

# The Hierarchy of Heaven and Earth<sup>1</sup>

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## 1. The View Out and the View In

### 1.1 The Missing Head

This book is an unconventional attempt to discover, for myself and in my own way, what I am and what I amount to in the universe.

What am I? That is *the* question. Let me try to answer it as honestly and simply as I can, forgetting the ready-made answers.

Common sense tells me that I am a man very similar to other men (adding that I am five-feet-ten, fortyish, grey-headed, around eleven stone, and so on), and I know just what it is like here and now to be me, writing on this sheet of paper.

So far, surely, nothing can have gone wrong. But has my common sense really described what it is like to be me? Others cannot help me here: only I am in a position to say what I am. At once I make a startling discovery: common sense could not be more wrong to suppose that I resemble other men. I have no head! Here are my hands, arms, parts of my trunk and shoulders – and, mounted (so to say) on these shoulders, not a head, but these words and this paper and this desk, the wall of the room, the window, the grey sky beyond. ... My head has gone, and in its place is a world. And all my life long I had imagined myself to be built according to the ordinary human and animal plan!

Where other creatures carry small rounded body-terminals, fairly constant in shape and furnished with such things as eyes and hair and mouth, there is for me a boundless and infinitely varied universe. It looks as if I alone have a body which fades out so that almost the only hints which remain of it above my shoulders are two transparent shadows thrown across everything. (I may call them nose-shadows if I please, but they are not in the least like noses.)

And certainly I do not find myself living inside an eight-inch ball and peering out through its portholes. I am not shut up in the gloomy interior of any object, and least of all in a small tightly-packed sphere, somehow managing to live my life there in its interstices. I am at large in the world. I can discover no watcher here, and over there something watched,

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<sup>1</sup>The text was originally published in 1952 as an abridged version of a later, more comprehensive edition by Faber & Faber, London. We reprint the first out of three parts of the book, pp. 17–44, with permission. Some paragraph breaks have been introduced to increase readability.

no peep-hole out into the world, no window-pane, no frontier. I do not detect a universe: it lies wide open to me. These ink-marks are now forming on this sheet of paper. They are present. At this moment there is nothing else but this blue and white pattern, and not even a screen here (where I imagined I had a head) upon which the pattern is projected. My head, eyes, brain – all the instruments that I thought were here at the center – are a fiction. It is incredible that I ever believed in them.

(No doubt something is going on here. But whatever they are and wherever they are, these aches and chafings and roughnesses, these tastes and smells and warmths, are not grey-haired and equipped with eyes and ears; they are not pink and eight inches across and ugly or handsome. In short they are not a head.)

## 1.2 The Head Found

A further and no less remarkable discovery follows – while I have no head where I thought I had one, I have innumerable heads where I thought I had none: heads mysteriously shrunken and variable, twisted back to front, and multiplied endlessly, in every reflecting surface. That my head pervades the region round about is shown, first, by the fact that I have only to give any object there a polish to find my head in it; second, by the fact that if I take a box with a small hole in it (that is, a camera) and point it to the center of the region, I find my head trapped in the box; and third, by the fact that my friends tell me that my head is present to them where they are, so that they can describe it in detail.

It seems, then, that I am a decapitated body watched from the middle distance by its severed head, now made elastic, turned around to face its trunk, and hiding everywhere. Even the face with which my friend confronts me turns out to be a mask for mine: he cannot take off this mask, but he can tell me what it hides. And if he should be mistaken, at least his camera will hardly repeat the mistake: unlike him, it cannot



be credited with the power of grasping what is going on elsewhere. It is honest about that part of me which it contains where it is. And if it could describe me as I really am, here at the center, it would be a failure as a camera; for its photographs of me would show me beheaded, with itself – the camera – mounted on my shoulders.

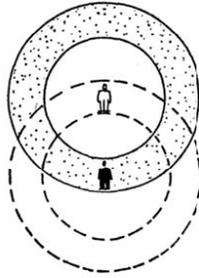
(In fact, there is precisely such a device, called the first-person camera, which is sometimes used to make a film in which the audience sees, not the chief actor, but what he sees – namely his world, including his hands and feet, and perhaps his pipe and the rims of his spectacles, but never his head. The body with which the cinema audience identifies itself is headless. The effect can be a startling realism, though few cinema-goers are aware of its source. In the film studio, either a headless dummy is used, with the camera where the head should be, or the camera is mounted close to the living subject's head so that it looks with him instead of at him.)

The many legends of loose and flying heads, and of headless monsters, are not far from the sober truth after all. Perhaps also the medieval fondness for martyrs who walked (even if they did not, like King Charles in the ill-punctuated sentence, talk) after their heads had been cut off, owed something to the half-conscious realization that we are all in much the same state.

### 1.3 The Human Region and Its Center

There is, then, a zone where I keep my hands. Approaching observers report that, towards the inner edge of this zone, my head grows till only a part of it is registered, and that this part gets hazier and hazier till nothing appears at all. Receding observers, on the other hand, say that towards the outer edge of the zone my head shrinks till it is replaced by the whole body, and this in turn shrinks till it vanishes altogether. Thus my observers come to plot the boundaries of what may be called my human region. My friend, entering this region, takes on my man's body. And I take on his, for each of us is centered in the human region of the other. The shell of my manifestations has for kernel the shell of his manifestations, and *vice versa*. Each of us is Brünhilda perfectly guarded by fiery rings, a magician who casts a spell over all who dare approach, transforming them utterly.

