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Our Knowledge of the Physical World

Thus far we have assumed that our sense-experiences enable us to have knowledge of the physical world. When we asked whether we could ever be certain of the truth of empirical statements, we suggested that if we saw the book, touched it, etc., we could not doubt its existence—but we did not then question that we could actually know of the existence and nature of objects around us by means of sight and touch. When we asked how laws of nature such as “Water boils at 212° F.” could be verified, we suggested that they might be reduced to singular statements such as “This sample of water boils at 212° ,” “That sample boils at 212° ,” and so on, never doubting that we could know these singular statements to be true on the basis of sense-experience. When we analyzed the meanings of statements about unobservable entities such as electrons, we inquired whether such statements could be reduced to statements about the things we can see and touch, such as laboratory instruments and pointer-readings—again never doubting that these could be known through sense-experience. But it is time now to question these assumptions.

But why on earth, one might ask, should they be questioned? True, philosophy is devoted in large measure to the questioning of our beliefs, but isn't the belief in a world of trees, hills, and stars unquestionable? At least, if we questioned this belief, what is there left that we could not question? If we doubt not only causality and induction but the simple belief in a physical world, are we not reduced to sheer insanity? Don't we all, every moment of our lives, have an unshakable belief in a physical world—and not merely as a prejudice but for good reasons, since we see and touch the objects in the physical world constantly? What could be more certain than this? When I survey the scene before me, I would describe it by saying that I see a desk with some papers on it, books on a shelf, several chairs, walls, and a window,

and, outside the window, houses and trees in the distance. I see these things, and can touch them if I want to. So if one asked, "How do you know that these things exist?" I could reply, "I see and touch them, of course. How could I see and touch them if they weren't there?" In all of this, what is there that could possibly constitute a problem? Nevertheless, many of our common-sense beliefs about the reality of the physical world have been doubted and questioned by many persons who have given considerable thought to the matter.

23. Realism

Naïve Realism

The man in the street who has not reflected very much about the problems of perception and the physical world is a realist (in one sense of that highly ambiguous word): he believes that a physical world exists and is there whether we perceive it or not, and that we can know various things about it. The following five beliefs seem to be shared by virtually all human beings, and the first four of them together constitute the view that has sometimes been called "naïve realism":

1. There exists a world of physical objects (trees, buildings, hills, etc.).
2. Statements about these objects can be known to be true through sense-experience.
3. These objects exist not only when they are being perceived but also when they are not perceived. They are independent of perception.
4. By means of our senses, we perceive the physical world pretty much as it is. In the main, our claims to have knowledge of it are justified.
5. The sense-impressions we have of physical things are *caused* by those physical things themselves. For example, my experience of the chair is caused by the chair itself.

Yes: there is not one of these propositions that has not been called into question by people who have thought about them systematically. What could possibly be the basis for such a doubt? Here are a few considerations that have led to such doubt:

1. Isn't what we perceive dependent, at least in part, on the nature of our organs of perception? If our eyes were different, what we see would be different; if our taste-buds were different, so would be the tastes we have. What right then have we to assume that we see or taste things the way they really are? In fact, how could we possibly know "how things really are," or "what they are really like in themselves"? Suppose our two eyes did not focus into one image and we saw everything double. Or suppose we had one eye on each side of our heads, like horses, so that we could see almost 180° of an arc but (probably) no spatial depth. Or if the rods and cones in the retina

were different or nonexistent, we would not have the color-vision we now have—indeed, most mammals do not have color-vision, and cannot distinguish one color from another, only degrees of lightness and darkness (as in a black-and-white movie); bees, on the other hand, can see ultraviolet, which we cannot even imagine. Or suppose we had a thousand eyes, like some insects; would not the world look very different to us?

