

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

REALISM AND THE LANGUAGE DEPENDENCE OF THE EXTERNAL WORLD.

A Thesis presented in partial fulfilment of the requirements for the degree of Master of Arts in Philosophy at Massey University.

RICHARD JOHN PERROTT.

1985.

ABSTRACT.

This Thesis falls loosely into 2 Parts.

In Part 1 (Chs. 1-4) a certain version of the view generally called "Realism" is put forward. This Realism is a view that can take either of two forms, one weak or soft, the other hard or strong. The first form states that there is an external world, which we experience and which influences language. The second form states that there is an external world, which is mirrored in consciousness and which is also mirrored in language. That is, the contents of consciousness and the contents of language correspond exactly to an absolute external world. This second stronger version (which I call "Metaphysical Realism") is refuted in Chapters 2-4.

Refuting it, however, still leaves us with the first view intact. In the rest of the thesis I argue that this first weaker version of Realism is essentially correct. This is because:

- a. Objects do indeed exist. (Ch. 5)
- b. At least part of what we do when we say we see X is refer to a genuine experience of X. (Chs 6 & 7)
- c. In a certain sense the world is known non-linguistically. (Ch. 8)

The final chapter, Ch. 9, is designed to show how language

influences what might loosely be called the "External World". Hence we end up with a genuine "Realism" which is yet in a sense "language dependent", for this "real world" is formed by language which then reports on the world so formed.

-----

ACKNOWLEDGEMENT.

A great many people have, inevitably, influenced both the fact and content of this thesis. Three people, however, have been especially important. Firstly: my wife Rosemary Lean without whose help both emotional and financial I would never have done any post-graduate work at all. Secondly: Mike Russell, with whom I have had many conversations over the last four years, conversations which were of inestimable value in forming my own philosophical views and expanding my philosophical understanding. Thirdly: Dr. Tom Bestor, without whose unflagging energy many of the views expressed in this thesis would have remained shrouded in obscurity, or, at least, would have been even more obscure than they now are. Finally: I would like to express my thanks to the entire Massey Philosophy Department. Had it not been for their particular approach to this discipline I would never have strayed this way at all.

-----

Table of Contents.

Acknowledgement.	page	1.
Chapter 1. <u>A "METAPHYSICAL REALIST'S" STORY.</u>	page	1.
Chapter 2. <u>DOES OUR CONSCIOUSNESS MIRROR THE WORLD?</u>	page	21.
Chapter 3. <u>DOES OUR LANGUAGE MIRROR THE WORLD?</u>	page	36.
Chapter 4. <u>DOES PRE-LINGUISTIC MEAN NON-LINGUISTIC?</u>	page	48.
Chapter 5. <u>OBJECTS DO EXIST.</u>	page	62.
Chapter 6. <u>SEEING IS AN EXPERIENCE.</u>	page	73.
Chapter 7. <u>PRIVACY IS INNOCENT.</u>	page	94.
Chapter 8. <u>HOW THE WORLD IS LANGUAGE INDEPENDENT.</u>	page	116.
Chapter 9. <u>HOW THE WORLD IS LANGUAGE DEPENDENT.</u>	page	140.
Chapter 10. <u>CONCLUSION.</u>	page	163.
Bibliography.	page	166.

---

Chapter 1.A "METAPHYSICAL REALISTS" STORY.

Most of us I suppose like to think of ourselves as realists; and if we don't, there are plenty of people only too prepared to tell us we ought to be. For instance, such people advise us to face up to "the hard facts of reality" and not to "go chasing pots of gold at the end of the rainbow". And this indoctrination starts right from our childhood. Consider the following children's tale.

"Once upon a time a fast talking tailor turned up at the court of a nameless kingdom and told the King of that nameless kingdom that he, the tailor, would make the King the finest suit of new clothes that anyone had ever seen. From his bag the tailor took what he said were bolts of cloth and held them up, one by one, for the King to see. As he did so the tailor enthused over the vivacity of their colour, the subtlety of their pattern and the delicacy of their weave. The King, not wishing to seem vulgar before this eloquent and sophisticated tailor, agreed that the cloth was quite peerless and ordered a new suit of clothes straight away.