But we are not content to exchange heads. Neither of us holds on to what is presented to him, but instead projects it upon the other. Thus my friend insists that the head he registers is not where he is, but here at the center of my human region; and he says this regardless of the fact that if he were to come here to verify his statement he would (like Ixion embracing Hera) find on the way things very different from my head, and then nothing. Or, if he came all the way here, he would be in a position to find, not what he calls my head, but what he calls his own.



To push home your inquiry into my existence is to destroy it, for I am always elsewhere, like a rainbow or a mirage. If I take myself as I am to myself, I find presented these men, trees, clouds, stars; and I scatter them all as if in a giant centrifuge, leaving the center empty. If, instead, I take myself as I am to others, I am a host of creatures of numberless shapes and sizes; and all of them, though they belong out there, I pull in here as if by a powerful magnet, leaving none at large. Accordingly it is impossible to pin me down either to my center here or to the centers of my regional observers there. I am something like a game of hide-and-seek in which hider and seeker never meet because each takes refuge in the other. Everybody is out on a visit; but because no one will stay at home to be visited, there are no meetings. We all keep our distance by changing places and live inside-out.

And one of the reasons why we can never meet is that we more than meet: we become one another. For I do not live here at this center only, content to enjoy what is presented here and to refer it to centers over there in my regions. Equally I live out there in those centers, contemplating myself as manifested in them. Indeed I have already found that I am more at home out there observing my head, than here observing my headlessness. The view in comes at least as naturally to me as the view out. Unlike Burns, the gift I need is to see myself as I see myself.

#### 1.4 The View Out from the Center

Let me now examine, in more detail, this miscellany of objects which I find presented here. They arrange themselves in many ways, but notably according to their range of remoteness. Thus all the men I register are dispatched to my human region not many feet away; all the clouds to a greater distance; all the stars still further. I see them there, from here. If my friend is to show himself to me as a man, he must keep off; if he comes too near he is likely to be revealed as a mass of very lowly animals, and nearer still he may take on the guise of mere particles.

It is as if I carried about with me a worldwide nest of concentric sieves so graded that all things from stars to atoms are caught in its meshes, and

thus made to keep their proper distances no matter where I go. Always the chief class distinctions I note amongst my present guests are linked with residential distinctions. If you are a star, you can never trespass out of my star region into any other; if a man, your home cannot be far away. I allow neither slumming nor social climbing in my zoned suburbs.

My guests, then, refuse to stay. And I am not content to see them off, making sure that their baggage is properly labelled: I see them home, so that in one sense my boundaries come to include all their destinations to the furthest visible nebula. And when I get there I turn round to share their view of me.

### **1.5 The View In to the Center**

Common sense suggests that this self-portrait is strange only because in beginning with the view out I am beginning at the wrong end, beginning with what is arbitrary and irrelevant and for ever changing – one moment I entertain galaxies, the next, a dust grain – whereas the view in is constant, of practical importance, and the true revelation of what I am. Does my tailor care whether I am contemplating an elephant or a mouse, or my hatter need to ask whether I am an astronomer or a philatelist?

But common sense is wrong: the view in is just as odd and as variable as the view out. To show that this is so, let me call in a really efficient observer. His first rule is to keep on the move, and take on one aspect of me as final. Thus the innumerable views he gets of me in this room – back and front and side, above and below, near and far – are all of them parts of my true portrait. But he sees no reason why he should confine his travels to this room of arbitrary dimensions, and he retires beyond it. Now his story is of a manikin, a house, a street of houses, a town, a country, a planet, a star (a star that has developed into – or rather absorbed – a solar system), a galaxy, and in the end a spark of light that goes out altogether.

And if, finding this odd, he decides to approach me instead of retiring, his tale is equally curious and its end is the same. Whether he moves away or draws near, he finds all manner of non-human transformations regionally set out, and finally nothing. Even outside the looking-glass world there comes a point when to get to the Red Queen the observer must leave her, and to escape her he must imitate the ingenious cockroach that took refuge from the tortoise by hiding in its shell. The only way to get out of my presence is to make for its center – the one spot where it does not exist.

### **1.6 A Common-Sense Objection Answered**

To the objection that it is not I who am so transformed, it may be replied: what I am is the question at issue, and may not be prejudged. In

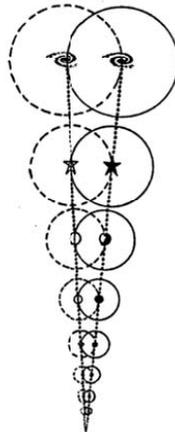
any case, if one view of me (say the back view at twelve inches' range) is not enough for the observer in my human region, if he must move about there to find out what I am, then there seems no good reason for restricting his movements to that one region – provided he keeps the center of all the regions in view. Again, if I, from my side, tell him that I am occupied with the inhabitants of many regions (and am indeed on visiting terms with them all), then it would be fastidious of him to ban them, ignoring their perspectives of me.

Moreover, if it is admitted that the near view of organs and cells, of molecules and lesser particles, is germane to my nature (and in some sense a view of *me*) despite the fact that it discloses something less than a man, then there is nothing to show why the far view, where the scene becomes more comprehensive (but no more strange), should not be equally valid. At this stage anyhow, neither can be given preference and neither ignored. For it is not as if there were some reality at the center against which its regional appearances could be checked.

### 1.7 The View Out and the View In Brought Together

Both my own view out and my observer's view in are so unexpected that, if either had to stand by itself, it might well be taken for an illusion. But they agree, each supporting and complementing the other. Looking in at me, and out with me, come to much the same thing – with this vital difference, that whereas the first reveals *my* head, *my* human body, *my* planet, *my* star, *my* galaxy, the second reveals *other* heads, *other* bodies, *other* planets, and the rest. Thus the two accounts agree in describing me in human and planetary and sidereal and galactic terms, and differ only as to which men, planets, and so on, are in question. The view in is of a particular one of these at each stage; the view out is of the others.

