

Thinking - The Universal Bridge

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Introduction

This essay is an exploration of some consequences of Rudolf Steiner's philosophy (Ref. 11). It is written by an engineer, not a philosopher, who nevertheless has an abiding interest in philosophy. Thus it is not intended as an academic book, but as a sharing of ideas and insights with people interested in philosophy who like to consider ideas freely, and with students of Steiner likewise although it is not intended solely for them. The appeal of Steiner's philosophy is that it describes rather well what we actually do rather than hiding some rarefied philosophical system behind impenetrable jargon. Thus it appeals to an engineer just because it is practical, and hopefully it can appeal to others too. Steiner's sequence of exposition is not followed, and insights of the author together with the inclusion of more recent material mean that it is not merely a new version of Steiner's original book. The importance of the modern concept of "qualia" is drawn into the discussion at the outset, and the author presents a view of perception that may be inferred from Steiner's work but does not explicitly appear there. No reference is made to pre-twentieth-century German idealism because the enterprise does not need to rely on that. Steiner's philosophy was and remains abidingly relevant independent of such particulars.

Rudolf Steiner was a spiritual research scientist who reported his results in nearly 6,000 lectures and over 50 written works. This was all based on a rigorous approach to a scientific exploration of those realms of the world inaccessible to sense perception. Thus it required a careful inclusion of the possibilities of illusion and personal bias and how they may be recognised and circumvented when the safety of relying solely on sense percepts and instruments is discarded. For this a firm philosophical basis is required that embraces the possibility of other sources of information than physically-based observations. To make judgements about experiences undergone without the security of a physical basis requires an engagement that is existential rather than academic. Understandably the mandarins of science and philosophy are wary of such explorations, but their unease could be assuaged by a genuine grasp both of Steiner's philosophy and the many ways he tackled the problem of being genuinely scientific in spiritual investigations, the rigour of which exceeds that required for sense-based science. Active involvement is a prerequisite. People shy away from the "danger" of any kind of commitment in such things, and active involvement appears to entail that. Also people appear to be afraid of the vast body of literature containing Steiner's spiritual research reports where he goes well beyond philosophy, and thus they feel unable to consider his philosophy on its own merits. To participate in his path need not be feared as an uncritical or naive step, but as a test that may be applied and then reviewed freely, just as tasting an apple pie does not commit one to liking apple pies. The taste will never be known otherwise, however.

Much of what is re-presented here is based on Steiner's ideas, and in view of these introductory words it will not be necessary repeatedly to acknowledge that as we proceed.

Method

In what follows some concepts will be used without prior definition with the aim of clarifying them as the argument proceeds. It is not possible to start from nothing, for then every word used would have to be defined first, which would be both tedious and circular. In particular I will refer to "thinking", "consciousness", "perception" and "concept" based initially on our general understanding of those terms, which I will refine later. This is particularly important for "thinking" as philosophers actually obscure the issue by demanding a prior definition of it whereas its true import lies not in definition but in experiencing it first-hand. As we will see, concepts grow and they must do so starting from where we are and not from some abstract philosophical position which renders the process still-born. A man was asked once how one

gets to X, and after careful consideration he replied "If I was going to X, I wouldn't start from here at all". Well, we must start from "here", and will do so!

I will begin by considering feeling to establish a context for it when we go on to study thinking.

Feeling

The first fact to notice is that feelings "happen" to us. If I am in mourning then the feeling of loss and sorrow is not manufactured by me arbitrarily, it is a fact of my existence, it "comes over me" sometimes. If I feel cold that is also something that happens to me; I did not invent coldness or necessarily seek it. I "feel in tune" with some people and not others without knowing why. Indeed "feeling" is used to describe various experiences, but one thing characterises them all: feeling occurs just as any outer event occurs. To suppose that we should not feel in certain ways is as absurd as saying certain things have no right to happen to us. However, such feelings do afford self-knowledge, and may well indicate that we need to change.

Following such reflections we can say that we perceive something of ourselves through feeling, for the fact that feelings "occur" suggests that they are perceptions of some kind. Pursuing this line of thought I then distinguish that elementary fact from the content of a feeling which may be more or less subjective, and from my reaction to feelings. One person feels discouraged and then gives up, while another reacts differently by summoning up a resolve not to be put off. One person makes a huge fuss when hurt, another bears it stoically. As with any other perception the content happens but our reaction to it can vary. Thus although feelings are, at any rate at first sight, subjective and non-shareable, the fact that they are like perceptions is a more objectively shareable fact. So I conclude that a feeling is a perception of myself.

Now a number of levels of perception can be distinguished, for example:

- I feel pain when hurt, a perception of my relation to my body;
- I feel sick, a perception of something amiss in my metabolism;
- I feel happy, a perception of my relation to my current circumstances;
- I feel outrage, a perception of my relation to an outwardly perceived situation;
- I feel moved by a work of art, a perception of my aesthetic relation to the work of art;
- I get the feel for a subject I am studying, which is when I make it my own, my feeling then being a perception of that accomplishment;
- I feel pious (in the best sense), a perception of my relationship to the eternal;

and so on.

Clearly all these perceptions are of me in relation to various circumstances, and depend upon my character, my life's experience, my education and so on. However they do happen and are not make-believe. Without feeling I would not really be grounded in reality. Furthermore, as is now being attempted, something is shareable of all this, but really only at an ostensive level. I can through words point to the fact that I am experiencing a feeling of a certain kind, but I cannot simply hand over the content to someone else. The fact that in doing so the other person understands what I am saying is perhaps more significant than is sometimes allowed for, as clearly there is a "resonance" in the other in relation to their own experience. Someone who has never experienced the loss of a loved one can never truly understand the feelings attending such a loss, but the fact that resonance occurs where both parties have had a similar experience is a fact.

The problem with feeling is that although it provides quite detailed self-knowledge if we can go beyond our egoistic reactions to it, yet it is not shareable in the way objective scientific knowledge may be communicated. It is about me, and the colourings due to education, life-experience etc. take a lot of unravelling. So I conclude for now that feeling is a form of perception that is valuable, and hold open the possibility that through self-development a more objective relation to it may be attainable.

Qualia and Perception

Galileo (before John Lock) distinguished primary and secondary qualities (Ref 3). Primary qualities are those amenable to measurement, such as mass, length, coefficient of expansion, voltage and so on. Secondary qualities are all the rest, including all our primary (note!) experiences such as the experience of red, of the sound a violin playing middle C, of feeling sick, of the taste of an apple and so on. Now primary qualities are all based upon secondary ones, so their reality-status cannot exceed that of the secondaries. In modern philosophy the term "qualia" (plural) refers to the qualities present in the phenomenal character of an experience. They clearly include secondary qualities, and I will be using the term for particular secondary qualities like a particular shade of red (which is singular, a *quale*). This is in contrast to the description of such a colour by physics in terms of the wavelength of light, which is a primary quality.

Our inner experiences are all - in these terms - qualia i.e. secondary qualities. But if secondary qualities have at least the same reality-status as primary ones then our inner experiences do too. Although the status of qualia is hotly debated, it is hard to deny their existence, particularly for the definition based on the phenomenal character of an experience; the debate generally attacks other definitions.

Qualia arise in us via the senses, and also in dreams and purely inner experiences e.g. arising from meditation. The status of what comes from the senses has remained a vexing problem for philosophy to this day. Is the quale "prussian blue" present in the object perceived, or is it only present in the consciousness of the observer? In other words are qualia merely subjective, or do they occur "outside"? It is usually assumed that they are purely subjective, although there have been suggestions that they may also be objective (Ref 5). The usual model of the senses is that activities in our environment impinge upon our sense organs, and the qualia arise as an unspecified result of brain activity stimulated by the senses e.g. pressure waves in the air result in the perception of sounds. It is then supposed that all we can know are subjective qualia, standing as a kind of screen between us and the world outside.

However, the role of the senses as "conveyors" needs challenging. That they do not convey qualia is clear, as the optic nerve for example apparently exhibits only electrical and chemical activity. Another possible view of the senses, I suggest, is that they make us conscious of our environment rather than conveying anything. Superficially this is obviously true, but at a deeper level that may be exactly what they do. When I am listening to music I do not hear it in my head, I hear it "out there" where the instruments are (c.f. Velmans, Ref. 12), as though I am made conscious of what is happening out there. On this view the associated qualia would be objective, and the senses would have the role of awakening me to them. That all the senses reduce outer stimulæ to nerve activity accords with the idea that they have a common function - to stimulate consciousness. This fact is usually cited as a proof that the mental pictures or representations arising in response to the senses are subjective, but that view is based on the "conveyor" model of the senses.

Thus the eyes make us conscious of colours in our environment, and a colour-blind person's organism is unable to stimulate a sufficiently precise consciousness of distinct colours. A musician's ear exquisitely renders consciousness of musical tones in contrast to the senses of someone tone-deaf. Feeling makes us conscious of our own organisation in various ways, as we have seen.

This view would solve the "many mind" problem: how do I know that my experience of red, say, is anything like yours? On the subjective view there seems to be no way of knowing. But if those qualia are objective then we are both awakened to the same objective qualia by our senses. The very similarity of our sense activity, as that of the sensory nerves, even reinforces that conclusion!

I am not suggesting that all qualia are objective, however, as evidently our reactions to our sense experience of liking or antipathy are much more likely to be subjective, but that does not mean they do not exist.

Standing behind all arguments that will follow lies the fact that qualia are not reducible to primary qualities by their very definition. Many false objections can be stifled at birth if this is born in mind throughout.

Thinking

Now let us turn to thinking. First of all, we know through self-observation that we think. We find that in response to perceptions of the world we may be unclear about the relationships between various facts and then willy-nilly an activity sets in seeking to resolve the matter. This we recognise as thinking. Looking deeper we see that an activity must have occurred which revealed to our consciousness that we did not understand what we perceived, and which is also a form of thinking. Going further we observe that such an activity is present whenever we perceive something, resulting either in understanding or recognition of what we see, or leading over into the problem-solving mode of thinking.

It is important to observe that thinking is not only logical, it is also content-driven. Modern logic is content-free, and is sought to be so. Thus I can say "All badgers are mammals and all mammals are warm-blooded, so all badgers are warm blooded". Abstractly or formally it is true to say that "If all A is B and all B is C then all A is C", and as the statement about badgers conforms to this schema, it is logically true. It is in any case formally true, although the conclusion "all badgers are warm blooded" would be false were either of the premises false. Modern logic goes beyond the Aristotelian form just exhibited, and strictly excludes the content of a statement when examining the nature of logic. So thinking is not merely a wielding of logic as is often supposed, but responds to the content of our perceptions. Indeed it must as the latter are never merely formal. This is quite straight forwardly a matter of inner observation. To be sure the problem-solving phase should be logical to be of value, but logic no more exhausts its scope than does accounting exhaust the activity of running a business.

So we see that thinking and perception merge in the sense that thinking grasps the content in assessing the perception. Normally we do not observe this so intimately, as we tend to concentrate on the result of thinking rather than on the activity itself. However we can, as we have been doing, make the thinking activity itself the content of thinking, as was first pointed out by Rudolf Steiner (Ref 11). This is something we are not impelled to do in the same way we are impelled to think about our observations, but rather has to be a deliberate decision on our part. I mean here that that aspect of thinking that reveals to us the nature of the perception must and always does occur when we are conscious. Let us call it responsive thinking in contrast to pro-active thinking which seeks to understand the relationships between perceptions. Thus in the normal course of events the thinking activity itself, as content, does not necessarily evoke a responsive activity, but we may choose to apply pro-active thinking to it.

The claim often made that thinking is merely some kind of brain activity is open to question on two counts. First of all the proposition "all thinking is reducible to brain activity" is itself a result of pro-active thinking, so thinking comes first and that proposition is an unproved hypothesis. What makes it superficially plausible is that we need our brains to think. However the logic implied is, formally, "if A depends upon B then A is reducible to B", which is patently false. Applying that schema to animals, for example, yields "animals depend upon food so animals are reducible to food", an absurdity. If the schema is wrong in even one case then it is logically false, in which case its application to thinking is false too. So the fact that we need our brains does not of necessity reduce thinking to brain activity, and it is just as likely that thinking needs a brain initially to manifest itself, as does an animal food. The idea that the brain reflects thinking rather than creates it is more likely, as we will see in a moment.

