

THE RELATION BETWEEN THINGS

INTRODUCTION

Contemporary thought has long since ceased to believe in the existence of living and conscious beings on a cosmic scale. And of course there is no proof that such beings exist – no proof, indeed, that the Earth is alive, or that consciousness exists among the stars. Yet poets, philosophers, religious thinkers, even ordinary simple people believe in some such thing deep down. And even if we don't believe, or only half believe, at least we can try out the idea, and see if it helps us to explain certain things, or to think deeper into the meaning and the mystery of this world in which we live.

Yet how can we write about such things – what language can we use? No one nowadays seriously believes in the traditional cosmologies of the great religions of the past – they are considered to be inaccurate attempts to explain scientific facts. Yet the language of modern science is awfully dull and lifeless. So we are left with only one way out – to write about the world in which we live as any sensible person would write, in no particular language at all – to talk about trees and people and stars and planets as if they really are trees and people and stars and planets, and to use all the knowledge we can lay our hands on, new or old, to help us to understand.

And if, afterwards, we can look at a tree, or a star, and understand a little better what it is we see, that surely is enough.

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1. GENERAL PRINCIPLES

1. Everything in the Universe is interconnected. There is nothing separate anywhere. Things stand in a certain relation to each other and depend upon one another in particular ways. It is this relation between things which gives them their meaning and purpose.

2. The relation between things is largely a matter of their relative times. Just as the relation between musical notes is a matter of the timing of their vibrations, and when the timing is correct, a resonance takes place; in much the same way, different entities on a cosmic scale – planets, suns and galaxies, living creatures, cells and molecules – exchange energy in their relationships. One cannot say exactly that this one gives and that one takes, it is more as if an exchange takes place – as if each one gives and each one receives; and this can only occur when their relative times are in tune.

3. One has to remember that everything lives and dies – that everything has its own time. The relation between things on a cosmic scale is curiously simple. Just as a semitone is the smallest significant difference between notes in the musical scale, in exactly the same way a ratio exists which is the smallest significant difference between things on a cosmic scale. One cannot take it too exactly, but generally speaking a difference of about 30,000 times means a difference in category of this kind. There can of course be many smaller differences, but they are not significant on a cosmic scale – they are generally minor variations within the same category of things.

4. The same difference exists in the timing of different systems belonging to each entity. The reason for this, once again, is that the difference between these systems is of cosmic significance. In Man, for instance, the period of his digestive cycle (24 hours), is about 30,000 times longer than his breathing (3 seconds), and his lifetime (say 80 years) is about 30,000 times longer than his digestive

cycle. Taking the sequence the other way, we find that a single nerve impulse (say 1/10,000th of a second in duration) is about 30,000 times less than his breathing (though nerve impulses are subject to considerable variation and can be of much longer duration.) The next period we should expect to find at about 1/300th of a millisecond. For reasons which will be discussed later this would seem to be a limiting period at which energy can enter Man's organism. Each of these systems, as is well known in the case of Man, is concerned with a different kind of energy. 'Food' is concerned with physical energy, 'breath' is concerned with vital energy, nerve impulses with psychic energy, and the limiting period about which we have spoken is concerned with creative energy.

5. Now every living entity is born, lives and dies, and that is its time; but it also eats, breathes, and absorbs psychic energy and creative energy. And this is where its relation to other entities comes in. For the lifetime of one entity corresponds to the period for absorbing 'food' or physical energy for an entity of the next category, and to the period for 'breathing' of the next category and so on. For instance, Man's lifetime is no longer than the period in which Nature absorbs physical energy or 'food', no longer than a 'breath' for the planets, no longer than a nerve impulse in duration for the Sun, no longer than a flash of creative energy for the stars in the Milky Way.

6. By living and dying, every being provides energy. This energy is of different kinds. For instance, by living and dying, Man (in common with all living creatures) provides physical energy for organic life; at the same time he provides vital energy for the Earth, psychic energy for the Sun, and creative energy for the stars of the Milky Way. Conversely, Man obtains physical energy from cells, in the food he eats; vital energy from molecules, in the air he breathes, psychic energy from the still smaller elements, the ions or atoms which are connected with the transfer of nerve impulses; and creative energy from matter in the electronic state. In the same way any other living entity – the Sun, for instance, or the Earth – obtains energy of different levels from its connection with smaller entities below it, and provides energy to larger entities above it.

7. It is not quite true that energy is 'obtained' from smaller entities and 'provided' to larger entities – it is more as if energy were exchanged. Man, for instance, not only obtains energy from cells, in the food he eats, but also provides energy to the cells of his body, by eating. Conversely, he not only provides energy for Nature by living and dying, he also obtains energy from Nature in the food she provides for him. Energy is flowing always in both directions; but it is the ratio between different entities which determines the level of energy exchanged.