And their combination, the twofold story which must now be told, is



of a pair of mutual observers who, whether they go or come, keep equal rank. When one of them finds himself in the other's star region, he too is shown to be a star; when each inhabits the other's middle region, they are likely to prove men; venturing closer, they are less than men. Always their relationship is symmetrical.

All my looking, then, is looking in a mirror – in a glass which has the knack of showing me, not what I call *this* face, but its rough likeness. And it is often far from human. For most purposes my arm is too short and my hand-mirror is too small – I cannot hold it in my remoter regions to see what I am there – but all I really need is that perfectly telescopic and elastic glass, namely simple sight, to tell me in terms of others what I am.

### 1.8 The Elastic Self

Now these remarkable metamorphoses are not tricks of perspective, but really are happening to me all the while. Consider the place I call *here*. When I tell my dog to come here, I mean to this part of the room; when my friend comes here, he comes to this house; when foreigners come here, they come to this country; if one day Martians arrive, they will arrive here, even though they alight in Australia. The rule is that my *here* grows and shrinks along with my *there*.

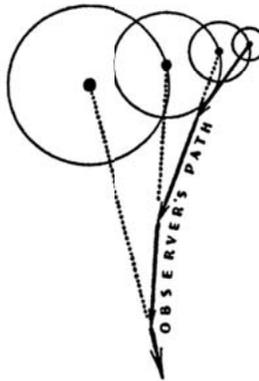
Again, I find myself taking up the viewpoint of such diverse units as my solitary human self, my family, town, country, and even planet. And this unit that I think for, that I vaguely feel behind me, that I have for backing, is on a par with what I am facing or up against. When a man offends, this man is offended; when a nation offends, this nation – no less – is up in arms. Once more, equality. I grow at a moment's notice a "body" to match what I have in "mind", though it is true I can discover this body only by taking up my station in other bodies, in my regional observers who are where I keep all my property.

My regions' boundaries are the tide-marks left by my outflowing and ebbing sympathy. In fact there is nothing here at the center but a receptacle for others – an infinitely elastic receptacle for infinitely elastic objects – and this center is half the time swelling to include in its own nonentity the surrounding regions with their full population of observers, and half the time shrinking to extrude them again, like myriads of rabbits out of a master-magician's top hat.

Thus to perceive another man is to centralize and abolish all of this man – atoms, molecules, cells, head, and total body – in his favor: thus to perceive another planet is not merely to look beyond all of this one, nor merely to incorporate it, but also to dissolve the whole of its mass into empty room (so to speak) for that planet. When mutual observers approach, thereby shrinking in each other's estimation, each produces the other from his own central void; and when they recede again, thereby growing in each other's estimation, each does so by absorbing the other.

### 1.9 Both Views Involve Center-Shifting

An important complication is that my observer is obliged from time to time to alter slightly the direction of his gaze. He attends, say, to a cell; and then, as the cell shrinks and vanishes and a limb comes into view, his line of sight is likely to move a little. It moves again when the whole man takes the limb's place; and later there occur shifts of direction from the planet's center to the solar system's and from this to the galaxy's.



And once more the inside story confirms and completes the outside. My observer sees truly when he finds the lesser me eccentric to the greater; for when I forget my private interest and identify my well-being with that of my town, or country, or planet, I find myself acknowledging a more distant center, and placing myself there. The larger the unit to which I am thus attached, the more remote its headquarters are likely to be. Initially eccentric, I can grow only by correcting this condition, stage by stage. My observer finds this out in his own fashion, I in mine.

### 1.10 Illusions of Grandeur?

Here, then, are the makings of a new portrait of myself. It is not what I had reckoned for, but it is drawn from the life. But is it, perhaps, too flattering? Am I not in danger of thinking too highly of myself?

The danger may be averted by four considerations. First, that my base, which I can never cut loose from, is my merely human phase; second, that if I am more than human I am also much less; third, that it is only by sinking myself in my object that I rise to its status; fourth, that in myself I am nothing but a reception-center for others. My life is the life they live in me. Take away these visitors of mine and I vanish; alter the least of them and I am altered. The fluctuation of a variable star is a fluctuation in me.

I am different because of the cloud that is now sailing past my window: for it is not white, or swift, or beautiful, over there, but here from there. Unless they leave home and arrive in me (or in some such home-from-home) my objects, from my friend's face to a spiral nebula, can never amount to anything. Truly I forget in what my wealth and true grandeur lie, and how inexhaustible they are, and how my title to them is my absolute poverty. Plunging head-first into the sea of nothingness, I find there untold treasure.

### 1.11 The Depth of the Picture

This abundance, this wonderful universe of objects, is present to me and not absent, presented and not represented here. And indeed the slightest attention to these things discloses that they are two-dimensional, that they have breadth and height, but no depth which really succeeds in coming between us; for the radii that connect me with them (though I may make a show of reckoning them in inches or miles or light-years) are only so many points when taken end-on.

Between two planets in the sky is a palpable gap, but between them and this planet is no such interval. Yet, because my objects are essentially centrifugal, there arises between us that mysterious "third dimension" which is in fact not a dimension at all (till it is changed into one of the others). It is, as pure depth, non-dimensional, a quality of otherness (including perhaps majesty or holiness or transcendent constancy) rather than a quantity of remoteness. And this quality of otherness or thereness is itself realized *here* at the center, along with the rest of my object's qualities.