The second problem with reducing thinking to brain activity lies in its ability to grasp the content of perceptions, for the content is a secondary quality which science has found no means of handling. As we have seen above the qualia involved can be thought of as objective, in which case thinking is operating at that level and not at a hypothetical brain-activity level. Another simple example comes from logic. Returning to our badgers above, the validity or otherwise of the syllogism is purely logical, being quite

independent of any brain activity. It depends upon the content of the proposition, not upon the nature of what renders it conscious. Furthermore, if the nerve activity of the senses serves to make us conscious of qualia, then the whole nerve-like activity of the inner workings of the brain would be expected to have a similar function i.e. to stimulate consciousness. The brain would then serve to render the results of thinking conscious rather than to create them.

Julian Jaynes (Ref 4) points out that we are unconscious of our thinking activity, and only know its results. Certainly the attempt to think about a specific activity of thinking is difficult, and usually we find that we were aware of a kind of rummaging around in our mind for factors relevant to the subject, and then like lightning an idea came to us which threw light on the subject. The thinking activity that gave us the idea is hard to grasp, and there seems to be a "gap" in our consciousness just there. This observation, for those who have tried it, is hard to deny. However, just as ordinary thinking is normally unobserved and thus unconscious, but yet we can (as we have been doing) become conscious of it, in like manner it is possible to wake up to the thinking occurring in the "gaps". What is required is patience and application, perhaps through meditation, and the result is an enhancement of consciousness. That consciousness may be enhanced is not unknown. Simple examples occur when people "kindly" point out to us our quirks and mannerisms, of which we were previously unconscious! Or when learning a foreign language it may take time to become conscious of unfamiliar vowel sounds, but nevertheless that is achievable. A widespread consciousness of ecology now exists which was absent even a few decades ago. Consciousness must have evolved in the past, as clearly stones have no consciousness in our sense, and that of the animals is very much debated, yet we now have a very sharp waking consciousness (at least on a good day!). Many individuals have reported enhanced states of consciousness, including out-of-the-body experiences (of which more later).

I conclude from all this that the activity of thinking is a primary reality not produced by matter, although initially material processes are needed to render it conscious. The fact that we may think about thinking puts this activity in a class of its own, for any other activity has to be justified or characterised by something other than itself, whereas thinking is its own arbiter. It is an irreducible fact of our inner experience upon which any search for knowledge depends (along, of course, with perception).

This is all very well, but what then is the validity of applying thinking to the world of experience? Can any certainty be attained thereby? Again we find we have no alternative but to think about the world if we wish to know it, but we must ask whether what is thus attained is true, or instead some kind of map or model. After all, the successful manipulation of the world as with technology can perfectly well be accomplished using a good model. An example of a model is the planetary model of the atom, which describes it as a nucleus with orbiting electrons rather like a minute solar-system. Physicists do not think the atom is actually like that exactly, but the model remains useful to some degree. Indeed in electronics engineering models are extensively used with dramatically successful results. The design and manipulation of electronic devices uses models of the physics involved since quantum mechanics offers only mathematics. So the successful use of thinking in manipulating the world does not necessarily imply that it has grasped the essence of things, it may only have grasped a model or map.

The answer to this is (at least) twofold: that thinking is not subjective and that it is participatory. The subjective issue is interesting as it is easy to suppose that thinking is subjective. There are two main reasons to think otherwise, the first being a logical argument to the effect that the distinction we make between the subjective and the objective is made by means of thinking, which must therefore stand outside that distinction. For were thinking subjective then that distinction would exist before thinking made it, which contradicts the fact that thinking made it. Also, the distinction could not be made other than by thinking as it can exist only as a thought-construct i.e. it can have no other kind of existence e.g. as a material body. There are no purple objects running around which are the distinction between subject and object!

It might be objected that the distinction was made by some other thinking agent - since it must be made by thinking - and our thinking arose afterwards within the distinction. This is indeed possible, but it only reinforces the point I am making, that some level of thinking supersedes the distinction. That we are able to discuss the whole issue in this way shows that our thinking partakes of that level.

The second reason, which is not so binding but is reasonable, is that thinking cannot be less objective than the qualia it judges. I will turn to the participatory aspect in the next section. Thinking is thus a bridge between the subjective and the objective.

Concepts and Universals

The possibility of participatory knowledge is very important. We have seen a glimpse of it in the fact that thinking grasps the content of our perceptions, not merely their logical form. A further important factor lies in the old philosophical distinction between nominalism and realism. Nominalism takes the view that our concepts and ideas are subjective, like labels we attach to what we experience, whereas the old form of realism espouses the view that our concepts are part of the world we are trying to understand. In other words universals like "justice" and "circle" actually exist in some Platonic form, an idea rejected by nominalists who maintain that they are "only in the head". Now to say "all men are mortal" is to espouse a universal truth implying some form of realism, so nominalists rephrase the proposition in the form "for any x, if x is a man then x is mortal". This pseudo-mathematical form is not really necessary, as it could better be phrased as "Every man is mortal". However all of this misses an important point, which is that the concepts "man" and "mortal" are themselves universals quite apart from the actual proposition, so the pseudo-mathematics has solved nothing.

To see this it is clearer to take a concept like "cat". If a four-legged furry creature with whiskers and a tail, that purrs into the bargain, enters my room I recognise it as a cat. Strictly speaking I make the judgement "that is a cat", although not usually in those words. If "cat" is only a subjectively held label as the nominalists claim, then somehow I must select just this one from all the other labels like "dog", "dinner", "giraffe" and so on. How do I do that? I can only apply the correct label when I have recognised the object, for the labels are just private names supposedly with no direct connection with anything other than my consciousness. But by the time I have recognised the object the label has become superfluous, other than as a means of communicating my judgement to someone else. The process of recognition must then be participatory as it precedes the labelling. This is fully consistent with our proposal that the qualia involved are not merely subjective. My responsive thinking participates in the cat itself, uniting with the content as explained before, and is thus "realistic" in the old terminology. Now the concept "cat" applies to all possible cats I could meet and is thus itself a universal. Backtracking, we then apply this to the concepts "man" and "mortal" discussed before i.e. they are the true universals. I do not propose a Platonic world of true universal propositions, but rather one of concepts.

Unease may arise when a Platonic world of universals is thus postulated¹, but that is probably because such a world is imagined to be "somewhere in the sky". However my argument does not entail that. It implies rather that the universal "cat" is as much a part of every cat as are the qualia involved. In other words there are two aspects of the cat, one accessible only to observation via qualia, and the other accessible only via participatory thinking. The "world of universals" is not separate from the world of experience, somehow to be related to the latter, but rather is part and parcel of one world embracing both experience and concept. This being the case, it then follows that thinking reaches out beyond the orbit of my subjectivity into the world, in line with its bridging function already mentioned.

That is not to say we cannot make mistakes, but those mistakes occur just when we judge subjectively, and we find that thinking - in us or in others - seeks to rectify such errors. Those errors are not to be laid at the

¹ Actually Plato referred to what we call "ideas", Aristotle to what we call "universals", but although our use of the latter term is here Platonic I prefer it to "ideas" at this stage of the argument

door of the universals, but lie in our judgements. For example I may see a pond from a distance and judge it to be oval, but when I get closer to it I realise that it is circular. There was nothing wrong with the qualia involved, nor with the concept "oval", but in my false judgement. And that was corrected by my thinking. This contrasts with the view of Ayer (Ref 1) that it is sense data that correct me. Sense data make no judgements, and neither do they revise judgements, only thinking can do that. Certainly new sense data may result in my changing my mind, but they do not themselves change it. It may be objected that if the concept "circle" is part of the pond then I should not have been able to make the false judgement. However that overlooks the fact that from a certain perspective the concept "oval" was correct, for indeed the pond did appear oval. The judgement was only wrong in so far as it failed to allow for perspective.

The issue of perspective raised by the rather simple example above has a much wider significance, for my judgements are all based on my particular position in time and space, and also on my personal development. It also raises further issues as to the nature of concepts and ideas. This needs attention if the claim being made that thinking and qualia are not subjective, and the possibility of actual participatory knowledge that ensues, are not to land us in seeming contradictions.

I am claiming that concepts are part of the world, and are not merely subjective, and yet acknowledging that even so errors of judgement are possible. This only makes sense if concepts can develop, which leads us away from the purely Platonic position that universals are perfect and immutable, with the attendant rather absurd supposed contradictions such as how a triangle can have three straight lines when there is only one universal straight line! Consider for example the concept "electron". The modern version is quite different from that of its discoverer J J Thomson, for a complex wave-mechanical description has been developed since his discovery. Likewise the modern concept of gravity is based on Einstein's General Relativity, yet Newton's theory remains very serviceable in many situations. So Newton's concept (as opposed to his theory) is not wrong, but insufficient in some circumstances. We may compare the situation with that of perceptions. If I perceive a red wall from a distance I do not see the individual bricks, and when closer I do not see the constituents of the bricks, and so on. However the red quale of the first view is not "wrong", nor the more detailed ones associated with individual bricks. Likewise my access to universals depends upon my perspective. Just as the quale "red" was not wrong for the wall, so Newton's concept of gravity is not "wrong". Thus just as we may see more or less of an object, without the lesser view being wrong, so may we grasp more or less of its universal aspect. It now makes sense to distinguish between the universal content of an object and my concept which grasps part of that universal content. The concept thus appears to be my current relation to the associated universal aspect of the situation. It is now a strange beast, for it is neither merely subjective nor the "full Monty". It depends upon my stage of inner development, my experience and so on, and yet is participatory.

The participatory aspect of thinking and concepts espoused here is really only a beginning, and usually not noticed. We feel part of the world we perceive, and yet we find it presents riddles and apparently hides very much from us, or we would not need multi-billion dollar machines to try and penetrate its secrets. What is important is to see that our knowledge is - if only slightly - participatory, which is a giant leap away from nominalism. For that holds out the possibility that further development and evolution may increase this to a point where concepts lose their abstract character and blossom into a much richer life.

A final point about concepts. They are sometimes held to be identical to sets (after Bertrand Russell), so the concept "horse" for example is identified with the set of all horses. An important aspect of a concept is that it will enable us to recognise certain objects in the future. Thus if an animal gallops round the corner tomorrow I will recognise it if I already have the concept "horse", even though that concept has been acquired by past experience only. In some sense a concept embraces the future as well as the past. It is difficult to see how a set can do this. Does the set of all horses contain horses yet to be born? If we also take into consideration the fact that concepts develop, e.g. the electron, it becomes harder still. It would certainly be wrong to say that the concept "electron" is the same as the set of all electrons, for the concept has evolved. The set cannot embrace future change if identified with the concept, for then the concept as it

was at the beginning of the last century did not embrace relatively future developments, so neither could the set. Our concept would have to be perfect to identify it with the set of all electrons, which is most unlikely. The concept "circle" might satisfy this, but most useful concepts are not as well defined as that of the circle. A perfect concept "horse" is not necessarily attainable now, for it is difficult to see how it could allow for evolution. This also makes questionable the existence of the set of all horses, for when does the set mutate as a result of evolution? I conclude that it is false to identify the concept "x" with "the set of all x".

If a concept is inadequate we are able to do something rather remarkable: we simultaneously recognise that the concept ought to apply to a situation, and that it needs extending to embrace it (e.g. when first experiencing a Manx cat which has no tail). The concept does not "either apply or not" but has the inherent power both to apply and be seen to be wanting. This makes concepts very much more powerful than sets or definitions, or theories. They have this character, of course, in conjunction with thinking which recognised the need for improvement.