8. We must remember too, that individually the amount of energy provided by living and dying is insignificant. Individually, every being contains these different energies – every being is so to speak an accumulator of energy. But as a drop of water has no significance in relation to the sound produced by a vibrating string, in the same way it can only be the repetition of many lifetimes which is significant to a larger entity; a single lifetime is too small a thing.

9. But how is it possible to arrange things in their right categories, when we really know so very little about the lifetime of beings other than those quite near to us in scale? The longest period known to science is a few thousand million years. Such a period may well correspond to the age of the Earth; but we know that the Solar System must be many thousand times older, and what of the age of the stars of the Milky Way, or the different galactic systems beyond? And who can tell us the age of the Universe? Nor is there much evidence of the lifetime of smaller entities, e.g. molecules, atoms and electrons. The very idea of 'lifetime' in this sense was not until recently accepted by contemporary thought.

10. Now the time of everything in the Universe is directly related to its size. This is an important clue; for it follows that when we know the size of a thing we can infer a good deal about its time, and conversely. Broadly speaking, on a cosmic scale, there is a direct ratio between the size of any category of living entities and the length of time they live. A being that lives for a thousand years is a thousand times larger than a being that lives for a year – that is the general rule. The size of a man and the size of the Earth, and the lifetime of a man and the lifetime of the Earth – they are both in the same proportion, approximately. And the same with a cell, or any other distinct category of beings; but only, of course, on a cosmic scale. (The principle does not apply, for instance, to the planetary rhythms; for these are entities of the same category; but it should apply to a typical planet compared to a typical star or a typical galaxy.)

11. It follows that if the lifetime of beings is in proportion to their size, each of the other four periods of which we have spoken – its feeding, its breath and so on, will also stand in a constant relation to its size; in fact there will be five constant ratios, the values for which are the same throughout the whole Universe. For instance, the ratio between the size of the Earth and the time of her orbit, or ‘breath’, is the same as the ratio between the size of a man and the time of his breath. This ratio is a constant applying to the ‘breath’ of everything in the Universe.

12. We may call each of these ratios a velocity. Although they are not perhaps velocities in the strict sense of the word, each is broadly indicative of the order of velocity associated with each process. The first, for instance, would indicate the approximate speed of growth; the second would indicate the speed of movements connected with the digestive process, the third the speed of movements connected with breathing, the fourth the speed at which nerve impulses are transmitted within the organism, and the fifth the speed of movement associated with creative energy.

13. The existence of these constant velocities would seem to imply that throughout the Universe, movements of a certain order are always to be associated with the same kind of process, on whatever scale it may occur. Change in scale does not in fact imply a change in the speed of movement, though it is commonly thought to do so. A flower grows at a certain speed; nor will it appear to grow at any different speed to a larger being than ourselves, nor to a smaller, always assuming they could measure its movements. At the same time, the speed at which a flower grows is of the same order as the speed at which any other entity in the Universe grows, however large or small.

14. Since the periodic times on which these constants are based are in relation of 30,000 times, one to another, the constants will also stand in that relation. This means that the speed of growth will be some 30,000 times slower than the movements associated with ‘feeding’, and these movements are some 30,000 times slower than those associated with ‘breathing’. These movements in turn are some 30,000 times slower than those associated with psychic energy, or ‘impressions’, which in their turn are some 30,000 times less than the speed of movement associated with creative energy. This, therefore, is the most rapid of all movements, and as it happens, its value proves to be the same as the velocity of light. The fact that the velocity of light is a limiting velocity would seem to indicate that this level of energy, which we have called ‘creative energy’, is the highest level which man is capable of absorbing. The same would be true for any other entity.

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2. NATURE

1. Our picture of the world is therefore one in which the scene is always changing – changing with each observer; in which the same thing can have many different meanings, and in which the only constant factor is a ratio – the ratio between the observer and the entity observed. We are also forced to the conclusion that our own view of the world is only one of many, and that much of the real world is quite beyond our comprehension, for its time is so different from ours.

2. When Man looks out upon the world around him, he is so to speak putting himself in the centre of things. Whether he uses telescopes or microscopes, it makes no difference – his viewpoint is his time, and that he cannot alter. His time – his fundamental note in the cosmic scale – is of the order of eighty years, sometimes more sometimes less; and so his digestive cycle, his breathing, the rate at which he receives impressions and so on are also predetermined, and their periods are tuned to correspond with the lifetime of smaller entities. His digestive cycle is a day and a night, and is in tune with the life of cells; his breath is a matter of seconds, and is in tune with the life of molecules; his nerve impulses correspond with the life of ions; and the highest level of energy he can absorb, which we have called creative energy, is in tune with the life of electrons. Conversely, his own lifetime has a different meaning and purpose for entities larger than himself. In common with living creatures and plants, he is 'food' for Nature; his living and dying, too, is no more than a breath for the planets, no longer than a nerve impulse for the Sun, or a flash of creative energy for the stars of the Milky Way.

