Both these sentences are wrong. (Now the logicians protest.) Both are right. ("Impossible!" shout the logicians.) What then ?

The perceptible is not less perceptible because it is more than merely perceptible. Appearances are not only a means by which we get knowledge of something—not otherwise communicable—which stands behind, beside, and beyond. It is not hidden behind the appearance, but is beheld directly therein. We do not hear sounds which someone once put together in such and such a manner in order to express this and that—we hear Mozart. (Busoni, himself a genius, heard that fragment of Heaven which Mozart had within him. He heard it, he did not have to work it out.)

What a man is I know by what he does and says; but still more surely and directly, by how he does it and says it, and by how he looks. But the What is not to be separated from the How; and even in inanimate nature to change the structure of atoms and molecules is the same as to transform the substance. I try to show the structure of music by analysis; but I can only show that such

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parts, so put together, form just this thing. We must hear the "so" of the parts, the "so" of their relation, the "so" of the whole music —this is its form, and at the same time its content. You cannot have this content except in this form.

Hanslick was wrong. Bach was no artificial constructor. To form is not to knead, but to condense.

I may know something, have a clear picture of it, have experienced it myself, and still not remember how it came to me—has someone told it me, have I read it, seen it, or dreamed it, or did it just come into my mind ? This could not happen if the mediator mattered.

I find myself in a very definite state of consciousness—"mood" would be too vague—there simply is no term. I cannot say whether it comes from a day in the Black Forest, a picture by Schwind, the work of Möricke, or from the seventy-third bar of Wolf's *Fussreise*. Perhaps from none of these, though each embodies it identically, gives the soul of it. I cannot give an exact account of it or communicate it to others, for I am neither painter, poet, nor singer, and was born a hundred years too late simply to live it out.

Lyonel Feininger, when fifty years old and at the height of his powers, sat down one day and wrote organ fugues. Until then he had only painted fugues. Now the blind also can see his pictures. Even in art the sense-sphere is largely indifferent; transposition from one sphere into another is possible, though not always so completely as here, where (I speak of the pictures) strong linear tensions are pulled tightly together by the clear austerity of the laws of counterpoint.

For there is one real contrast between the eye and the ear. No sound is ever so much an object as is a fixed, visible thing. Even in a constant tone we hear a continual waxing and waning. We say "Be quiet!" when we want to hear no more. A sound may be round, spherical like a ball, to my right or left, distant or near, concentrated or spread out—there does exist a hearing-space, but one in which neither quadrangle nor cube is possible. The eye alone puts before us objects which stare at us, which are as much outside us as we are outside them, and which remain where they are when we go away and are still there unchanged when we return.

To the contrast between the senses there must correspond a contrast between the arts. The arts of the eye form objects, though not for the sake of the objects or for their portrayal. An "object-free" work itself is set free only from material narration, is (to the annoyance of those who are thirsty for facts) no longer a description; but even it cannot cut off the statics of spatial form. The wood-cutter (of Hodler) holds his arm forever ready for the stroke which

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through all eternity will never fall, and, as in a watch-spring, the stored up tension gets less and less the longer we wait.

The arts of tone form events—when they will, with an alarming truth to nature. For whether an event develops in the realm of sight or of hearing, in the realm of body or of spirit does not change the way in which it develops. A motif may be beheld as a whole and all at once—as may a space-form—and without temporal development; but what is thus beheld all at once is still a progression with its tempo and its duration, a movement with all its motions. Even Schubert cannot sing "Ohne Regung ruht das Meer", but only "und bekümmert sieht's der Schiffer". The Egyptians might have caught the vivacity of the long-tailed monkey in the music of the shawm—the grandiose repose of the grey baboon called for stone.

But only in the most extreme cases does the contrast become decisive; its importance should not be over-estimated. And especially so since it has been found (first by Max Wertheimer) that in the stationary space-structure of the contemporaneous—as in the "field" of the physicist—the same play of forces is at work, which, when dynamically discharged, gives rise to movement. And the one as well as the other is preserved by the same "structure" from breaking up into a disconnected conglomeration or sequence. It is the same organizing principle which calls forth organism from mere substance, and which binds the stream of happening into wholes, which

makes the line a melody which we can follow, and the melody a figure which we can see in one glance.

Since the sensuous is perceptible only when it has form, the unity of the senses is given from the very beginning. And together with this the unity of the arts. Art unfolded into the variety of the several arts. In the mask-dance, music and painting, sculpture and poetry, are not yet separated from one another; colours and forms are still drawn into the sounding whirl of human action and its cosmic meaning.

To us, alas, sight and sound, inner and outer, soul and body. God and World, have fallen apart. What we knew as children we now must grope for. Only grown-up children—artists and wise men— know this always, radiating life in their glance, listening to the blossoming around.

A dancer had a dance—but this I have said before.