Intuition

I now discard all prior notions of "intuition" and develop a meaning in line with my argument so far. It is not difficult. We are gifted with the ability to perceive the world, and we employ observation to do so, which is a directed activity that may be more or less penetrating. Likewise we have seen that we are gifted with the ability to grasp concepts by means of thinking. That is also a directed activity which may be more or less penetrating as we have seen, and there must be something analogous to observation which does that. I will, after Rudolf Steiner (Ref 11), refer to it as "intuition". Through intuition we lay hold of the ideal or universal side of the world which is inaccessible to our senses. Sense organs enable us to have perceptions which make us conscious of qualia, and thinking enables us to have intuitions which make us conscious of universals.

An old conundrum concerns monism *versus* dualism. Dualism is overcome here because thinking is both an activity we may observe in ourselves and thus belongs to our world of experience, yet at the same time it is what gives us access to universals. So it is just thinking that bridges the apparent duality, giving us a form of monism that surely has already come clearly into focus as a result of our arguments for participation. Bertrand Russell (Ref 9) came breathtakingly close to seeing this but missed it! The same world is grasped by observation and intuition, but from different "sides". Sadly some Platonists think they must be dualists just because they are unaware that thinking is the bridge, Sir Karl Popper being an example.

The non-Material

The materialistic paradigm of the present will rebel against the unavoidable implication of our argument that thinking is not a material process, and neither is intuition. Indeed neither are qualia. The situation is tricky because materialism - paradoxically - does not in any case understand matter itself. Ask a physicist what matter is, and you will not get a clear answer. To start with all manner of fundamental particles will be pointed to as the constituents of matter, but a closer enquiry into what they are leads to quantum physics and much "hand waving". Now quantum physics declines to explain anything because of the paradoxes revealed by the experiments upon which it is based. In 1931 at a conference in Copenhagen of the leading physicists of the time, the so-called "Copenhagen Interpretation of Quantum Physics" was adopted by many. This says in essence that quantum physics predicts the probability of the possible outcomes of experiments, but declines to explain those outcomes. Although some such as David Bohm fought this interpretation, it is actually a very honest position to take. In this way quantum physics moved away from materialism into "mathematism", for it has no content apart from mathematics. Particles are no longer little solid balls, and the waves used to describe them are not physical, being interpreted in statistical terms relating to where a particle might temporarily manifest in an interaction. The result is a science without any ground under its feet that however very successfully manipulates a world of unknown composition! If the waves and thus particles involved are not physical, and the fields involved are made of virtual particles which are then also not physical, what has become of "physics"? Hence I claim that matter is not understood by science at this fundamental level. All other manipulations in chemistry, biology, technology and so on are based on models which are thus hypothetical as their underpinning ultimately rests on quantum physics.

So to argue against our view of thinking on materialistic grounds is untenable. There remains reductionism, which would like to reduce it to whatever it is quantum physics describes. We are actually in a strong position here as physics does not know what it would like to reduce thinking to other than logic and mathematics, while we base our view of it on direct observation and experience. We may justifiably claim that that observation is primary. Indeed all mathematics results from thinking, and its shareable quality and precision are underwritten just by thinking. Thinking comes first and all else on the universal side rests upon it. The Copenhagen Interpretation has approached this view more nearly than any other science, resting as it does on mathematics.

I conclude that in thinking we grasp a reality that is fundamental and transcends the subject, and on its ground we may explore our world with confidence.

The "I"

Thinking is an activity, as is immediately apparent when it is observed. This begs the question "What acts?". Further observation of thinking reveals that it entails a kind of inner movement, but observation also reveals that we influence that movement, we have some control over it. Indeed thinking can be very hard work! So thinking is controlled by something, and I cannot help but say "I" control it. But when I try to bring this "I" into focus I find myself in difficulty. Further observation shows that thinking may continue in me unconsciously, as when I wake up with the solution to a problem that has been troubling me. Who is controlling it then? Here we must remember that thinking is not subjective, and it is just that which is now showing itself. If it is not subjective then it relates me to the world, as though in thinking I hold dialogue with the world. Its content comes from intuition, and I have to admit I could not fashion that content unaided. Thus I have control over thinking within my current powers of concentration, but the content is not exclusively mine. Surely this is exactly what we seek! In seeking knowledge we after all wish to transcend ourselves and find a content beyond what we already know. And that we do.

That thinking is not subjective implies it is not only grounded in me, but rather I engage with something universal when I think. Thus it is that thinking may sometimes continue without my further effort, and provide the content of my intuition. Shareable knowledge is thus possible, mathematics being a paradigmatic example, for we all share a common life in thought via its universal quality. Without a universal ground for thinking no way would be open to bridge the many-minds gap and come to agreement on anything at all.

Now we may understand why the "I" referred to above is hard to grasp, beyond a mere recognition of its existence. For our most essential activity - thinking - is not subjective and contained "within our epistemological skin" as it were, but makes us one with what is universal. Thus any attempt to find our true being merely within our subjectivity must fail, and all that we can expect to find there is a "footprint" of the universal aspect of our being. Hence the difficulties encountered in psychology and philosophy to nail-down the "I", the "self", the "ego" and so on. In concluding that it is illusory they are half correct, for it is an illusion to the extent that it may seem subjectively self-contained when it cannot be, yet it is not an illusion in the sense of not existing at all, for it is a genuine reflection of what we might call our universal or higher self. If we recall the "gap" referred to earlier where thinking occurs of which we are unconscious, and also that through perseverance it is possible to "wake up" to that thinking, then the "I" also begins like a "gap" to which we can awaken by the same means. Self-knowledge is no mere "naval-gazing" when once this is realised, for to know our true self is to awaken to our cosmic possibilities which in the nature of the case is not subjective indulgence. The latter is possible of course if we wallow in the inner qualia of our subjectivity.

Knowledge

A major question in philosophy has long been: what is knowledge? At least until Roger Scruton (Ref 10) who finds the question boring! We have seen that we learn about the world (be it realistic or idealistic) by means of qualia gained from observation and concepts gained from intuition. It is clear that confining ourselves either to qualia alone as the logical positivists did, or to concepts and ideas alone, cannot lead to secure knowledge just because there are two "sides" to the world both of which are essential. It seems that our human organisation cleaves our experience of the world into two, and our task is to unite them again i.e. monism has to be accomplished rather than accepted or proved. So knowledge is the ability to unite concept and quale appropriately. I thus espouse a form of the performance theory of knowledge, but strictly in the sense that knowledge is an ability, without entailing any kind of behaviourist interpretation; it is not written in "golden books in the sky", but is a part of my continuing self-development. I could almost say "I am my knowledge". For when I gain a new concept I change, and again when I develop it further. If I have difficulty gaining a new concept it is fruitful to ask "what in me resists change?". Initially a concept is quite particular e.g. I have seen one cat only in my life, so I change to the extent that I can now call up the picture of that cat in memory, and would recognise it again. Having experienced several cats I change further as I free myself from the initial mental picture and approach a more general grasp of the universal "cat". Each change is brought about by an ever more penetrating intuition, until eventually I change to the point where I can recognise any cat whatever. I know cats! It need not end there of course, as I could then embark upon a scientific study of cats. There is a magic moment revealed here: when my concept becomes infinitely extensive, capable of recognising any and all cats. This is perhaps more clearly illustrated by the concept "circle". Nowhere in the world of the senses will I see a perfect circle. I see a few imperfect ones and then I arrive at the concept of the perfect one. This cannot come from observation alone, so the process of intuition is very clearly in evidence here. I have in simple cases like this grasped the full universal in my concept. The study of mathematics is illustrative, as when we can throw the textbooks away we know we have grasped the concepts involved, whereas while we need to refer to them to solve problems, we have not.

We saw earlier in the case of the concept of gravity that the enhancement of a concept does not render our earlier versions completely wrong, and those earlier versions have a valid domain of application. Thus at every stage of my development I have secure knowledge, albeit as yet incomplete. I need not fear that I might be completely in error and will never know the truth, but on the other hand I have the humility to know I still have very far to go. What can be completely wrong is a judgement, and also the more complex judgements called theories. But not the concept. It may happen that I devise a concept which has no domain of application e.g. "the present King of France". This concept is not nonsense as the empiricists claim, for it once had a domain of application when there was such a king, and now is a perfectly intelligible concept even if without a domain.

This leads to the question: what is the status of concepts like "chair" as opposed to "lion", the one being a human invention and the other a fact of nature? More radically what of the now orphaned "the present King of France"? Here we must keep in mind the distinction between a universal and a concept. In the latter case the concept has been divorced from the universal since universals are part of the world, and now there is no King of France. The concept remains only in those possessing it. Even then it is in a sense part of the world as they themselves are so. This implies that as a microcosm I share a property with the world, namely the property of having a concept as part of me just as the world has universals. In so far as my concepts relate to universals I am not sealed-off, but I am separated from the world by concepts with no such relation.

There is another possible conclusion, though. Universals must be present in the world in the entities which entail them, not everywhere. There is no "cloud in the sky" of universals floating about waiting to be "connected", as remarked earlier. So a universal is an entity in its own right living as it were in sub-entities, which leads to the idea of an organic world of universals. But a perception containing qualia is rich in content, and as it is a particular manifestation of universals we are led to the insight that universals must also

be rich in content. We then appreciate that our present stage of development is very limited, rendering universals as it does in shadowy form to the point where many deny their very existence.

This stage of development is quite recent, for on the basis of the above organic view it becomes possible to understand past historical ages when people described the world quite differently, with a rich content of beings which were part of nature but are now regarded as mere superstition. Lawrence van der Post's moving descriptions of the bushmen illustrate this very well. The knowledge possessed by the aborigines in Australia is remarkable when considered without prejudice, for they could survive in conditions which would kill most of us without technological aids. I acknowledge, then, that those people had a richer relation to the world than ourselves, and am led to ask what changed and why? Lawrence van der Post's work may give us a clue here, as there is nothing "scientific" about the bushmen, but rather a naive existence which is/was so charming. The rise of the scientific consciousness in recent centuries in the West has led to our present objective materialistic view, giving both outer power and inner impoverishment simultaneously. So our evolution has led us away from the bushman stage to the present starkly objective one. This has clearly emancipated us from a childlike dependence upon the world into a remarkable independence and freedom. Progress is bought at a price, it seems. However, if it was once possible to have an inwardly richer relation to the world than we now have, surely that remains attainable again? It would involve a further inner development to regain that richness plus what has been gained in the meantime. Then we could relate to the entities behind the universals in freedom and dignity, and universals would cease to seem abstract. We will see an example of this below in connection with the German poet Goethe.

The Philosophy of Science

The philosopher David Hume confounded scientific philosophy for two centuries by showing that the principle of induction is unprovable. I see the Sun rise every day and conclude it will rise tomorrow. I keep releasing a coin and see that it falls to the ground, and conclude there is a law in action (gravity) dictating that it will always do so. Induction derives general laws from particular observations in this way. It was the only known way of doing so since deductive logic (e.g. the above badger example) is of no avail for this purpose. Having used induction many times to good effect I then conclude that it is a serviceable method. Hume showed that this argument is false because it begs the question i.e. the validity of induction is assumed in order to justify it, for I am using induction to say that it is serviceable. No other justification was found for it since general laws are not directly observable *per se*, but only indirectly via particular observations. Thus the existence of general laws, while not doubted, was nevertheless an act of faith. It is interesting to compare Sir Isaac Newton's theological view that since the world is divinely created it makes sense to seek order in it in the form of general laws of Nature. Another act of faith.

Sir Karl Popper remedied this situation in a very neat way. Having been a member of the Vienna Circle, he rejected logical positivism because he saw no way of being sure that a particular statement is true. He was keen to distinguish genuinely scientific theories from others, and noted that the only thing we are ever certain of is the disproof of a theory. He wanted theories to be tested by confronting them with observations, and thus a genuinely scientific theory should, he maintained, be open to being disproved by observation. He thus espoused his principle of *falsifiability* which says that a theory is only scientific if it is in principle falsifiable. His philosophy is demarcationist as he draws a line between scientific and other theories using the falsifiability criterion. He makes a strong point of the fact that it is a purely logical criterion, applicable by anyone, in contrast to a psychologist one depending on intuition, a feeling for truth or whatever. He solved the problem of induction very neatly by saying that instead we should make bold conjectures which we then try to falsify. The source of the conjectures can be anything: a dream, an idea ... so long as it is in principle falsifiable. He apparently overlooked the value of induction in deriving serviceable conjectures! A drawback of the whole neat arrangement is that theories must be confronted by observations, which presumably should be true to do their work, yet he denies the possibility of knowing that particular statements are true. To his great embarrassment the theory of evolution failed his test.