The truth is that if I find the main conclusions of this chapter incredible, it is because, full of preconceived notions, I lack the simplicity to notice what is always staring me in the face.

### 1.12 Relativity and the Regional Schema

This center is the spaceless bud which is never and yet always bursting into the immense flower of my many-regioned space. Now this exfoliated space is essentially hierarchical. And hierarchy is the natural development of relativity – of the principle that an event or "thing" is the system of its manifestations to observers elsewhere. Taking this principle seriously and applying it to myself, I find that I saturate a graded space (in fact, space-time), a nest of boxes whose value varies with their size, a cosmic onion instead of a cosmic potato.

Hierarchy is quantitative relativity turned qualitative, disembodied and uniform and human observers become embodied and multiform and non-human, indifferent space mapped out into something like the ancient

circles of heaven and earth and hell, with all their traffic, naked and invisible light richly clothed in every garment of its hierarchical wardrobe, the light which falls off as the square of its distance transformed into the light which evolves men and universes as it advances. And already the outline of this regional constitution of mine is hinted at by the physical science which distinguishes between the Euclidean geometry of my middle regions and the non-Euclidean geometry of my nearest and furthest regions.

## 2. My Knowledge of the World Outside

### 2.1 The Scientist is Called In

Common sense suggests that, before going on with this inquiry, I should hear the scientist's account of the way I come to experience these objects of mine. It may be that, with his help, some of the surprises and paradoxes of the previous chapter will vanish, and I shall keep my head.

The first question I put to him is this: how do I see the hand that is writing these words?

### 2.2 His Account of Vision – Light

He tells me, in effect, that a portion of a star detaches itself, travels to my hand, and bounces off it into my eyeballs, where with lightning artistry it contrives to paint two small inverted pictures of the thing it bounced off.

I find this story full of difficulties. To start with, I cannot pretend I see a *hand*, but only a surface, and not all of this. Again, since sunlight (whatever that may be) takes time to get across from my hand to my eye, I can never see the surface of the hand I have now, but only something which "isn't really there". Most serious of all, if the light by which I see this out-of-date surface is the light which it rejects, which it refuses to make its own, isn't the thing I see here the very opposite of the thing that is (or rather, was) over there? How can I say my hand is pink, if pink is the one color it will have none of?

Moreover, I seek in vain any comprehensible tale of what happens in the gap between my hand and my eye. If it is neither my hand nor a flock of miniature hands which flies across, if what makes the journey is quite unlike what lies at that end and what lies at this end of it, and is not starry or luminous or hand-like or pink or five-fingered, then endless doubts arise – doubts which convenient little words such as light, and waves, and photons, seem wholly unable to resolve.

### **2.3 His Account of Vision – Nerves and Brains**

Putting all these difficulties to one side, let me consider the rest of the story. I am told that somehow there occurs at the back of my eye a picture of my hand – shrunken, upside-down, right-side-left. How do I get to know of it? The answer I am offered is, at its briefest, that no man – but only a lot of primitive animals called cells – can ever see my hand, and that each of them sees not my hand but a tiny part of it, and in fact does not see that part but tastes (I should say: reacts chemically to) certain changes in a light-sensitive substance in my retinae – all of which is going on in a place remote from my hand.

Certainly it is nothing like a taste, and still less like a star or a sunbeam or a hand, which passes along my optic nerves to my brain. The story is now of electrical impulses travelling along attenuated animal bodies – as it were a communal shuddering of creatures of the humblest sort. And what happens at the terminus in my visual cortex is no less obscure. It is safe to say, however, that no surgeon operating on my brain is ever likely to find there a model of my hand: and even if he did so, he would be a long way from understanding how this dwarfed and pitch-dark and hemmed-in version of my hand, composed of one kind of animals, can begin to do justice to the full-size illuminated original, composed of a very different kind of animals.

(In fact, such a discovery would leave the investigator much worse off: his work would only begin all over again, with the added inconvenience that the object is now a hopelessly inadequate copy of the real thing, and packed into a light-tight box where I keep no sense organs to help me perceive it. And I cannot avoid the feeling that this idea – the idea of having a second right hand, mysterious and withered and futilely groping in the dark among my brains – is much more comical and fantastic than anything in the previous chapter.)

Of course this is not the whole story – much more than retinal cells, optic nerves, and visual cortex, is involved in vision – but the point is now clear enough. It is that everything depends upon the continuity of the incoming train of events. For if this train is anywhere broken (as when the sun is darkened at night, or my eyes are shut, or my brain is injured in a certain way) then I cannot see my hand.

### **2.4 The Unknown Outside World**

If the foregoing account is in the main true, I can only know what happens in a part of my brain, at the terminus of the incoming train of events. The outer world is an inference. Worst, I must confess it to be the wildest of guesses, when I bear in mind all the hazards of that long journey, with its variety of vehicles, and the business of changing vehicles so often, and above all the immense discrepancy between the universe at

one end and the brain cell at the other. To believe that “the world I see” here is anything like “the world as it is” there, is blindest faith, making belief in the most colorful miracles of religion seem cautious realism.

Besides, the entire story from sun to cortex is itself more than suspect. For it is impossible to throw doubt upon what this apparatus is supposed to reveal, without throwing doubt also upon the apparatus itself. And so, if I take the scientist’s tale seriously, I am not even left with that tale, but only with my private collection of colored and moving shapes, which may have no relevance whatever to any universe beyond themselves.