Similarly, our senses of hearing, smell, taste, and touch might be quite different from what they are. We might have other senses, too, the nature of which we cannot now even imagine, which would reveal to us things we cannot now imagine either. Would not the world then look very different to us? (We can't even say "look," for this implies vision; and we have no names for the hypothetical other senses we are now discussing.) How would things look—or shall we say appear—to the inhabitant of Mars, for example to the "very intelligent cuttlefish" that H. G. Wells conceives as inhabiting that planet? As long as the content of our perceptions depends so much on the nature of the perceiving organ, and as long as we are unable to shed our perceiving organs as we do spectacles to try out other ones, how can we be so sure that we are perceiving things as they are? (We use the general word "perceiving" to cover hearing, seeing, smelling, etc., the "etc." covering also whatever senses there may be available to living creatures elsewhere in the universe.) Indeed, do we have any right to say what the physical world is *really* like at all?

2. Even with our present organs of perception, there are perfectly familiar cases of not perceiving things as they are. These we call *illusions*. The stick looks bent when it is half immersed in water, though it is really straight. The trees on the distant mountainside look grayish-blue, though ordinarily we would say they are dark green. The two lines in the Müller-illusion (one with arrows pointing inwards, the other with arrows pointing outwards) look different in length, though they are equally long. In yellowish artificial light the blue dress looks black. The train whistle seems to be higher in pitch as the train approaches and lower as it recedes, though the pitch (so we believe) is the same all the time. The vessel of lukewarm water feels cold to one hand (which has just been near a hot stove) and hot to the other (which has just been in ice water) although the temperature of the water is the same throughout the vessel. Surely it is a matter of common knowledge that in sense-perception we are sometimes deceived. Everybody makes the distinction between how things seem, or *appear*, and how they really *are*. We often "perceive things the way they aren't." (Sometimes the causes of such phenomena lie within us, sometimes without; but they are all classed together here as illusions.)

3. Indeed, often there is an appearance when there is no reality at all; we "perceive things that aren't even there." This is a more radical way in which we may be misled. The drunken man sees pink rats going up and down the wall, but there are no pink rats there. Press your eyeball and you will see two

candles, but only one is there. If you are anxiously waiting for someone you may hear a knock on the door ten times throughout the evening, though no knock has really occurred. A man may feel intense pain in his leg although that leg has been amputated some time before.

This is a more misleading kind of perceptual error than illusion. So far we have assumed that, although we perceived certain things wrongly, and that the nature of our perceptions depended on the nature of the perceiving organ, there were nevertheless things to be perceived. In hallucination, however, we seem to perceive what does not even exist, at least not at the time and place we perceive it.

4. Having thus prepared the ground, we can be much more radically skeptical than this. Our senses sometimes deceive us. Very well; how do we know they don't deceive us all the time? If sometimes, why not always? Maybe the whole world is one gigantic hallucination; maybe it isn't there at all; maybe we are constantly being deceived. A much more skillful deception, no doubt, than pink rats, or oases in the desert when you are thirsty and they suddenly disappear; but isn't it possible? How do we know that it isn't so?

Descartes (1596-1650) told himself that perhaps there was an evil demon at work, arranging things in such a way that he would *believe* there was a world of real physical objects, when in fact there were no such objects at all. It would be just *as if* there were—so much “as if” that he could never tell the difference. Thus, Descartes decided that he could never know that what was before him was really a table, that there were real trees outside, and so on. All these things he could doubt. What could he *not* doubt? Only that he, the doubter, existed, at least while he was doubting.

What then about the physical world? How do we know that the demon is not constantly deceiving us? Descartes tried to show that God is not a deceiver and therefore would not play us false on so important a matter as this. But, beginning with only oneself and one's doubt, how does one get to God? And how can one prove that God is not a deceiver? Doubts about the physical world could also take the form of suspecting that it is all a dream—that perhaps we shall even awaken the next minute and find it so.

Such possibilities will be explored in this chapter. But let us begin with a milder one. For the moment let us leave Propositions 1, 2, and 3 unquestioned, and look more closely at 4 and 5. It will not take much extension of our common-sense thinking to put both these propositions in serious doubt.

Representative Realism

The principal exponent of representative realism, John Locke (1632-1704), believed that there are physical objects existing independently of perception, but that the way these objects appear to us is in many ways different from the way they really are. In daily life we say that a tree has a