3. But now consider Nature's viewpoint. Her time – her fundamental note in the cosmic scale – is probably of the order of 30,000 years. Her digestive cycle is a year, and is in tune with the life of plants and small animals which come and go with the seasons. Her breath is 24 hours, and is in tune with the life of cells; her impressions coincide with the lifetime of molecules, and creative energy for her is connected with the life of ions. Conversely, her own lifetime has a different meaning and purpose for entities larger than herself. It corresponds with the digestive cycle of the Earth, it is no more than a breath for the Sun, no longer than a nerve impulse – an impression – for the stars of the Milky Way, no longer than a flash of creative energy for the Galaxy.

4. For Nature, then, the entities above and below her have a different meaning than they have for us. Nature's breath, for instance, is connected with the life of cells; our breath is connected with the life of molecules. It is all a question of relative times – Man's breath is in tune with the living and dying of molecules, Nature's breath is in tune with the living and dying of cells. Cells are connected with 'food' for us – we eat cells; but Nature could not 'eat' cells – they are too small, and their life is too short. Nature 'eats' living creatures, plants, leaves and so on. Every year millions of small plants, animals and insects live and die, decompose and are absorbed into the topsoil – 'feed' the soil, which is part of the surface film of organic life surrounding the Earth.

5. But how does Nature 'breathe' cells? The 'breath' of Nature is 24 hours; we know, too, that plant cells absorb sunlight during the day, taking in stores of vital energy which they use for respiration. And if one thinks of a forest in this way, one sees that it is like a huge lung, breathing in and out as day follows night, and the means whereby this is achieved is through the cells in every leaf.

6. And then the molecular world, which for us is connected with vital energy – with breathing, has quite a different meaning for Nature. The molecular world is the one concerned with transmission of impressions for Nature – it is the world of sounds and smells, of the singing of birds and the scent of flowers; and hidden deeper perhaps, it is the world of forms, of infinite variety in shape and pattern and structure, the basis for which is the molecule.
7. And why is Nature's creativeness connected with the life of atoms? We do not know the answer to this question. Is it perhaps connected with the phenomenon of cell division, a process which at least appears to be controlled by electrical forces? Does Nature create through the medium of electrical potential within the cell?
8. Nature, too, has a meaning and purpose for larger entities than herself. She is 'food' for the Earth; and although the periods involved are so long that the process is difficult to visualise, it is well known that mineral deposits, coal, oil, etc. are derived from organic life, and stored within the Earth's substance. All this happens within the cycle of glaciation periods – of successive ice ages – which correspond with Nature's life and death.
9. Every such period too, or perhaps every 'Great Year', there is some change in the Sun's influence, some increase and decrease in the Sun's power. This, like the year of 365 days, is also a waxing and waning of vital energy – it is the breath of the Sun, and Nature is intimately concerned with it, for her lifetime corresponds with its cycle.
10. To feel the existence of Nature as a breath – as a breath of vital energy lasting for thousands of years, during which every species of animal and plant comes into existence, develops and disappears; and to know that this breath belongs to the Sun, and that another breath follows, and then another – this is a concept difficult enough. But this period in which Nature lives and dies is only an impression for the stars of the Milky Way – no longer than the 'twinkling of an eye' – no more than a single nerve impulse for some cluster of stars that we see on a dark night when we look up into the sky. And beyond this again is the Galaxy – that strange timeless world which in some way unknown to us is responsible for Nature's creation.
11. This, then, is Nature. 'Nature dreams, imagines, creates worlds. Learn to unite your imagination with her imagination; and nothing will ever be impossible for you.'

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3. THE CELL

1. Nature is of course very much connected with our physical existence; but this is only one aspect of Nature – it is Nature seen from our own viewpoint. As we have seen, Nature has her own life too – her own world; and it is the glimpses we sometimes get of this world that are so miraculous. Her vital energy, her senses and impressions, her creative power is around us in everything we see and touch and hear and smell; and these things affect us in many hidden ways.
2. And in the same way the Cell is very much connected with our physical existence; but the Cell also has its own life, and we know very little of this life. What really is a Cell? Why do there have to be cells, in the cosmic scheme of things? What are cells for?
3. The Cell is as far away in time as Nature is; that is to say, Nature's time belongs to a different category from ours, on a cosmic scale, for it is much longer; the Cell's time belongs to a