## **2.5 The Senses Other Than Vision**

Nor does the scientist’s account of the other senses help. For in every instance his story is the same in essentials – a story of outside events, of events in a sense organ, of events in nerves and brain. And only the last, which few would claim to be like the first, is directly experienced. In short, my senses, whether taken singly or all together, are more like blinds than peep-holes. If by some fortunate chance a chink could let through a ray of outer sunshine, I have no means of telling it from the candlelight within.

## **2.6 Am I Alone?**

The world, then, may be my dream, and I its sole dreamer. And even this dreamer may be a dreamer within this dream. At this moment a pink patch is moving across a larger white patch, to the accompaniment of a faint grating sound; there are also certain warmths and tinglings and pressures. To be sure of much more than this is impossible.

## **2.7 Shall I Reject the Scientist’s Story?**

The scientist’s explanation of how he knows the world turns out to be an explanation of how he cannot do so. And from the start, by assuming the very thing that needed proof – namely his knowledge of an external sun and hand and eye and all the rest – he was deep in contradictions.

Nevertheless I do not propose, on this account, to ignore his story. For, firstly, he and I, if we are outside a lunatic asylum, cannot help but take on trust our perceptions of the external world; and, secondly, we both believe his story to be substantially true and of the greatest practical importance.

Instead of rejecting it, then, I shall try to retell it in a way that gets rid of its inconsistencies.

## **2.8 The Confusion in the Story**

He tells me that my world is not over there, but here “in my head”. Now this is what I found in the previous chapter, with one all-important

difference – I put only the world “on my shoulders”: he puts my head as well. He overcrowds the spot I call Here. Here I am headless, eyeless, brainless: all are turned out by my world. I keep the whole of my bodily equipment over there in my regions, for my observers to appropriate. My world and my brain will not mix; they must keep apart – for the first is central, the second regional. And this is only common sense.

Manifestly my head cannot contain the sun, and it would be unreasonable of me to claim two heads here at once – my friend’s and mine. And manifestly I know the sun, not a brain that knows the sun; I see you, not an eye that sees you; I smell a rose, not a nose; I enjoy fresh air, not lungs; my dinner, not a palate. I am where the sun is, not where my brains are, though it is true that they play their part in bringing about the sun’s presence here: for I see what’s here, with what’s there. Indeed I am slightly off my head so long as it is on me.

One of the consequences of trying to crowd the world I perceive and the brains I do not perceive into the same place is that one or the other has to be sacrificed. Generally it is my world. It has to be spaceless because no room can be found for it in my head, where it is supposed to be lurking. For instance it is sometimes said that what I experience here is not my hand, or my dog, or my friend, but a “mental image” or “idea” or “impression”; and that when I am looking at an elephant my “idea” of it is no bigger than when I am looking at a pin; and that all my “ideas” of the world in space are themselves out of space and in a world of their own – a world which copies everything in space without itself becoming infected.

But I can neither find any traces of this second world, nor understand what it is and how it may be recognized. For I have only to attend for a moment to this hand and page, to see that they have all the room they want here to be their full-scale original selves. This one world will do for me. I am not driven to the desperate expedient of first doubling it, and then depriving one world of its qualities and the other of its space.

The sun I see is not shut up here in any little bone box; no hordes of unicellular animals stand in its way. Freed now from all competition and confusion with eyes and nerves and brain, my objects are at liberty to come to themselves – not copies or ideas or impressions of themselves – here at the center. The sun is a sun and sunny, not over there in itself, but here in me and in its other regional observers. And so with the plain man I say that roses are as red and as fragrant as they seem, and the real sun is yellow and pleasantly warm and not particularly large, and marmalade and toast have a flavor that is all their own and no illusion.

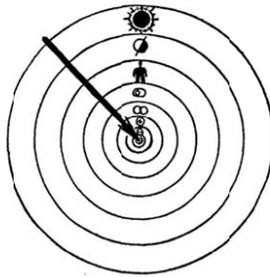
These colors and shapes and smells and tastes are not my way of misinterpreting the real universe, and not even useful clues to a universe which produces such effects in me; they are the facts, a fair sample of the stuff the universe is made of. And the reason why the scientist’s story

suggested the contrary was that it mixed the immiscibles – my brain and my world. He began with common sense and ended in paradox; I began with paradox and ended with common sense.

## 2.9 The Revised Story – the Inward Journey

Let me, then, retell his story thus: Light from the *solar system* (in particular from the sun) reaches the *earth* (in particular its atmosphere), where it is modified and passed down to my *human body* (in particular my hand), from which it is reflected to my *head* (in particular to my eye), some of whose *cells* are specifically affected. And since cells consist of *molecules*, and molecules of *atoms*, and atoms of *electrons* and other particles, the story should go on (at least ideally) to show how the changes wrought in my cells are reducible to changes in and among progressively smaller units.

Now the scientist who describes this train of events is none other than my approaching regional observer; for his account of how I see my hand is an account of his journey through my regions, from the place where he registers a star, through places where he registers a planet and then a man and then cells or a cell, to places where he registers mere particles, and in the end nothing definite at all.



His tale is no longer of things in a row, with that mysterious abstraction called *light* leaping from one to the next, but of a nest of regional manifestations, the first of which contains the second, the second the third, and so on to the void at the center. Of course his detailed description holds good: only its setting or framework is changed. Before, his journey was a series of unrelated movements; now it is an organized whole. Before, he merely wandered in this star (this developed star, the solar system); now he explores it. He peels this celestial fruit, stripping off a planetary rind, a human rind, and many more, till he gets to the core which is nothing.