In the 1960's Thomas Kuhn came into prominence, having coined a new meaning for the word "paradigm". Kuhn divides scientific activity into two kinds, which he calls "normal science" - closely identified with puzzle-solving - and "abnormal science". Normally a "paradigm" guides the practitioners of a mature science, who practise normal science in articulating the paradigm and solving the puzzles it presents. Only when a crisis looms, resulting from intransigent puzzles of sufficient importance, or downright clashes with experience, does the discipline enter a phase of abnormal science or crisis. Usually this results in the emergence of one or more new paradigms which compete darwinistically with the old until eventually the scientific community settles - probably by degrees - on a new one. After that the scientists live in a new world. Margaret Masterman (Ref 6) pointed out that Kuhn uses the term "paradigm" in 21 different senses! It seems that he wanted to get away from the term "theory" and its baggage, and purloined "paradigm" to refer to a whole mind-set adopted more or less unconsciously through education and experience. Thus the pre-Copernican view of the Solar System was a paradigm which only became clear as such when supplanted by that of Copernicus. The ability to grasp a new paradigm has all the hall-marks of grasping a new and difficult concept; Kuhn refers to a "gestalt switch" in this respect, and describes the transition in terms very much applicable to the case where a new concept is struggled for.

Kuhn's answer to the question "what is scientific?" is that it must be framed within a particular discipline such as chemistry, and then only the community of practising chemists (in that case) can decide. They have the qualifications, as well as the insight and experience of working in that discipline with others, and whatever they "decide" is scientific, is so (e.g. by the simple fact they write about or work on it). No

authority or other outside voices have any place. Thus Kuhn switches the spotlight from the logical demarcationist approach of Popper to a human approach based on ability and experience. Science, he claims, is what makes progress.

Kuhn is essentially elitist, concentrating entirely on the scientific community as the measure of what is scientific. He considers that the strict application of demarcationism would cause all theories to be rejected all the time, as does Feyerabend. Some disciplines such as social science first attained scientific credibility in a formal sense when Kuhn's philosophy appeared.

Paul Feyerabend wrote *Against Method* (Ref. 2). He defends philosophical anarchism: "Science is an essentially anarchistic enterprise: theoretical anarchism is more humanitarian and more likely to encourage progress than its law-and-order alternatives. ... This is shown by an examination of historical episodes and by an abstract analysis of the relation between idea and action. The only principle that does not inhibit progress is: anything goes".

His point is that a theory is best tested by entertaining other even very unlikely or unfashionable theories as a contrast. He advocates what he calls "counterinduction": it is valuable to set against both theories and observations theories that contradict them. The example he gives, at length, of Galileo forcefully maintaining the Copernican theory against the initial evidence showed the value of so doing. The apparent change in brightness of Venus should, according to Popper's view¹, have falsified the Copernican theory immediately (the latter predicted a 1:64 ratio c.f. the observed 1:4 ratio, later explained by the accompanying changes in phase like those of the Moon). Observations are theory-laden, as Popper often stresses too. In other words our concepts have a great effect on our observations. Early users of the telescope could not always confirm Galileo's observations, but Feyerabend suggests that this was because Galileo's clear concepts enabled him to perceive and interpret what others could not. Yet all agreed over what they saw when the telescope was turned to terrestrial objects because all shared a common conception of such scenes. Thus counterinduction here means to advocate new, or retain old, theories in the face of initial apparently falsifying observations. Counterinduction is important thus not only in the face of well corroborated theories but also in the face of observations. The major importance of Feyerabend's approach is to show just how important it is to reckon with the theory-laden nature of observations. Like Imre Lakatos he considered it more fruitful to compare theories than tediously to insist on tests against observation. Feyerabend believes that science should be fun!

These are three of the major approaches to the philosophy of science of the 20th Century, at the end of which a main conclusion of philosophers of science was that "observations are theory laden", which in plain English means that observation is never free from concepts. This conclusion is valuable, for it is clear that only the uniting of concepts and perceptions yields knowledge, so we do not expect observation to be somehow immune from concepts. I had a remarkable experience when playing golf on a tropical island. I had lost my ball and in seeking it I noticed the unmistakable white stippled surface in the long grass. On drawing closer my whole field of vision became distorted as if painted on a rubber sheet that was then stretched. I was neither drunk nor on drugs! On drawing closer still my vision cleared and what I saw was the twisted broken shell of a golf ball. Now a golf ball is spherical, and before the true perception was attained it seems my mind was attempting to make the shell spherical at the expense of everything else, probably because I was concentrating rather intensely on the supposed ball. This was for me a graphic illustration of the power of a concept to affect observation. Another example is the report of people born blind who when they first gain their sight do not see the world in perspective. Galileo and the telescope as reported by Feyerabend is another example. All these illustrate how powerfully concepts (or their lack) may influence perception.

The value of Popper lies in his breaking the tyranny of induction, of Kuhn in pointing out the importance of our paradigms, and of Feyerabend in showing the need for a measure of freedom in the conduct of science.

1 Later Popper acknowledged the need for some temporary retention of a new theory in the face of falsifying evidence.

However, no consensus emerges from all this as to the intrinsic nature of science. Scientists have their own heuristics concerning good experimental method, and rely on "The Queen of the Sciences" - mathematics - to frame and test their results. The possibility that we have a kind of participatory knowledge is nowhere considered. According to the views expressed here the progress of knowledge consists in improving our concepts to approach ever closer to the universals that are part of the world, uniting them with ever more precise observations. Thus the progress of knowledge concerns the improvement of concepts rather than of theories (which amount to complicated judgements). A simple but serviceable concept of science is that it is a search for knowledge in this way based on our own abilities rather than on authority or dogma. The abilities I mean are those of clear thinking and accurate observation. A point not made so far is that we do not restrict ourselves to sense-based observation. Our theory of knowledge applies to any field of observation, and the first non-sense-perceptible observations we found were those of thinking itself. For when the activity of thinking is the content about which we think, then we realise that we have thought about something which has no colour, no taste, no tone, in short is not sense-based. When we wake up to a higher consciousness of what is in the "gaps" we described before, a new source of perceptions and qualia becomes available about which it is also possible to be scientific. In this way we can hope that the paradigm of materialism will be superseded.

The German poet and scientist Goethe approached science in quite a different manner from his contemporaries. In studying colour he insisted on remaining within the field of qualia, and thus studied colour itself rather than studying the primary qualities related to light as did Newton. He sought "primal phenomena" (in the domain of qualia) from which, in a mathematical spirit, all other phenomena in the field of research could be derived. He applied this method also to botany, comparative anatomy, meteorology and so forth. He thus refrained from setting up theories alongside the world of experience, remaining instead within the world of experience and seeking the associated universals. It will thus be clear that his approach is very close to my own conclusions about the progress of science and knowledge. In connection with botany he claimed to have discovered the "primal plant" which is like a kind of archetype of all plants. What is perhaps most interesting is that he claimed to see the primal plant he had discovered, suggesting that he accomplished the start of the regaining of a richer relation to the world of universals that I postulated before. And this was through a uniting of scientific endeavour and inner development, as anticipated earlier.

Consciousness

We saw earlier that consciousness of universals was emasculated with the rise of science, although the process had clearly been happening over many centuries. The rapid progress of science in recent centuries also indicates that a new kind of consciousness has arisen, more objective and down-to-earth, and also sharper. So what do we mean by "consciousness"?

We have seen that our perceptions are influenced by our concepts, so that what appears in our consciousness is not simply a correlation with the bodily processes relating to the senses. If there is no one-to-one correlation then consciousness must be an independent phenomenon from the bodily processes, notwithstanding that it is generally stimulated by the body. This is the same logic as was used earlier to distinguish thinking from brain activity. Furthermore consciousness has a content which is largely in the form of qualia (not necessarily from the senses), which in turn are not reducible to the body as only primary qualities are evident there. Moreover without thinking, human beings are not fully conscious.

We now need to distinguish various levels of consciousness. The four most obvious ones are waking consciousness, dream consciousness, deep sleep and trance. Dream consciousness is distinct from waking consciousness because on awakening from a dream I see how illogical it all was, yet it did not seem so while dreaming! Our waking consciousness is intimately associated with thinking, which is absent in the dream apart from cases of lucid dreaming. In the latter there is an experience of waking up within the dream. Also the qualia experienced in dreams are often symbolic in nature, sometimes representing bodily conditions, particularly when ill. Deep sleep is normally regarded as unconscious, but the existence of the trance state of hypnotism suggests a distinction, and a person in a trance passes into sleep if left alone.

The distinction between waking and dreaming is the clearest as in both cases there is awareness. The presence of thinking is the factor that distinguishes them, and we have seen the role of thinking in incorporating concepts into our consciousness. It remains true that for most people the brain is needed to reflect the result of thinking into consciousness. Thus we have activities (thinking and experience of qualia) of which we are unconscious, and then the need for the brain to make them conscious i.e. we distinguish the activities from the consciousness, and from the agent that relates the two. But the level of consciousness engendered nevertheless depends upon the activity, as the presence or absence of logical thinking is crucial to that. So the brain does not determine the level, only the fact of consciousness. The role of thinking is further illustrated by the fact that when confronted by a complex scene I am generally conscious only of those aspects I am thinking about, and the more I penetrate the scene with thinking the more details become conscious. This is neatly illustrated by children's puzzles where one has to count how many faces there are in a picture, and how easy it is to miss some of them. Thinking also acts as a filter, as graphically illustrated in the now famous film of people manipulating basket balls and a gorilla passing across the scene; most people miss the gorilla if directed to count the bounces of the balls. Conventional research seeks correlations with brain activity, which we expect from all that has been said, but that correlation is just that, a relation between primary and secondary qualities without any possibility of identifying the two.

I now propose that the lower levels of consciousness are also related to thinking in some way, but to do so requires different modes of thinking, as the mode I have so far considered is that of waking consciousness. To approach this, we note that an inner effort is required to think out a difficult problem. On the other hand little or no effort is required to attach known concepts to our perceptions as the intuition acts very fast. However thinking is still involved as it unites the concept with the perception. I refer to the effort lying behind the thinking as "will". An important characteristic of the will is that we are not conscious of it. We have already seen that the will involved is not only our own, for once started thinking may continue without our further intervention, which we saw is related to the fact that thinking is not subjective. The different modes of thinking I now have in mind concern the involvement of will. In waking conscious the will exercised is predominantly my own, while in dreaming it is clear that much of what happens is not the result

of my own will, although it is not absent since I have awareness. In deep sleep the will involved is clearly not my own, in line with the fact I am unconscious of will, and neither is it in trance. The latter is informative as the will of the hypnotist is predominant. Thus in the first three levels of consciousness (omitting trance) we have different ratios between our own will and that associated with the universal aspect of thinking discussed earlier, varying from our own in waking consciousness to the universal in sleep. As an aside, this points to the significance of deep sleep which science has found hard to grasp. The trance state is then outside this ratio, which I will not consider further just now.

I thus distinguish the level and content of consciousness from the stimulating agent. That raises a question as to whether the brain is the only possible such agent. Also, what is actually stimulated? What we are given is awareness of the content and the ability to operate deliberately within it, regardless of the bodily underpinning. In cybernetic terms it is as if a feedback loop has been closed to render the content into an apparently closed field of operation. The brain closes that loop for us. The possibility remains that since the content is not produced by the brain the loop could be closed in some other way. This leads back to the possibility of awakening to the thinking in the "gaps", for that higher level of thinking results from thinking about thinking which is itself a kind of feedback and a loop-closing activity. Then consciousness can be emancipated from the body as we gain the strength to close the loop ourselves. We are left with the conclusion that consciousness rests in a feedback process operating within the field of qualia. That cybernetic systems appear to mimic responsive activity is fully in line with this, but of course the mimicry operates within the realm of primary qualities.