different category from ours, on a cosmic scale, for it is much shorter. Cells vary considerably in the length of time they live. Most cells probably live for about a day or less – this is certainly true of the human germ cell, and of certain unicellular organisms. The fertilised ovum of course lives considerably longer, and nerve cells appear to live as long as the physical body to which they belong. But we can say that a typical cell's lifetime is a day; and if this is so, we should expect to find that its digestive cycle is of the order of a few seconds. Its breath, too, would be no longer in duration than a nerve impulse or a sound vibration; and whatever exchanges of psychic energy occur between the cell and its surroundings would be of very much higher frequency – about the same as short radio waves. Creative energy, too, would be of a higher frequency still – equivalent perhaps to infra-red or heat waves.

4. The fact that the cell's time is so much shorter than ours is very interesting from the point of view of the evolution of cells. For instance, suppose the evolution of a particular kind of animal, say a horse, were to take 30,000 years, then the evolution of a particular kind of cell, say a tissue cell, would take only about a year. 'Evolution' for the cell is what we call the differentiation of cells – we do not realise that cells have thousands of years of *their* time in which to multiply and specialise and develop this or that characteristic while the body is growing.

5. Evolutionary time for the cell is therefore a matter of years, lifetime is counted in hours, and the assimilation of food takes only a few seconds. The assimilation of food must therefore be a molecular process for the cell, for the lifetime of the molecule is of this order. Cells certainly assimilate substances which are molecular (e.g. glucose), for the food that we eat has to be vastly modified before it reaches the cells of our bodies. But it is also possible that air, or even more rarefied gases would still be 'food' for the cell. 'Breath' for the cell would be of a different order – it would be connected with the exchange of ions.

6. This leads one to certain very interesting conclusions; for instance, that we feed the cells of our bodies by breathing – this is true enough of certain cells, as any athlete knows; but is it also true that the breathing of cells depends upon the impressions we receive? – that the circulation of impressions through the right channels can affect the cells of our bodies by allowing them to breathe and become revitalised? New impressions, such as one gets on a holiday – do they not sometimes seem to bring new life and energy? And is it not equally true that the lack of impressions can have a harmful effect on us physically?

7. If our breath is food for the cell, and if our impressions are breath for the cell, then we should expect creative energy to bring impressions to the cell. This would imply that when creative energy circulates in us it has a definite effect on the cells of the body – and this we know to be true. Very deep emotional experience, and sexual experience when it is real and unspoilt can bring about a change in people which is physical – could this not be that the cells of their bodies are renewed and filled with new energy – energy on a level which is not generally available, providing many kinds of new sensations and impressions?

8. Impressions for the cell, then, would be connected with the world of electrons. This would lead one to suppose that it is a phenomenon of the same order as electrical energy. But there must be a still higher level of energy exchange between the cell and its surroundings – that of creative energy. This energy, if our theory is correct, would have the limiting velocity of light, and its frequency would be about the same as that of infra-red or heat waves.

9. Exchange of energy also occurs between the cell and entities larger than itself. The cell is connected with Man's physical existence; it is also in tune with the breath of Nature, for its lifetime is of the same order; and its lifetime also corresponds to an impression for the Earth. An impression for the Earth – a single nerve impulse – has a duration of 24 hours; it is a day and a night. Why is it that the lifetime of cells has the same duration? As Nature dreams and imagines, molecules live and die; and as the Earth dreams and imagines, cells live and die. The Earth's psychic life, her psychology, is connected with the cell. Nerve cells belonging to Man? Or the sum total of all nervous mechanisms in all living creatures on the Earth's surface – all the nervous energy that goes on in the world, stored like the electric potential in an accumulator? Such a concept may be easier to grasp if we remember that a hundred years is only a few minutes for the Earth. A period like the Renaissance, for instance, would be just a single thought...

10. But to return to the cell; one had thought of it as a lowly creature, confined within the walls of our bodies, yet its existence is essential, not only for the Earth, but even for the Sun. Creative energy from the Sun – the energy which creates organic life on Earth, works through the medium of the cell. But in this case it is the plant cell, which absorbs the life-giving rays of the Sun and converts them into energy, on which the existence of all living creatures depends. So each cell is a 'quantum' of energy – a 'quantum' of the Sun's creative power.

11. Does the Sun's creative energy also work through the medium of other cells than the plant cell? This we do not know. The one thing we do know is that the velocity of movement connected with creative energy is the limiting velocity of light or electromagnetic waves. If it is the light of the Sun which acts upon the plant cell, is it possible that radiations of the same velocity, but of a different frequency, act upon cells of other kinds, to produce creative energy?

C.L.

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