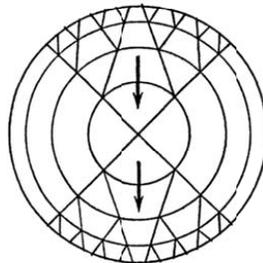
But this tale so far is the very opposite of what is needed: it shows the universe breaking down by orderly stages to nothing here in me, whereas

the question is how it is built up here. To remedy this defect, my observer must on arrival here turn round, looking out with me instead of in at me; and then it is plain that while his journey from the sun was my undoing and in the end my abolition, it was at the same time the building-up of the sun. The moment of his arrival is the moment of the sun's completion, and of my reduction to a mere receptacle for it. The same radial process which is for me centripetal and destructive is for my object centrifugal and constructive.

The only way to understand how I see something is to join in the process by which I see it, travelling from the object there to this center here while looking at both. The efficient observer combines the attitudes of cox and crew; he is the mythical bird which flies backwards to see where it has come from, as well as the ordinary bird which has eyes only for where it is going. That is to say, the train of events which the scientist describes is a misleading half-truth unless it is read in two antithetical ways. Till he grows eyes in the back of his head he is purblind.

### 2.10 The Inward Journey, Continued

But no competent observer is content to give such a bare account of me. He is out to find every kind of link between each regional manifestation and the next, till he comes to the nucleus of the system. For instance, he may note how the troubled condition of the planet as a whole affects my country, how this affects the prosperity of my district and town, how this affects my family fortunes, and how these in turn affect my condition as an individual man. He may then seek to show the stimuli which have thus converged upon my body's surface set up nervous impulses which converge upon my brain, and upon some particular brain area, and even upon some particular synapse or gap between two nerve cells – upon the switch where some fatal connection is established, where that central decision, which is the point of the entire converging system, is irretrievably made.



But even this story, like that of my vision, is partial and abstract; it is only a thin bundle of the innumerable threads that run through the total story of my bodily scaling-down. Truly speaking there is but one

stimulus – my whole effective environment for the time being – and one sense organ – the whole surface of my body for the time being, whether that body is a planet's or a man's or a cell's. For distinct trains of events, and separate afferent impulses, do not oblige the investigator by coming in one after the other, like expresses arriving to schedule at a main-line terminus. The process is spherical and unremitting, and not merely linear and intermittent; it is a circumference seeking its center rather than one point seeking another. Messages do not get through to me, but are continually replacing me.

### 2.11 The Outward Journey

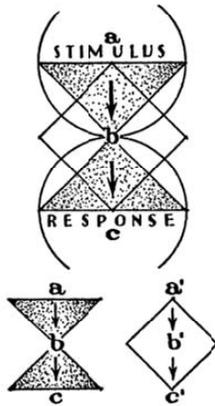
But the full tale is still only half told. The system of up-lines converging upon this terminus must be matched by a system of down-lines fanning out from it, otherwise all comes to a stop. I see in order to do, and do in order to see. I am anything but a mere registrar of objects. The central decision or switch-over issues in regional action, in a diverging complex of events which spreads by way of efferent nerves and muscles to my body as a whole, to my impact on my family and town and country, and my country's impact on the community of nations, and so on to the remoter regions. Thus the connection made here at the center is at once the final outcome of a world-wide converging stimulus, and the initiator of a world-wide diverging response; and the two chambers of this immense hour-glass are inseparable. Though my observer's visit is my death and dissolution, he holds a return ticket which is the certificate of my revival.

My story is the complementary opposite of his. I declare he is nothing over there in himself, but builds up to manhood (say) or starhood here at the center, and reduces to nothing as he returns home. He declares I am a man (say) or a star over there in my regions, but reduce to nothing here at the center, and build up to my original status as I return here. Whereas he finds (a) me regionally, (b) nothing centrally, (c) me regionally; I find (a') nothing regionally, (b') him centrally, (c') nothing regionally. And this is only another way of saying that the inward journey which is the making of my object is my unmaking, and the outward journey which is its unmaking is my remaking.

### 2.12 Mind and Body

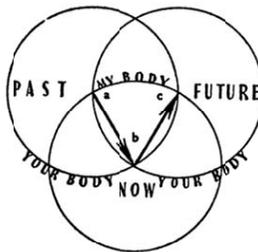
To the central station I give the name *mind*, to the regional stations the name *body*. That is to say, my mind is the view out from this center, my body the view in – where the term *view* is given its widest and most concrete meaning.

The difference between my body and my mind, then, is firstly one of direction (of the way the observer is facing); secondly one of place (my mind is central); and thirdly one of content (my body embraces this body;



my mind, other bodies). But there is no fundamental distinction between them: they are different ways of taking the same kind of social facts.

Of course, I may abstract from the strictly indivisible mind-body complex as many part-functions as I please, and call some mental and others physical. For instance, noting in my objects here such common characteristics as painfulness, promise, interest, marvellousness, on the one hand, and such common characteristics as roundness, redness, movement, weight, on the other hand, I may feel the practical need for a distinction between the two classes. Nevertheless this distinction is not between the psychical and the physical, between mind and body, but between two aspects of the mind-body complex. For all these qualities belong impartially to mind and to body, seeing that every view out from one center is a view in to another, and there are no views which are not views out. I can find here no experience which is merely central and subjective, which has no outer location or reference, and which is not a part of the way my regional objects come to themselves in me.



Again, I may distinguish such part-functions as will and perception. But these also are equally physical and psychical, for each mind perceives the body that the other wills. The stimulus (ab), which was for you

outgoing and intended and your bodily expression, is for me now incoming and extended and my mental impression; and the response (bc), which is for me now outgoing and intended and my bodily expression, will presently be for you incoming and extended and your mental impression. In short, I play the game of life from the center of an immense circular court; and whether the ball is mental or physical, perceived or willed, is a question of whether I am now catching it from the past or throwing it into the future.