A complementary approach to consciousness is to observe the role of "inner light". Starting with qualia, to become aware of one is like an inner light being turned on. In a way all the senses involve inner light, and I am only conscious of qualia when the light is "on". An example is to listen to someone speaking an unknown foreign language, when suddenly I hear a word that I understand: the experience is like a light momentarily being turned on! Similarly with thinking, when I suddenly understand something I "see the light". But consciousness is always of something or other, and essentially of some relationship or other. If I am conscious of the presence of someone else, a relationship is then established between me and that person, initially simply in my having to accommodate myself to her or him. I spoke earlier of the consciousness of ecology that has arisen, which quintessentially refers to relationships in Nature. The light always relates to thinking, for a qualia for example is only apparent to me if I am thinking about it. The inner light is that thrown by thinking. I therefore propose that *consciousness is reflected inner light illuminating relationships*. I say "reflected" because the inner light always arises in response to an inner experience.

I now need to consider the finding that the physical preparations for action start significantly earlier than the reported time of the consciously taken decision. The difference is of the order of two tenths of a second (Ref 8). In other words the physical processes in the brain that initiate an action start up about 200 milliseconds before the person concerned reports their intention to act. The conclusion drawn, of course, is that consciousness has nothing to do with the process, being merely a side-effect. This provides apparently strong support for physicalism, namely that everything may be reduced to physics. This conclusion clearly cannot be correct as it stands because we have seen that neither thinking nor consciousness are reducible to physics. Furthermore there are actions taken solely on the basis of the content of consciousness, which being composed of qualia are not physical, so the source of the action cannot be physical in those cases. An example is driving a car where the actions required are based on qualia, which is verified by the fact that accidents often arise when the qualia are not judged properly. The physicalist conclusion from Norretranders' experiment is not, however, compelling because the experimental finding actually demonstrates something else, namely that our (non-physical) intention affects the brain first, which then reflects that into consciousness 200ms (or so) later. Thus we now know, thanks to this experiment, that the feedback loop I spoke about before takes about 200ms to operate! The consciousness feeds back to the intention so that the body closes a loop and thus consciousness becomes a vital factor in our actions, notwithstanding the 200ms gap (c.f. again driving a car). We will also see later that the apparent causal

closure of the physical is contingent, which further emasculates the physicalist interpretation of Norretranders' results¹.

I have said nothing so far about feeling in relation to consciousness. One thing to be said is that it does not have the sharp quality of thinking, being more dream-like in quality. However that is important because it is just through feeling that we experience our presence and humanity, rather than acting like a robot as we would without it. The consciousness involved is clearly dream-like as it is notoriously difficult to be clear about a feeling, and in the face of efforts to raise our awareness of it, it generally evaporates like mist in the sun. As an aside, feelings for which we have no concepts can be troublesome, depression being an example. Usually we can associate a concept with a feeling e.g. I know why I feel sad if I have lost someone, or happy on meeting an old friend, or fear in the face of danger.

A final comment is in order about the rapid progress being made with MRI and other techniques to relate bodily processes to our conscious experiences. The distinction that will persist no matter what is discovered is that the contents of consciousness are secondary qualities while the experiments deal only in primary ones. The one cannot be identified with the other as they are, literally, qualitatively different. No doubt efforts will continue, seeking to dismiss the contents of consciousness - including thinking - as impotent epiphenomena or side-effects, as has been started by Norretranders. However the fact that the content of qualia can lead to actions will always remain to haunt such efforts. Success might be achieved in those directions if an exact parallelism between the content of qualia and the corresponding brain processes making them conscious were established, but even in the case of colour there is no such exact parallelism which is why the associated qualia are ignored by physics. In the case of out-of-the-body experiences, experiments have been conducted in which such experiences have been artificially induced. The logic being proposed is that all OOBs are therefore hallucinatory. However that is a fundamental fallacy of immediate inference which should be embarrassing! e.g. The fact that all cats have tails does not imply all creatures with tails are cats. Anyway it has long been known that the taste of an apple, for example, can be stimulated electrically, but no-one dismisses the taste of actual apples on those grounds.

The Brain

The above considerations prompt a brief note on the nature of the brain. Its vast complexity defies an exhaustive analysis here, but one interesting future possibility should be mentioned. The brain has been discussed so far as if it is a purely physical primary-quality entity as is commonly supposed. However if we take our findings seriously then we must surely deny that anything is merely like that. The world we experience is not like that, so we would expect that sooner or later the physicalist position will be undermined (it is in any case not accepted by all philosophers, although those denying it seem - unnecessarily - to be dualists). Indeed this has already started as it has been shown that it may not be possible to reduce everything to quantum mechanics. This started with the physicist Philip Anderson in 1972 and has received support recently from Mile Gu and colleagues at the University of Queensland in Brisbane, Australia. No doubt "the jury is still out", however.

In that case the role of the nervous system in stimulating consciousness needs further consideration, for we might expect there to be deeper realities behind the mere primary qualities. In particular the nerves may involve universals we cannot as yet grasp, which would relate to thinking in view of their role in stimulating consciousness. The same idea would apply to the brain as a whole.

¹ Recent research has, however, challenged these results.

Knowing the World

Realism takes the view that the world exists and has properties independent of our beliefs, while modern anti-realism - which takes many forms including the original idealist position of Bishop Berkeley - is opposed to that. Our ground is that of thinking which we have seen is intrinsically non-physical. Earlier thinkers including Kant took it as self-evident that we have no direct access to the content of the world as our mental pictures were held to be necessarily subjective like a screen between us and outside things. The argument, refuted by Rudolf Steiner (Ref 11), was that by the time whatever enters my senses has progressed through the sense organs, nervous system and brain, all that remains is data which then magically gets transformed into the mental picture or equivalent in my consciousness. Thus I cannot know whether the final result bears any resemblance to the original object, so all I know are my mental pictures, not the world. For some there is then no independent world, for others like Kant there is, but it is intrinsically unknowable as it is screened off. Steiner pointed out that this argument assumes that the picture of the senses, nervous system and brain employed in the argument is as it appears (in naive realist fashion), which is contradictory to the final claim being made. The proof thus fails, even were its thesis in fact true. Yet this old argument persists in ignorance of Steiner, as for example in Munevar (Ref 7).

My response is that the role of the senses is to make us conscious, so the whole argument is a non-starter as nothing is being "conveyed" as is assumed. Rather we are awakened to qualia some of which are not subjective. Thus I am by implication accepting that there is a world containing the qualia, and clearly my position is not idealism as I reject the supposition that the qualia are merely subjective. Is it realism, then? This hinges on how I think about the fact that thinking supersedes the subjective-objective distinction. To streamline the discussion it will be helpful to give a name to the universal entity referred to earlier that is implied by this fact. To avoid any pre-conceptions at this stage I will choose a rather neutral term, say the "Intermediary" as this entity relates us all via the universal aspect of thinking. Clearly each of us must find our own relationship to the Intermediary by means of the awakened thinking that is attainable through self-development. I accept no dogmatic or institutionalised strictures.

Solipsism, the view that only I exist, would say that there is only the subjective, so the fact that thinking distinguishes between the subjective and objective is true but vacuous. I reject this simply because thinking does make the distinction. Furthermore we have no control over the content of our perceptions, other than attention or inattention. We experience events that are contrary to our own well-being, showing that something is going on outside our own control and is, on this view, perverse. Indeed omnipotent and omniscient we are not. So I am not the only player on the field.

Naive realism, the view that all that appears to the senses is real, is more interesting than in other philosophies because it could be claimed that if qualia are not subjective then they always conform to reality. However I am not claiming that all qualia are objective, and have already discussed possible sources of error in our perceptions, so I reject naive realism.

I reject transcendental realism, which says that our experience is only the "footprint" of a higher transcendental reality, because I reject the implied dualism. Thinking, as we have seen, overcomes any such dualism. I do not thereby accept or reject realism in general, only this version of it. A watered-down version of this is quite acceptable i.e. that there are transcendent aspects of our experience, the two forming an organic whole, thus avoiding dualism.

I also reject the view that there is a reality independent of ourselves i.e. I reject the converse of solipsism, because of the Intermediary which joins us to other entities.

I reject anti-realist subjectivism and similar anti-realist positions as incompatible with the view of thinking considered here.

I accept the existence of other beings apart from myself, beginning with human beings, and also the Intermediary. I also proposed an organic concept of universals which I suggested could open out again into a richer experience of the world. I thus accept the world as real in some sense i.e. as existing. This does not entail the naive 19th Century concept of matter as an inert non-conscious substratum of existence, nor any other substratum for we find no evidence for that. What I know about through thinking is the existence of myself as an agent who thinks, feels and wills, and I know directly of other such agents (e.g. human beings), and I know they relate to one another. The common ground uniting us all is the Intermediary, which being universal must relate all of us. It is far from being an inert substratum of any kind, though! Indeed it is the reverse of inert as we have seen. Thus the usual concept of realism does not capture my concept of reality. In particular the mutual actions between entities precludes the realist dogma of things being independent of our beliefs ... In Plato's sense it is ideal in that it is non-material in the 19th Century sense; in Aristotle's it is real in the way I have described.

Physical World

I must, though, come to terms with the apparent realism of Nature in the usual sense, and the nature of what we call matter. We have seen that quantum physics renders us good service in destroying the 19th Century concept of matter. Indeed quantum physics is nothing if not a theory of continuous action, as illustrated in its concept of the zero-point field, in line with my position. So there is no inert substratum of existence at its level. Quantum physics fails, however, to provide any content beyond mathematics, so its usefulness for my present purpose ends there.

The order and lawfulness evident in the world, ascribed to nature, must reside in the organic arrangement of the universals. This means a subset of relationships maintained by the mutual interaction via thinking between the entities involved. Rationalism applies to the physical world, or natural science would be impossible and the logical consistency of our environment from day to day would not exist. I claim that as it is logical, that consistency is grounded in thinking and must be underwritten by the Intermediary and strictly maintained. It must be actively maintained rather than being a passive substratum in view of its grounding in universal thinking. But its rather mechanistic manifestation indicates a regimented subset of the universals without freedom or caprice. It is what I will call the physical plane, but is not "made of stuff". Matter is then an emergent property which supervenes¹ on the sum total of the activities making up that aspect of the world.

In discussions of physicalism it is not claimed that for it to be true the physical world must be closed for cause and effect i.e. all physical effects have physical causes, but conversely it is claimed that causal closure entails physicalism. Based on my view causal closure is contingent. An example of contingent closure is a game where the players are committed to obey the rules, so that every outcome conforms to the rules and is thus caused by actions which accord with them, although in fact that is not fundamentally necessary as we see in football where fouls abound! What this means is that the physical world appears to be causally closed, and physical experiments will necessarily conform to that as they are framed in terms of it. However they do not thereby prove physicalism.

The actual properties of the physical plane must be investigated by physical means, so the experimental methods of the physical sciences are in no way undermined by my thesis, although physicalism and materialism are rejected. In those experiments it must never be lost sight of that the apparent causal closure is contingent so that false conclusions as to their ultimate significance are avoided.

¹The term "supervenes" was introduced by David Lewis in the discussion of physicalism. His model was a dot-matrix picture which has global patterns that are said to be supervened on the matrix. I have turned physicalism on its head, though. The dots in his matrix are independent whereas in mine they are inter-related.

I am thus committed to an organic view of the world in the sense that there are in principle no isolated Leibnitz-style "monads" which exist independently of everything else. The appearance of such things - like stones - is emergent, not fundamental. Quantum physics is consistent with this as its particles are anything but monads, being linked in principle to the whole universe via their wave functions (a wave function is a complicated set of superimposed non-physical waves which relate a particle to all other particles). But wave functions, on a major interpretation of quantum physics, "collapse" when an interaction occurs so that momentarily an actual isolated particle appears briefly, divorced from the universe at large. Alternatively a "track" appears associated with a definite velocity, along which the particle is travelling although its position is unknown. This is consistent with an interesting and important possibility in my scheme, namely that thinking entities can fall out of connection with the Intermediary.