The tailor set to work at once. For many days he snipped at the invisible cloth with his scissors. Then, for many more days, he sewed the invisible cloth with invisible thread. Finally the tailor announced that he was finished. The King donned his new suit and expressed his satisfaction. He paraded before a wildly enthusiastic court. The men were green with envy, the women were tipsy with admiration. They were very sophisticated people these courtiers.

The following day however there was a royal procession. The King donned his new suit of clothes and marched forth, surrounded by his knights and pages, in great pomp. The people, forewarned by the courtiers not to display their stupidity and ignorance by failing to see the intricacy and beauty of the King's new attire, applauded wildly. Then, quite suddenly, the King came alongside two street urchins who first tittered and then laughed in the brazen self confident way that common people often do.

"The silly old fart is starkers!" one of them shouted. The other blew the King a raspberry and they both slipped off into a side alley laughing derisively as they went.

At first there was a stunned silence, then there was a giggle, then there was laughter and finally there was a gale of laughter as first part of the crowd, then the whole crowd and finally the court itself laughed at their pretentious and duped monarch. In the cold light of those urchins eyes the mighty verbal illusion, born and perpetuated by the state had dissolved. No one can present a false picture of reality and get away with it forever."

This surely is an object lesson to us all, a lesson that, try as we might, we cannot change the hard face of reality: for if we do, we too are liable to be made fools of by some frank and odious urchin. We must report what we see for fear of ridicule and what we see cannot be altered by mere linguistic trickery.

But this, after all, is a rather nebulous moral. Surely, we are inclined to think, there must be a more precise way of tying down what the truth is and how to tell it. Perhaps we ought to say something like this. **FIRSTLY:** there are objects absolute and independent of us. **SECONDLY:** we see these objects exactly as they are for they are mirrored in our consciousness. It is this mirroring that allows us to know the world. **THIRDLY:** our language too mirrors the world; it is that that guarantees its truth. Of course it follows that **FOURTHLY:** we know the world first through perception and then put words to what we know. We must see the world before we can mirror it in language. This view is the view of a "Metaphysical Realist", a man who holds a "copy theory" of truth and knowledge. Even at a glance it seems persuasive. In its detail however it seems even more persuasive.

\* \* \* \* \*

Why Objects exist.

Why do we believe in bedrock objects? There are, of course, many reasons for this belief and I intend only to deal with the most crucial. **FIRSTLY**; man is a vulnerable creature and a creature with certain nutritive needs. In order to feed himself, and therefore survive, he must have an awareness of certain things as being food. Food may be absent or present within man's immediate environment. Food and nutrition may be imagined: but it goes without saying, a man who attempts to live on imagined food will quickly die. Thus food appears an external factor to man; something alien to himself, a physical object in a physical world. And not only does man need objects of a certain sort to sustain him; other objects are a threat to him. He may bump into trees, fall over precipices, be drowned by water, buried by landslides or himself become food for other living things. Any man who neglects the dangers of all these things will live a short life full of physical suffering. In fact, in a sense, it is impossible to neglect these things. They force themselves upon our attention: try as we may we cannot, for example, prevent water from having the ability to drown us or falls from breaking our bones. Objects and their dangers are part of our facticity. We are part of the life of the world and the world is the arena in which our drama is enacted and an arena is itself an object. So, there are biological reasons for believing in objects.

**SECONDLY**: we are all aware that sometimes our senses fail to work as they should. We know that sometimes we do not hear the lion

coming through the undergrowth or that we do not see the loose stone that will throw us over the precipice. We know that if we close our eyes we do not see the tree outside our front door; but we can still feel it if we approach it, we can still smell it in the air and hear the wind blowing through its branches. Failure of any one sense does not involve the simultaneous failure of all other senses. If I stop seeing the tree the tree is still just as scented and just as hard. Indeed, if all our senses stop, if we cannot see, hear, smell or taste the tree, we believe we will still feel it. (That is why "solidity" was included in Locke's Primary Qualities.) So objects go on existing and being either lethal or nutritious or both, even when virtually all our five senses fail. (Indeed, even if we lost our sense of feel, we should still expect to be eaten by the hungry lion.)