### 3. Projection and Reflection

#### 3.1 Errors of the Instrument

Often I misread a thing, or mistake it for something else. But if the regional object is nothing over there at its own center, and has to come here to mine to be itself, how can I ever be wrong about it?

The first half of the answer is that, as an empty receptacle for the object, I cannot distort it: the instrument here is perfect because it does not exist. The second half is that, since the object is what it is to *all* its observers, and I am not all of them, I must always distort it. But my errors are, basically, errors of omission. There is nothing in the object itself at its own center against which regional estimates of it may be weighed and found wanting; they can only be weighed against one another. The truest view, in that case, is the most inclusive; the untruest, the least inclusive. But in the end all are valid, because all go to make the object what it is. I know the object in so far as I become all its observers in all its regions at all times.

#### 3.2 Errors of Projection

But even if I can never be wholly wrong about the datum here, do I not often project it upon the wrong place – as when I take the lamp on the hill for a star?

I say that there are ultimately no errors of projection, but only uncommon and private projections which we call illusions, and common and public ones which we call true; and the difference between them is one of degree and not kind. If enough observers project upon any center a consistent content, then that content becomes what we call objectively real, for no center is armed to keep off anything that is attributed to it. The real is what is consistently and persistently imagined – countless “psychical phenomena” bear witness. Projections become true because they are true; they cannot fail to strike home. The tree will never again be a mere tree or the same tree, once it has for a moment been, on moonlit night, an old man with upstretched arms.

On the one hand there is a vast quantity of empirical evidence to show that no line can be drawn between “unreal imagined objects” and “real perceived objects”; on the other I can find none to show that there are two worlds, one of fact and the other of imagination. Rather it seems that there is one universe which is the work of countless observers of every hierarchical grade, busy projecting upon one another all their contents.

The relatively unreal centers, those which are the product and the source of few and feeble and peculiar projections, differ from the others in no absolute respect. Indeed the trouble with the imaginary is that it is not half imaginary enough: waking is a more thorough kind of dreaming, a dream serial instead of dream short stories. The rats of *delirium tremens* may be more vivid than other rats, but we hear nothing of their diet or their fertile unions: they are insufficiently worked out, failures and not successes of the imagination.

### 3.3 Projection and Reflection

Nor can I find good reasons for sharply dividing my objects into (a) genuine observers, who are two-sided and something for themselves as well as for me, and (b) mere things, whose views in are matched by no views out. Everything suggests that a view in implies a view out, however rudimentary; that the observer, who can scarcely help attributing to the object some of his own capacity for observation, does not do so in vain; that to be two-sidedly alive is to bring others to similar life; that observation is infectious or nothing.

Primitives, children, poets, worshippers, find around them a vitality which is no longer their own projection, but comes back to them as a foreign influence. The phenomena of telekinesis and the poltergeist hint that the mountains which faith moves are not merely metaphorical. When we give our mind to our work it lives and works. Thus many an author of fiction has found his characters developing an intractable life of their own, which startles or even menaces their creator.

It would seem that the universal society is a great novel, of which each of us is at once joint author, and one of the characters, and many of the characters. At every level we make one another what we are, by reciprocal projection and reflection. Indeed it is common knowledge that we get out of things what we put into them; that kings and idols, gods and ghosts, come to own the powers they are sincerely credited with: that our love and our hate are returned, not as ours, but as genuinely the other's; that enthusiasm is contagious; that what we think of men, men come to think of us. Appearances, then, do matter; for reality is keeping up appearances.

Each grows aware of himself in and through his equals, without whom he is imprisoned in his own central nothingness; and his self-consciousness is not in the end a different thing from their consciousness of him. To

confer on myself a body is to confer on the objects around me a mind, for only they are in a position to note my body. Thus the self-conscious man is not one but many, even if he is alone on a desert island: someone over there is watching him, and that someone is himself yet another. He is always in company, though he calls it his own.

So far from being chained to this observation post, then, I am always placing myself at others, and often establishing new ones; and so I come to enjoy, not only their varied perspectives of myself, but of all the world. But what I cannot do is to leave my observation posts unchanged and mindless: my view out from them is theirs, not a copy of it or a substitute for it. I cannot recognize you to be a man without partially identifying myself with you, without entering into your life.

And it is much the same with nonhuman and even “inanimate” things – trees, waves, mountains, clouds – I have the irresistible feeling of entering into what they are for themselves. In the pillar I stoutly thrust; in the taut rope I feel the pull. I ride in the clouds, shine as the sun, look down from the stars. I throw myself into the object’s motions, I am swayed by its laws, I feel for it and with it. The pathetic fallacy is a fallacy only when I lack the vitality to make it anything else.

Nevertheless I do not leave this original center for that one, but keep my hold on both. Thus is established a two-centered system whose subject-pole and object-pole are frequently reversed; and the two-way traffic of this system, with all its experienced content of “mind” and “body”, is indivisible. No item or function belongs exclusively to either pole, but rather to the system as a whole. All our existence is transregional circulation.

### 3.4 The Mirror

The other center to which I thus attach myself may be a mirror. What happens when I look in my glass is that I, who am nothing here, place myself there where I am a man, and project him back upon this center. Now this is only a specially lucid case of self-observation in general; my glass does for me what my friends do, only with fewer complications, for I contribute only a part of my friend’s nature, whereas I am for the time being the whole life and mind of my mirror.