Mineral World

Physical laws imply no substance, as eloquently illustrated by quantum physics. However minerals are substantial and often hard, and I distinguish the physical from the mineral. The mineral is said to be so in comparison with the realm of the living, whereas physical laws apply to both. The thought schema that clearly applies to the mineral is that of purely external cause and effect. We do not observe stones behaving like plants, and if one breaks we seek external causes for that, such as impact or heating or cooling. I thus characterise the mineral as conforming fully to the causal closure of the physical plane. This gives it its apparent substantiality, which is thus both emergent and contingent. There are other internal modes of change, though, associated with chemistry. Although more inward than the purely physical, we nevertheless find causal closure is again fully adhered to.

Organic World

The organic world presents us with much richer modes of behaviour than the mineral, including birth, growth, repair, nourishment, mobility, reproduction and death. Cause and effect appear to be different, for although organisms are subject to external cause and effect relationships, these do not explain the above list of characteristics. There we see that growth, for example, implies inner processes: we do not seek to understand it by purely external influences. The phenomenon of repair shows that the holistic form is maintained, an entirely non-mineral behaviour. Growth, repair etc. clearly supervene on the physical laws without breaking them, which is possible since the latter are contingent and thus can be augmented to permit that without losing their own coherence. Since the physical and chemical laws are no different *in vivo* than *in vitro* such a process of supervention is necessary for life to exist. Death is the return to the mineral state. Now even physicalism does not necessarily entail causal closure, and it seems that organisms are not causally closed in the way minerals are. However that does not mean physical laws are broken, as much detailed research has shown, but rather they are augmented. The results of the investigation of chemical action in organisms are not thereby doubted, but the physicalist conclusions drawn are suspect, as most of the work is based on experiments and measurements *in vitro*. The clear, indeed radical, holistic difference between the organic and the mineral cannot be argued away, and in any case we have seen that physicalism is not absolute in my scheme.

However, much effort has been expended in attempting to trace organic behaviour back to chemical processes and subtle quantum mechanical ones. This has not been an unqualified success and very often it is the dead remains of an organism that are studied in this way. The attempt to reduce an organism to the purely physical through the discovery of DNA and its properties has occupied science for decades. There are two fundamental observations to be made about it: DNA appears itself to behave quite like an organism *in vivo* with inbuilt repair facilities and jumping genes, so "organism" does not seem to have been evaded. Also the DNA studied in the laboratory is mineralised, not *in vivo*. The assumption has tacitly been made that there is no significant difference between the two.

Noting the different way cause and effect appear to operate, I will consider how the organic may differ from the mineral. This hinges on the closure. Since the physical closure of cause and effect is contingent, the contingencies can change. That certainly appears to be the case here. What is interesting and subtle about this is that organic laws can supervene on the physical ones without violating the latter, if the contingencies are augmented suitably (not reduced or completely changed). An example comes from quantum physics: groups of particles and photons can spontaneously appear out of nothing providing they only last for a very short time and then spontaneously disappear again. It is like an employee who dishonestly borrows money from the safe but manages to return it before the next audit. The time between audits is the decisive factor for him. There is a similar decisive time in quantum physics within which the law of conservation of energy may be broken, but outside of which it may not. Hence our particles only enjoyed a (very) brief existence. Overall the law of conservation of energy is obeyed, but it is now contingent. The consequence is that another mode of action supervenes on the basic laws giving rise to the zero-point field and supposedly affecting, for example, the stability of the hydrogen atom and the possibility that black holes may radiate energy. The result is that new phenomena are possible although the laws of physics are obeyed in gross. Indeed this demonstrates my thesis that the closure of physical laws is contingent.

Thus organic laws supervene on the physical to permit organisms to thrive in six of the seven ways mentioned initially, but without thereby violating the overall closure of physical cause and effect, in analogy with the above example from quantum physics. A way this can be envisaged is if rates-of-change of chemical reactions and physical processes differ from those in the mineral state. No physical laws are broken if a chemical configuration persists longer than normal, allowing organic substances *in vivo* to persist and sustain organic activity that would otherwise decay too rapidly if *in vitro*. Or conversely a process may be speeded up to secure a configuration that otherwise would mineralise. In fact this does happen with enzymes, which are like catalysts in the organic realm. A catalyst either initiates or speeds up a process, an inorganic example being iron which catalyses the production of ammonia without itself being consumed. Organic catalysts, i.e. enzymes, control many processes in the body such as the breakup of proteins when that is required. Enzymes are switched on and off by a feedback loop e.g. by the concentration of the substance they are producing such as adrenalin. The number of such feedback loops in a higher organism is large, and control engineers will appreciate that the stability achieved is impressive indeed.

I conclude that organic processes involve an augmentation of the contingent physical laws that retains the latter intact, because I remain true to holistic laws of organisms that are manifestly different from the mineral. This will involve the activity of a range of universals not active in the mineral. They comprise what is called "life". Strict causal closure as for the mineral is not sustained.

Animals

Animals exhibit sensitiveness and independent movement, unlike plants. This general fact is neither contradicted by exceptions such as the Venus fly trap, nor by "occult" results using lie-detector techniques on plants. I refer to the plain common-sense fact obvious to us all. Locomotion needs sensitivity to be controlled, so the two go hand in hand. The obvious awareness of their environment together with their sensitivity to pain suggests that higher animals possess an inner life comparable at least in some respects to our own. By analogy I assume their experience involves qualia, but I do not know that for certain.

Many amazing abilities are displayed by animals, such as the navigation ability of migrating birds, the ability of birds to build secure nests, the intelligence of squirrels, the organisation of the hive life of bees and ants, the use of tools by Caledonian Crows, the ability of trout to swim upstream, and so on. The exquisite adaptation of their bodies and organs to their ecological niche shows remarkable specialisation, and also to what an extent they are part of nature. There is an obvious contrast with humans who emancipate themselves from nature as much as they can, and show much less specialisation and hence an astonishing adaptability. In animals species adapt to changing conditions if they can, whereas every human

individual can, if forced to, adapt rapidly to changes. Whereas animals adapt to their environment we now adapt the environment to our needs to an increasing degree through technology.

The concept "human" cannot be reduced to some special outer characteristic such as tool-making, farming or whatever as such outer traits are after all found in some animals e.g. the Caledonian Crows are tool-makers, beavers modify their environment, some marsupials are farmers and so on. However the difference is not one of degree: there is a quantum leap from such things in animals and the human case. Tool-making is not a universal characteristic of animals, and where it occurs it is highly specialised, as is the case for other special traits. Language is sought for and found in some higher animals, but it is hardly comparable with the human use of language. I will clarify later why I say this.

The distinction between animals and humans is not found in such external traits, but in the quality of inwardness displayed. This is not amenable to primary-quality scientific investigation for the usual reason: we know of inwardness - of feeling, thinking, artistic achievement and so on - through qualia and introspection. This is illustrated by the lack of scientific consensus as to whether animals are even conscious at some level, the view often being stated that they are merely survival machines. Perhaps the biggest insult we can level against the animals is to anthropomorphise them! They are a wonder unto themselves without needing to be humanised. The agenda is usually the reverse, namely to try and show that we are no more than higher animals.

To deny animals any inwardness (at least in the warm-blooded) is to fly in the face of the obvious, but it does not seem to be the same as our own. Their inwardness appears always to be part of their relation to their environment (which includes other members of their species), whereas ours clearly transcends that.

Thus we may characterise animals as having a relation to their environment that includes inward responses and instincts, unlike plants. This inwardness appears to be as finely specialised as their outer forms, but it is species-bound. The wonderful part played by animals in nature is as part of nature, not as individuals.

This leaves aside domestication which provides another kind of niche to which some animals can adapt. To watch a well-trained sheepdog is an inspiring sight, or to see the relation sheep may have to their shepherd shows a remarkable human ability to work with animals. The latter have then been lifted to some extent out of nature in the sense that more than mere species is involved. This is even more the case with pets where a separation from the species seems to occur, as illustrated e.g. in the case of pet mice which are killed by wild mice if they escape. The inwardness of pets seems to be altered by their relation to humans, ceasing to be purely that of the species. However that does not make them human, but again reflects upon what we can do with animals. This must never be overlooked when scientific experiments are done with animals, a factor not always mentioned. It also raises the important issue of what "relations" are, for domestication is a relationship established between animals and humans. I will return to that later.

Human Beings

Human beings have three particularly distinctive properties: they think, they have language and they speak of the "self". Scientific research attempts to discover whether any or all of these properties are shared by animals. I have maintained a distinction between animals and humans based on their polar opposite relationship to nature, and that a non-domesticated animal is species-bound, and while admitting that much is shared I maintained that there is a quantum leap between e.g. speech in animals and human beings.

Thinking has already been considered at length. It may be noted that the thinking displayed by animals is, if carefully observed, sense-bound. Observe a squirrel seeking a way to reach some protected nuts: it moves round the area in an agitated manner looking from every angle for a solution. Humans can think abstractly as in advanced mathematics and are clearly not merely sense-bound.

Language is not a primary-quality phenomenon, but a qualia-based one. It is necessary to be conscious to understand the meaning of a spoken or written sentence, and we have seen that the content of consciousness normally rests in qualia of some kind. The quantum leap from language in animals lies in the non-sense-bound use we make of thinking, enabling e.g. comparatively rapid evolution of language, and the often taxing complexity of grammar and use of context required as a result. Also our use of language reflects our use of concepts, there being a kind of symbiosis between the two, as young children learn to think based initially on language, yet words are only coined and understood after the corresponding concept has been grasped. Nouns and verbs are clearly concept-based, but so are all words, for others such as prepositions depend upon the understanding of relationships which again is conceptual.

It is difficult to refrain from observing that language appears to be cleverer than its users! Also older languages such as Sanskrit appear to be more complex than e.g. English. The complexity of German grammar, for example, taxes most foreigners to a degree, it being hard to acquiesce to the idea that such was required by hunter-gatherer or other primitive cultures as currently conceived. This points to the symbiosis between thinking and language, and the involvement of the Intermediary in thinking shows itself here. The example of Sanskrit, a very ancient language, suggests that our relation to the Intermediary is changing, and our greater independence has changed the balance from the Intermediary towards our own initiative and therefore to the use of less complex language which matches that change.

I have already discussed the "I" or self, and we saw that any attempt to find our true being merely within our subjectivity must fail, and all that we can expect to find there is a "footprint" of the universal aspect of our being. I mentioned a "higher self" without further explanation, remarking that our ordinary self is a reflection of what we might call our universal or higher self, based on the fact that thinking is above the subjective/objective distinction. Subsequently I introduced the concept of the Intermediary, so it follows that the higher aspect of our being - or higher self - rests in the Intermediary in some way. Combining this with the observation of how our relationship to language has changed, and how consciousness has changed in parallel, I deduce that what starts off in the higher self may by degrees be realised in the lower. This leads me to discuss evolution, but first I must return to relationships.

Relationships and Beings

I noted earlier the importance of the relationships between animals and human beings. A genuine relationship involves interaction and exchange. The most important relationship we have encountered is that between ourselves and the Intermediary which exists via thinking. We need to distinguish between bare interaction and a relationship, for machines interact (e.g. computers making up the Internet), but the concept of relationships as existing between us and the Intermediary, or between each other, or with animals, is clearly more than that for it involves qualia and thinking. This is reflected in language which expresses the relationships discerned by or based in thinking. The relationships we experience between perceptions or qualia, including feeling, are conscious because we think. Relationships, then, are thinking-mediated and are thus not abstract, for abstractions do not amount to relationships. A relationship is a "thinking-fact" as it were, often expressed also in feeling. Those not between human beings must then be based in thinking of or within other agencies.