THIRDLY: we all know that sometimes we get things wrong; especially when we eat strange mushrooms. Now and again we see hippos crossing the road when there are just no hippos there. There aren't any footprints left, no hippo droppings remain and there are simply no hippos in New Zealand anyway. Surely the easiest way to account for these illusions is just to say there was no object there: nothing nutritious or lethal, heavy or light, grey or brown. As before, we come to believe there are objects; because there are phenomena outside our conscious control which affect us for good or ill. In short, things in the world are "given" to us: and we must "passively" accept what is given. The world is composed of "that which is experienced" and "that which we experience".

\* \* \* \* \*

Seeing as Mirroring.

This seems especially so in the case of vision. Most of us I suppose believe that sight is our primary sense. But exactly how sight works has always been a difficult matter; especially once there are two orders, objects and perceptions of objects, or "that which is experienced" and "that which we experience". One of the earliest attempted solutions to this problem was that of Empedocles, repeated in Plato's Timaeus.

And of the organs they first contrived of the eyes to give light, and the principle according to which they were inserted was as follows. So much of fire as would not burn, but gave a gentle light, they formed into a substance akin to the light of everyday life, and the pure fire which is within us and related thereto they made to flow through the eyes in a stream smooth and dense, compressing the whole eye and especially the centre part, so that it kept out everything of a coarser nature and allowed to pass only this pure element. When the light of day surrounds the stream of vision, then like falls upon like, and they coalesce, and one body is formed by natural affinity in the line of vision, wherever the light that falls from within meets with an external object. And the whole stream of vision, being similarly affected in virtue of the similarity diffuses the motions of what it touches or what touches it over the whole body, until they reach the soul, causing that perception which we call sight. (Timaeus 45, b-d. Trans. B. Jowett.)

This seems a messy picture. Both object and viewer shoot forth tentacles of light which co-mingle and the vibrations, emitted by the object, pass down the tentacle emitted by the eye and enlighten the soul as to the nature of the object seen. Perhaps it was this very messiness which led later generations to ignore this picture.

Perhaps it was simply the ingenuity of Arab artisans and alchemists, whose optical devices suggested a better analogy, which led to the demise of the Platonic view. But, whatever the reason, a new, more PASSIVE view of seeing came to be adopted; a view in which a passively receptive body mirrored "that which was seen".

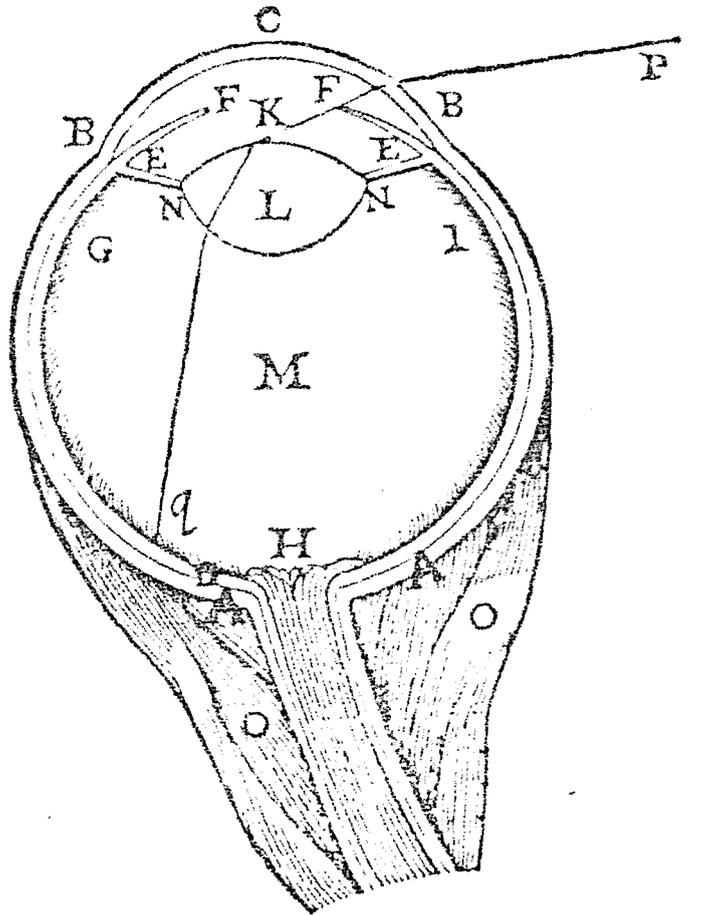
The first known exponent of the new analogy was an 11th century Arab scholar, known as Alhazen, who devised the first "camera obscura". This exciting toy became more and more sophisticated over the centuries and became especially beguiling once the pinhole in the front of the device was replaced by a lens. Danielo Barbaro gives the following description of a camera obscura in his "Practica della Perspectiva." (1568-69).

