

An introduction to Umwelt*

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Everyone who looks about in Nature finds himself (or herself) in the center of a circular island that is covered by the blue vault of heaven. This is the perceptible world that has been given to us, it contains everything we can see. And the visible things are ordered according to their significance for our life. Everything that is near to us, and has immediate impact on human beings, is there in full size; distant and hence less dangerous things appear small. The movements of the small things may be invisible, while the movements of the things that are close, scare us. When we lie in the shadow of a tree, we are not aware of the imperceptible march of the shadow that is caused by the transit of the distant sun. But every movement of the leaves, caused by the wind or by a bird, is clearly manifested in the shadow outlines.

Things that are invisible to Man because they are concealed by other objects, are revealed to his ear by their sound or to his nose by their smell and, if they come very close, to his sense of touch.

Around us is a protective wall of senses that gets denser and denser. Outward from the body, the senses of touch, smell, hearing and sight enfold man like four envelopes of an increasingly sheer garment.

This island of the senses, that wraps every man like a garment, we call his Umwelt. It separates into distinct sensory spheres, that become manifest one after the other at the approach of an object. For man, all distant objects are sight-objects only, when they come closer they become hearing-objects, then smell-objects and finally touch-objects as well. Finally, objects can be taken into the mouth and be made taste-objects.

Objects, equipped with all the possible sensory characteristics always remain products of the human subject, they are not things that have an existence independent of the subject. They become 'things' in front of us only when they have become covered by all the sensory envelopes that the island of the senses can give them.

What they were before that, before they became covered, is something we will never find out. In this state they are of interest to the biologist

only as a cause of stimuli that by their action on the sensory organs make these generate characteristic properties. The purpose of the sensory organs is always to transform stimuli into properties.

Each sensory organ has, as we have seen, a sensory sphere of its own. The sensory sphere of the eye is the most extensive, it extends from the human body to the horizon. The sphere of touch is much smaller, it extends only as far as the feeling hand.

Since the sensory spheres of individual humans are similar in all essentials, the objects in the different Umwelten are also similar.

This has led people to the premature conclusion that objects by themselves are autonomous realities, having an existence of their own, independent of the subject. One can hardly find an educated person who is not prepared to swear that all living creatures experience the same sun, the same moon and the same stars — instead of carefully concluding that the celestial objects appear the same only in the Umwelten of our fellow human beings. Even this latter conclusion is wrong, when a small child reaches for the moon, it proves that the moon, barely eight meters away on the child's horizon, is not the same moon that we see. The horizon, that closes off the visible world for us grown-ups at a distance of about six kilometers, has been pushed outwards that far only as a result of various experiences. We have learnt, little by little, to see that familiar objects are not small but remote. Helmholtz tells us that he as a young boy, when standing with his mother in front of the garrison church of Potsdam, asked her to fetch him the small dolls that were repairing the roof of the church.

Among the animals, with their smaller Umwelt horizons, the celestial bodies are essentially different. When mosquitoes dance in the sunset, they do not see our big human sun, setting six kilometers away, but small mosquito suns that set about half a meter away. The moon and stars are absent from the sky of the mosquito.

No one, who has the least experience of the Umwelten of animals will ever harbour the idea that objects have an autonomous existence that makes them independent of the subjects. The variability of objects is the norm here. Every object becomes something completely different on entering a different Umwelt. A flower stem that in our Umwelt is a support for the flower, becomes a pipe full of liquid for the meadow spittlebug (*Philaenus spumarius*) who sucks out the liquid to build its foamy nest.

The same flower stem becomes an upward path for the ant, connecting its nest with its hunting ground in the flower. For the grazing cow the flower stem becomes part of a tasty morsel of food for her to chew in her big mouth.

The teachings of the positivists, that are based on the autonomy of objects with a predilection for dealing with sensory delusions of subjects (in order not to admit to the variability of objects), are ostensibly supported by two characteristic peculiarities of human *Umwelten*: the expansion of space and the placement of the center of the universe, two closely connected phenomena.

No animal will ever leave its *Umwelt* space, the center of which is the animal itself. Wherever it goes, it is always surrounded by its own *Umwelt* space, filled with its own sensory spheres, irrespective of how much the objects change. Man, on the other hand, when he wanders, tends to cut loose the space he moves in from his sensory spheres and thus to extend his paths in all directions. The vault of the sky gets higher and higher and the center of the world under the heavenly cupola is no longer himself but his home. Man does no longer move with a space that follows him faithfully, as his senses tell him, he moves instead in a space at rest, a space that is cut loose from him and has its own center. Space has become autonomous as have the objects within it.

In the course of the centuries the center of the ever growing universe has changed its location several times. The geocentric universe, with earth at its center, was followed, after bitter struggles, by the heliocentric one with the sun as its center, that has persisted to the present day.

Kant had already shaken the complacent position of the universe by exposing it as being merely a human form of perception. From there on it was a short step to reinstall the *Umwelt* space of the individual human being in its proper position.

The reason why this step has not to this day been taken, is that the idea of an objective universe, that embraces all living things, is undeniably very useful for ordinary life. The conventional universe, where all our relationships to our fellow human beings are enacted, has brought all personal *Umwelt* spaces under a common denominator, and this has become indispensable for civilized human beings. Without it, we cannot draw the simplest map, because it is impossible to combine all subjective points of view in a single picture.

To draw a map, we must exclude our sensory outlooks and replace them with symbols that can be incorporated into a mental structure. A map is not a picture to be looked at, it is a combination of symbolic signs, that have to be learned in order to read the map.

Pastor Busch in Estonia had once sent for a new map of the Baltic provinces and showed it to some peasants. The peasants contemplated the map for a while and then said with a grave nod: 'Very good likeness' — 'Likeness to whom?' asked the astonished Pastor, — 'To the Herr Pastor, of course', was the answer.

A map is never anything else than an abbreviated description in a conventional sign language. A map can at the most be correct but it can never be a likeness.

The peasants did not know the sign language and thus could not read the map. They thought it must be a picture, obviously of the Pastor himself. Since they thought the Pastor was convinced of its likeness, they agreed to this out of politeness.

Note

- * From J. von Uexküll (1936). *Niegeschaute Welten*, 11–17. Berlin: S. Fischer Verlag. Excerpt selected and translated by Gösta Brunow.