Now in considering the "I" earlier I noted that thinking is a form of inner action, and some entity must be acting. This entity I will call "being". Note that it is not conceived as an inert substrate but is quintessentially active. The action and will of human beings is obvious, and it is easiest to grasp the concept "being" in relation to humans. It is also obvious in higher animals, for observation of all such entities shows there to be more than mere mechanism: an active will is discernible, often very powerful. This is because our thinking discerns a wholeness in a being, and directed activity which can sometimes be dangerous and difficult to avoid. We can legitimately argue on the basis of our holistic experience here, since we are not in the thrall of physicalism. The concept of "being", which has vexed philosophers sometimes to distraction, is unavoidable and furthermore is a clear part of our knowledge since we successfully connect the concept "being" with certain perceptions to good effect in life. How would human partnerships prosper if the parties really regarded each other as mere machines? Even out-and-out materialists do not behave towards each other in accordance with their own philosophy.

As relationships are based in thinking (I am not ignoring that they are often expressed through feeling) we are led to propose that genuine relationships are not abstract but themselves mediated by beings. This throws a different light on "universals" which are relaters *par excellence*. We go beyond a shadowy notion of universals to the idea that our rather abstract use of the term, reflecting our present onlooker-style consciousness, hides the fact that they are beings. Goethe came close to this when he grasped the idea of the primal plant, but apparently he never really made the step. Rudolf Steiner did make the step most comprehensively. We thus end up with the notion that reality consists of beings and the relationships between beings, which ultimately are also rooted in beings.

At this point many interesting deductions may be made, but we need to avoid superstition. For example we do not wish to end up pathetically trying to placate beings, or flatter them, or trap them to our service as in magic. On the other hand we need to recognise both their and our dignity as beings, and act towards them in accordance with their dignity. This can only be done through knowledge and should never be based on fear, speculation or manipulation. Knowledge entails observation as well as thinking, and there are people who perceive what most of us as yet do not. It is necessary to observe carefully such claims to see whether they bear real fruitfulness for life, and if not to give them a wide berth.

I will not enter upon speculations here, but simply note that many relationships between others and between substances involve beings of various types. Above all the Intermediary must be a being, in the nature of the case. I will return to that topic later.

Evolution

Evolution is not a new idea, originating in Greece particularly with Anaximander and Empedocles, and recent scholarship has deduced that it was implied in Aristotle's teachings. Charles Darwin and Alfred Russel Wallace proposed the basis of what is now called "Darwinian evolution", which is based on purely natural processes involving natural selection, variation, mutation of genes, and very recently a resurrection of Lamarck's ideas on the inheritance of acquired traits. It is important to realise that there is nothing logically wrong with the basic idea, for it is used successfully to design technological devices (of which more shortly), but a question remains as to whether human evolution actually happens that way. After all many logical theories can be proposed for our origin including creationism, evolution, the intervention by extra-terrestrial agencies, the arrival of suitable molecules from outer space to kick-start life on Earth, and so forth. The issue is "how did it actually take place?".

First of all, let us dispose of the idea that there is something logically wrong with Darwinism. An experiment was done some years ago to design an electronic circuit to respond to the words "on" and "off" with complete reliability - in order to switch a light - using a "genetic" approach. Thirty components were wired to a board which could be connected together in many ways, and then various connections were tried, specified in a gene-like manner, and the more successful ones were "inherited" for the next attempt. After over 1000 "generations" the circuit worked perfectly. The strange thing was that one component was not connected, yet if it was removed the device did not work! (This was probably due to what electronic engineers call "stray capacitance"). The method of what is now called "genetic design" is firmly established and works well, and models Darwinism in its approach. So clearly there is nothing logically wrong with Darwinism, at least in the simplified form used in genetic design.

The reason I throw doubt on Darwinism as the sole factor in human evolution lies in my rejection of physicalism, and the fact that qualia and thinking play decisive roles in our life and behaviour. Darwinism is by definition a primary-quality purely natural "blind watch-maker" process, and so cannot account for anything decisive from the realm of secondary qualities. The physical evidence for evolution based on residual remains, comparative anatomy and so forth is not thereby discounted, only the supposition that Darwinism is a complete account. Thus evolution is not thrown out lock, stock and barrel, only the purely Darwinistic form of it. Indeed we saw earlier that thinking and consciousness have changed in the course of time, and evolution can be envisaged as acting also there, not just physically. But this involves the Intermediary, and we find not "intelligent design" in its simplistic form, but "intelligent evolution". Christ said "they strain at a gnat but swallow a camel", a rare piece of humour in the New Testament! Here the camel is the broad-brush idea that living organisms in their present complexity "arose by chance" (notwithstanding the sophistication of the arguments), while the "gnat" is the recognition of the intelligence of their design. It is understandable that natural scientists are Darwinists, just because they seek to understand the world without recourse to the supernatural, while it is as easily comprehensible that creationists - acknowledging a divine presence - suppose the divine was involved in our origins. However St. Thomas Aquinas, one of the greatest Christian thinkers, thought it was rather far-fetched to suppose that God personally created every organism down to the last microbe and insect, there being - it is estimated - between tens of millions of species only two million of which have been named and described. Rather, he acknowledged both divine creation and evolution. The entrenched position of creationists seems in reality to be an anti-Darwinian stance more than an anti-evolutionary one, or surely they would see the sense in what Aquinas said (that is, on the assumption that God exists).

Is it really too much to combine evolution, for which there is good evidence, with intelligence? Based on the premises in this essay that seems the only sensible course to take. We have seen causal closure is valid in the mineral realm but not in the living, yet it is just the living that we are concerned with. So a purely naturalistic primary-quality based concept of evolution is highly suspect. Since, furthermore, concepts and universals are part of the world, and since they are bound up with thinking and intelligence, that factor simply must be at work in evolution. Rather we see the evolution and complexity of organisms as being

driven by the need for the ideal aspect of the world to have a means of expression and action. That inverts the whole procedure and is in accordance with the contingency of physical laws and causal closure, which permit organisms to arise from intelligence without violating physical laws (see the earlier discussion of this). That unfit organisms will die out is hardly "rocket-science", and certainly not contradicted by our position. Neither is the possibility of variation occurring in organisms, indeed we expect that as the universals become expressed ever more fully. What we cannot do is deduce the whole of nature ourselves by mere thought; we must needs be empirical both with respect to observation and - in a sense - intuition.

Freedom and Initiative

Whether or not we are free has been one of the central questions in philosophy. This requires us to apply to ourselves the process of gaining knowledge that we have explored. Thus we need some concepts relevant to the issue.

We know that we are not unconditionally free because of the fact that education, training, parental influence and the state of our body exercise powerful influences of which we are not always aware. Thus many of our deeds result from motives that are unclear. Arguments against freedom usually point to such factors influencing our actions. However I wish to keep open the possibility that we can know our motives at least on some occasions if not in every case. Thus the concept "motive" is of primary importance here. On the other hand we know that we have freedom of thought at least to some degree because we experience that directly. An important concept bearing on this is "initiative". We can take initiative by deciding to think about something and then exercising the inner effort to keep up the thinking. We are under the impression that we are taking the initiative, and if so then there can be no argument. Thus we must examine motive and initiative.

Initiative

I have already touched on initiative by implication in discussing Norretranders' findings. I pointed out there that the source of an action is not reducible to physics alone because it may stem from qualia and thinking. Physicalism will seek to replace initiative by unconscious processes reducible to physical laws, which are rooted in primary qualities. I do not deny that such processes may act, and lead to action, but I do not call them initiative. By initiative I mean action which stems from the realm of secondary qualities where we are both conscious and thoughtful. This is possible because through thinking we may intuit a relation between qualia which then leads to action e.g. qualia related to a friend and qualia related to an angry dog rushing towards him from behind. The situation will be accompanied by changes in primary qualities in the body but is not reducible to them.

Motive

We can reasonably say that an act is free if we know the motive and have the choice to act on it or not, so motive may be analysed into the reason for the action and the drive required to carry it out. There can be several sources of the reason and first I will consider those that impose themselves on me to a greater or lesser extent. First of all there is *egoism*, where I act for my own advantage. Secondly I may obtain the reason from some recognised *authority* such as a church or person I respect, and thirdly I may have formulated fixed *principles* upon which I base my actions. These are all considered to impose themselves because they are generic i.e. they do not originate from the actual circumstances within which action is required, but instead are imported and adapted appropriately.

If I derive the reason directly from a particular circumstance without reference to the previous three sources then it is imposed by no one but myself, and may be called *insight*. It is possible to be quite clear about all of these sources, although egoism is problematic because it can so easily masquerade as something else. The latter, however, is a matter of self-knowledge which - if lacking - can in principle be attained. So as far as the ideal aspect of the motive is concerned, it is knowable.

Whether or not an action is actually taken depends upon the inner drive to carry it out in full. Again we may from experience distinguish several driving forces, and first I will enumerate a few that are based on perception. The first is *instinct*. It is easy to realise I should avoid a flying object, for example, and instinct will cause me to do so. I am not very free here as action is automatic. Another driving force is *feeling* such as pity, outrage, love, hate, revenge and so on. Again this is driven by perception, namely of myself, and although less automatic than instinct it is not always so easy to plumb the source of my feeling. Thirdly

perceptions that evoke a memory of past experience can act as a driving force, an example being a leak in the roof of my house which I know from experience must be dealt with quickly. This source of action is *practical experience*, which unlike the first two is based on a judgement as thinking is essentially involved. More freedom is evident here due to the involvement of thinking. However, the need for action comes from outside, and the sheer inconvenience may not be felt as fully free!

As long as I must respond to perceptions my freedom is less than total, although not necessarily entirely absent. In the third case I would feel equally unfree if prevented from fixing the leak. The remaining possibility is that the drive comes from my own will and not from an outer perception. In such a case full freedom seems possible as it is based entirely on my own *initiative*.

The greatest freedom lies in motives based on insight and initiative, as in the ideal case external factors play no part. I do not mean that there are no external percepts at all as we must perceive and understand the situation within which action seems desirable. I mean there are no external factors involved in the motive that responds to the perception, as already explained.

I do not accept the objection that all actions may unconsciously be driven by the organism as that objection assumes physicalism, which I have already rejected. Throughout this discussion of freedom it must be born in mind that secondary qualities or qualia cannot be reduced to primary qualities, and most of the objections to the possibility of freedom are based on primary-quality laboratory tests. Indeed it is usually said that a thorough and scientific study of freedom begins with such tests, which is just when its arena has been abandoned!

Thus I conclude that it is possible - if sometimes difficult - for us to know our motives, and that when we do our actions are free. Hence freedom is not unconditional, and most of our actions are more or less unfree, but nevertheless freedom is possible and ever more individual the more we are able to act on insight and initiative. Discussions of whether or not we have freedom of choice have not been entered into here because that is the least significant type of freedom, freedom of initiative being of far greater value. Initiative in any case entails freedom of choice when we are constrained only to have choices.

Freedom may thus evolve, for the concepts involved in insight may continuously be improved, and our ability to take initiative be enhanced through self-development.

Finally, I am not claiming that the only justified actions are of the fully free kind. Egoism, for example, is fully justified if through it I avoid unnecessary injury. The four kinds of reason may be combined variously with the four kinds of driving force, which the reader may like to explore further.

Love

Why should thinking be bothered with the world at all? We may recognise several relations between the two. I may be intensely interested in something other than me, such as art or science or gardening or whatever, and seek to unite myself with it through thinking (and then feeling and will). Or I may feel strong antipathy towards something imposed on me requiring expenditure of thought, such as a new government regulation. These two opposite kinds of relation ultimately become either love or hatred as is easily observed. In the first case not to be bothered with the world is not in question, while in the second we must be. An important example is mathematics, where we find both extremes and their intermediates evident in different people. Those who love mathematics demonstrate that the love lies in the thought process itself, for it occurs entirely in a realm of thought. I am not thereby holding up mathematics as being above everything else, but as the example which shows most clearly the involvement of love in thinking itself. Thinking is not merely an exercise of logic as should long since have become clear, and now we see another most important - in fact the most important - quality it possesses. Thinking full of fire and enthusiasm is a beautiful thing! It may well need to be tempered by logic, but research and discovery are best started with

such thinking rather than a clinical, cold, merely logical kind of activity. Enthusiasm is love in thinking. The fourth kind of reason in a motive - insight - will be found to require this pure spiritual kind of love, and lacking that only the other three kinds of reason will operate.