What occurs everywhere obscurely occurs plainly here – the mirror is living, active, human, and conceivably also suprahuman, in commerce with the observers ranged about it. Between us, the glass and I achieve a man; but break the mediating radial processes of our regions (which appear abstractly in optical diagrams) and neither of us achieves anything.

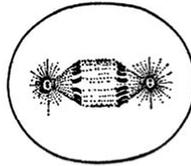
### 3.5 Some Levels of Projection-Reflection

If you and I are a pair of mutual observers, our hierarchical status varies with our mutual range, which in turn depends upon the vigor of our

projective activities. If these are short-range, we do not amount to much; if long-range, we are more comprehensive. Let me give some examples.

(a) Where there is no projection, no second center linked to this one, there is nothing, not even an electron. For modern physics, a particle is something in so far as it has regional effects, or (in my terms) in so far as it projectively contributes to what its fellows are.

(b) Amongst cells, this projective activity is visibly bodied forth: the dividing cell is organized about two centers (centrosomes) whose commerce appears as the nuclear spindle. And when this commerce ceases and division is complete, the two cells revert to a relatively unorganized condition – thus they are most themselves (with chromosomes fully formed) when they are most busy with each other.



(c) As projective-reflective particles comprise projective-reflective cells, so these in turn comprise projective-reflective multicellular organisms. In sexual reproduction, the offspring is a relatively long-range and long-term joint projection of the parents; and when they rear their offspring their original projective activity is prolonged and complicated, with proportionate results. The higher the newborn creature the less self-contained it is.

(d) The highest multicellular animals comprise a society of self-conscious persons who not only make one another by projection-reflection, but involve as they do so the surrounding world, animating it with life and meaning.

(e) And finally such a society may come to see its internal projective-reflective activities as mere ingredients of a similar universal activity. There arises the notion of One who does not find himself in himself, but in his Other, in his projected Image; and all that exists owes its being to this, the supreme and all-embracing instance of projection-reflection, of the imagination that creates.

These examples will do to indicate that the scope and quality of what is projected tend to improve with range; and that the lower grades of projection play their part below and within the higher grades, as their substratum.

### 3.6 Projection-Reflection and the Law of Equality

At every level we project our equals. Yet man advances by painfully finding how *unlike* other things he is, how superior to animals and trees

and stones on the one hand, and how inferior to his gods on the other; indeed the surest measure of the man is the measure of the hierarchy that he finds towering above him and opening at his feet. Is the law of equality, then, a dead letter for him?

No: the law holds good. For man to survey this double and widening gap, this discrepancy between his own and his object's level, is for him to span the gap. If he had no access to the base and the apex of the hierarchy, he could never see himself as in the middle. He cannot know his very real inferiority without knowing what he is inferior to, and without being in some sense raised to its level. And this, subject to varying qualifications, has been the teaching of all the higher religions. We cannot know our place by staying there. The real limitation is ignorance of limitation.

We are like what we like. Knowledge of a hierarchical level is only to be had at that level, by one who joins in the projective-reflective activities which constitute it; for such knowledge is nothing else than a true part of these activities. I shall try to show in what sense this is so at the infrahuman levels explored by science, no less than at the suprahuman levels explored by religion.

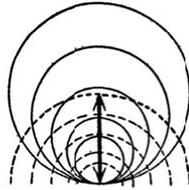
Surely it would be plain to an impartial observer that the scientist is far too big, too heavy-handed, for this job: he is altogether too human. He needs to be a Proteus, infinitely mutable and elastic capable of insinuating himself into the living tissue, into the giant protein molecule, into the electron rings of the atom, without causing the slightest disturbance. An efficient detective merges with his surroundings and never spoils the evidence; and in so far as the scientist falls short of this ideal he investigates the products of his own ineptitude rather than the data.

But what, in that case, is the explanation of his wonderful success? It can only be this: he *is* just such a Proteus, such a super-detective. Automatically he is the equal of what he observes. He takes a particle's view of a particle, a cell's view of a cell; for he places himself at the spot where the object arrives at the status he accords it, and where he is necessarily reduced to the same rank. Atoms are cases of extreme myopia, infecting all their observers with the same condition. No *man* may enter the object's atom region: the radial extension, the feeler which the physicist puts out towards the object, cannot keep human status, but must conform to each of the object's regions as it traverses them.

For concrete evidence there is the scientist's apparatus – that ingenious set of telescopic ladders by which he descends deep into the infrahuman realm, while he is himself remodeled at every rung. And indeed you have only to listen to him to be sure where he is. If he is a microscopist looking at an animalcule, he has obviously been admitted to its world, for he talks of a few millimeters as a vast distance, to cover which in ten minutes is to race along. All his standards are nonhuman.

At the same time, of course, he is still a man. In fact he is distributed

throughout several of the object's regions, and is himself correspondingly multiform. As human at the end where he is, say, twelve inches from the object, he describes it in terms which must be anthropomorphic, thereby raising it to his own rank; nevertheless his very human account is a description of the infrahuman life he is living at the other end, thanks to the instrument which extends him to within a fraction of an inch of the object. Thus each party is assimilated to the other's rank without loss of its own, and the law of equality allows scope for any amount of inequality. And this ambiguity is typical of our investigation of all nonhuman levels.



To summarize, then, our projective-reflective activities give rise to: (a) the primitive estimate of the object as man's equal; (b) the religious estimate of the object as his superior; (c) the scientific estimate of the object as his inferior; (d) the philosophical estimate of the object as his equal and superior and inferior – with himself sending feelers towards the crown and the foot of the hierarchy, and so entering on equal terms into the life of each level.

## Acknowledgment

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