Initiative requires courage, a quality *par excellence* requiring love, for why otherwise would we risk ourselves in an act of courage? After all absence of risk requires no courage. May we not, though, act courageously out of duty? Certainly, but then we love our duty. Without love in the will no initiatives will be taken. Again, as for thinking, we do not mean by love some form of syrupy sentimentality, but a spiritualised quality of reaching warmly out beyond the narrow confines of the self.

I am not omitting feeling, however, in dismissing sentimentality. Empathy is love in the realm of feeling, and many noble deeds are based on that. This lifts the driving force related to feeling out of its possible unfreedom into full freedom.

A fully free action based on insight and initiative thus involves love, on two counts. Freedom is grounded in love!

Why have I not defined love? Because like apple pie it must be experienced, not defined. This is a truly binary situation: if you need a definition you cannot have experienced it, but if you have, a definition is irrelevant.

Practising Freedom

For any action to take place three stages may be recognised. First an intuition of the need for action, for without thinking no human action will occur. However we meet here *moral* intuition in contrast to *cognitive* intuition, i.e. an intuition relating to action rather than to knowledge. The latter must, of course, precede the former.

Secondly we need to translate our intuition into a picture of how it may be realised. This can be very difficult, and generally is much harder than moral intuition. Can you create a concrete picture of how to enable everyone to act only out of love? Many have said something to the effect that all our problems would thus be solved, and so they would. But who has given a practical prescription? *Moral imagination* is the ability to translate an intuition into a definite means of achieving it.

This is not enough, however. Is our action wanted by anyone other than ourself? If so, how do we set about realising it in harmony with the current world situation (assuming it is not a justified radicalism)? The third stage of *moral technique* establishes the laws and status of the situation into which the action is to take place i.e. once again love is involved, namely love of the world. Otherwise we would egotistically impose our action out of self-love. "Technique" is here robbed of its manipulative connotations by that love.

If an action fulfils these conditions we may say that it is "good".

Knowing the Other

Gaining concepts of other people is a tricky business. It is sometimes said that first impressions are misleading, but often they have a certain validity. If I am at all individual then an assemblage of general concepts cannot be sufficient to describe me, for they precisely miss what is individual, whereas a first impression may be a participatory glimpse of the individual, albeit incomplete. How can we approach this more precisely? How can we arrive at what is unique about an individual? Or is that uniqueness an illusion?

One possibility arising out of our considerations so far is that since the Intermediary connects us all at the thought level, a bridge to the other is available through the Intermediary. The only person able to think an individual's concept is that very individual, and Steiner suggested that the individual concerned must do that in us i.e. we must yield our own thinking activity and allow our consciousness - perhaps momentarily - to host that thinking. This seems an intelligible possibility via the Intermediary, which also says volumes about one role of the Intermediary. It is difficult to envisage Steiner's suggestion having a basis otherwise. The decision as to whether that happens, and whether the uniqueness that is entailed by individuality is then verified, must be achieved by a free initiative to attempt this process, not by further theory. The importance of how we listen to others now arises because in ordinary life that is the most intimate bridge to another. It is not actually so difficult to suppress one's own thinking when listening intently to another person speaking, allowing their thinking to live in one. However, the shadow side to that may be observed when crowds are swayed by the words of a charismatic speaker like Hitler. Indeed that phenomenon supports the view here considered that people can yield their own thinking and permit that of the other to enter them instead. It is doubtful that the Intermediary was involved in that example, though, and the possibility of other entities being involved will be discussed when I consider the Intermediary in more detail below.

The Intermediary

I introduced the term "Intermediary" to refer to the universal aspect of thinking entailed by the fact that thinking lies above the distinction between subject and object. From the above discussion it is now clear that this too involves love, for as our thinking has been seen to entail love and is rooted in the Intermediary, so must be that of the Intermediary. When we reflect on the fact that all thinking beings are related by the Intermediary we see what a powerful force of love must be involved. This is universal love binding the whole of creation together. I give it no further name as this essay is not intended to be secular. What is important is that in the nature of the case the relation of a person to the Intermediary is individual. That is prior to all claims made by organised groups claiming to know this Being. Any group claiming exclusive rights or an exclusive relation of knowledge or power is self-contradictory, because in the nature of the case this Being is related in love to all people.

That is not to deny that outstanding leaders and individuals over the millennia have given us insights into this Being, but when exclusive sects and religions are based on such insights the trouble begins. And the root of the difficulties lies in two main directions: claims of exclusive knowledge and privilege, and claims of exclusive power. Both are divisive and again contradict the universality of the Intermediary. Religion is an individual matter, and in principle there may be as many religions as there are individuals. But as evolution progresses this would turn from religious anarchy to a mighty community of us all, for through evolution and self-development we will increasingly get out of our narrow confines and connect with each other's universality. Indeed it is better said that we will become aware that we share that universality. It should be said, however, that no criticism is implied against any individual belonging to any group they find inspiring, for that is the right of us all. I only wish to point out that groups are easily infected by the above two deviations, and fanaticism sets in when love for one group becomes metamorphosed into hatred for other groups.

What is the source of the above deviations? I mentioned earlier on that thinking entities can fall out of connection with the Intermediary. It is clear that in these cases thinking has lost its full connection with the Intermediary, and must therefore be related to such fallen entities. After all since we know thinking entities exist there must be the possibility of other kinds of thinking entities, possibly with other relationships than that of the Intermediary. This leads very far, and I will content myself with noting that the source of evil lies in the antithesis of the Intermediary, with a cold unloving thinking divorced from its origin. I also mentioned earlier that a concept with no domain has no connection to a universal and belongs only to the beings possessing it, so that they become imitators of the world in possessing their own non-universal concepts. *In extremis* this characterises the above situation. In the long term the rifts need to be healed.

On the other hand to act for the good is to act out of love as described earlier, in connection with the Intermediary, for such an act serves the world.

It is not surprising that what unites all people starts with thinking, but equally love has followed, and the necessity for effort in thinking ushers in, for the Intermediary, universal Will as well.

The Spiritual World

The spiritual dimension of the world is grasped by some quite readily, but not by all. It is all too easily laid down rather dogmatically that "spirit" should be definable and sharable in a similar manner to facts of the sense world. But that is precisely what is not possible, and precisely what makes it "spiritual". A more open mind for other modes of experience than what we are used to is required, with the accepted proviso that there is some basis for testing it and working with it. The approach to it implied in this essay starts with thinking about thinking, where a content can be held in consciousness that is not sense-perceptible. The possibility of doing that has profound implications, and that possibility is open to all. Like any other skill it requires practice, training and patience. To give up at the first difficulty is as weak-willed as giving up a professional training because it makes demands that are at first difficult to meet. I recall those in the Royal Air Force College who gave up because they were expected to do drill and gymnastics at 6 o'clock in the morning. That was a test, and they failed. Any true skill requires us to change ourselves, and approaching the spiritual is no exception.

What starts out as a seemingly shadowy process i.e. thinking about thinking, may blossom out into much more. However philosophising is not enough! Our inner life must be taken in hand and worked on strenuously, and that requires guidance. For a time, perhaps a long time, we are like spiritual caterpillars with little progress to be remarked, and then suddenly our efforts bear fruit and the butterfly emerges. Meditation is the means of training our thinking to take wing. An immediate test anyone can make is to concentrate upon a simple object like a pin or pencil and think about it for five minutes without any interruption. Can you do that? If not, that is the kindergarten exercise that must be mastered. Then a picture is constructed (not from memory) and held for as long as possible. A proper meditation first builds the picture based on a train of thought accompanied by definite feelings, and then discards the intellectual thoughts and concentrates solely on the picture and accompanying feelings. The remaining thinking is the effort to hold the picture in mind. The "gap" in thinking manifests here as the difficulty in constructing an inner picture without any external support. When this is achieved for a sufficient time on a regular basis, eventually the butterfly emerges, and a new world opens up to the meditator. In this way the spiritual takes on colour and form and reveals aspects of the human being and the universe utterly hidden from sense perception. Rudolf Steiner's philosophy applies not only to percepts and concepts drawn from the sense world, but also to these new percepts attained through meditation. And thinking together with sound judgement is just as important as in the world of the senses, testing that world and resolving appearance from reality.

What is revealed in this way is called the spiritual world. It has not been approached through any religious affiliation, but through systematic self-development. However, feelings are involved, particularly reverence. We are not, however, moving into a dualism of spirit and sense, but rather the hidden aspects of the world become available to us, just as x-ray telescopes reveal aspects of the universe that were always present and part and parcel of that universe. We then meet the beings of whom our ideas are the "footprints", as mentioned earlier. A new world of experience and work opens up to those successful in this enterprise. For the present universe will die, as is well known scientifically, and the work that then needs doing will contribute to its successor. The meeting with the Intermediary is the greatest gift and responsibility vouchsafed by all of this, and the Intermediary will then work with us at such a task. It is something that can only be taken on in freedom, and without love it is impossible.

Summary

To summarise what has been developed in this essay, philosophy requires a secure basis and should reflect what we actually do in life. We have seen that all we know depends upon the activity of thinking, which is the one activity that may judge itself, providing a secure ground for any and every enquiry, for all depend upon it. It is not an academically defined concept, but rather an activity that may be inwardly observed lying behind all the academically defined categories of thinking such as problem solving, forming pictures, remembering, organising and so forth. A primary result of thinking about thinking is that there is this inner willed activity common to all those categories. Furthermore it is possible to awaken to the activity of thinking in the "gaps" which for our ordinary consciousness are dark. Then the spiritual world opens up to us.

Having established that thinking is a self-sustaining activity in this way, the fact that it establishes the distinction between the subjective and objective shows that it lies above that distinction, in which case it is not itself subjective (unless coloured by feeling) and so comprises a valid tool for investigating the world as well as the self. Thus it bridges the Platonic world of ideals or universals and that of experience, overcoming dualism in the process. Subjectivity and error creep in where the individual makes false judgements, or fails to remove unconscious prejudices based on feeling.

Qualia and the realm of secondary qualities are an unavoidable and, in fact, primary part of our experience, which furthermore underwrite any confidence we may have based on so-called primary qualities. The normally assumed duality between the primary and secondary qualities is bridged by thinking, and a science that relies only on the former omits the very part of the world upon which our experiences actually rest. Physicalism is undermined by the irreducible fact that qualia exist, and need not all be subjective. The role of the senses is to make us conscious of qualia, not to "convey" them to us. Consciousness arises through this process, which combined with concepts acquired through thinking comprises our knowledge. This is in fact what we do every day of our lives.

All this may be applied to self-knowledge, and initially a knowledge of the motives of our actions, which enables freedom to be understood as partial but increasingly attainable. Freedom is not a provable fact, or otherwise, but a goal based on insight and initiative.

The fact that thinking is not subjective implies we participate in it together with a universal being I have called the Intermediary. The fact that every individual participates in this way shows that the Intermediary cannot be corralled into any organised institution, but rather provides the common spiritual ground we all share. This points to an evolution in the future where this will become more directly experienced, and outer divisions between people will fall away.

Conclusion

We do have secure knowledge based upon what we have become through gaining the concepts that enable us to know and work in the world. That knowledge is not complete but is valid as far as it goes, and progress consists in ever improving upon our concepts and ideas, and developing our power of thinking. At every stage we have a domain of competence which no one can take away from us. A breakthrough impending in evolution will be when concepts and ideas are grasped as the "footprints" in our consciousness of spiritual beings. Then they will lose their abstract and shadowy form and take on vitality and life. We will be able to work at the evolution of mankind and the world to usher in an even better world.

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