Close all the shutters and doors until no light enters the camera except throught the lens, and opposite hold a sheet of paper, which you move forward and backward until the scene appears in the sharpest detail. There on the paper you will see the whole as it really is, with its distances, its colours and shadows and motion, the clouds, the water twinkling, the birds flying. By holding the paper steady you can trace the whole perspective with a pen, shade it and delicately colour it from nature.

And this seemed, and still does seem to many, the perfect analogy of vision. Instead of the image being reflected on the back wall of the camera obscura, or the moving paper within it, as above, the image was simply reflected on the back of the eye itself. The world was mirrored in living flesh. But, not only did the back of the eye become a mirror, the front portions of the eye came to be seen as lenses, to explain, not only how so large a thing as the world could be mirrored in so small a place as the eye, but also, to ensure that

the world was represented faithfully at the back of the eye.

And it is the eye as a truly mirroring optical device that French philosopher and scientist, Rene Descartes, describes so brilliantly in his Treatise of Man.



(Fig. 9. Treatise of Man. pg 50)

In the first membrane, the part BCB (the cornea) is transparent, and a little more arched than the rest; and the refraction of rays entering it occurs towards the perpendicular. In the second membrane (the iris), the internal surface of the part EF (our pupillary sphincter and dilator muscles), which faces the back of the eye, is completely black and opaque, and has at its centre a little round hole that is called the pupil and appears black at the middle of the eye when one looks at it from without. The hole is not always the same size, because part EF of

the membrane that the hole is in, swimming freely in humour K, which is very liquid, seems to be like a little muscle that is enlarged or diminished under the direction of the brain as use requires.

The shape of the humour marked L, which is called the crystalline humour (the lens), is like the shape of the glasses I described in the treatise on Dioptrics, by means of which all the rays that come from certain points are assembled at certain other points; and its matter is less soft, is firmer, and consequently causes a greater refraction than that of the two other humours that surround it.

E and N are black filaments that come from within the membrane DEF and completely encircle the crystalline humour; they are like so many little tendons by means of which its shape can be changed and rendered a little flatter or a little more arched according to need. Finally OO are six or seven muscles which are attached to the eye on the outside and can move it very easily and very quickly in all directions.

Now the membrane BCB (the cornea), and the three humours K, L and M (aqueous, crystalline and vitreous), being very clear and transparent do not prevent the rays of light which enter through the pupil from penetrating the back of the eye where the nerve is, nor from striking as easily against it as if it were exposed; they serve (rather) to protect it (the retina) against injuries from air and other external bodies which could wound it easily if they touched it; and (they serve) further to keep it so delicate and tender that there is no wonder it can be moved by acts so slightly perceptible as those I here take to be colours. (Treatise of Man. pp 51-53.)

Now this view, if it is correct, must go a long way towards making the world safe for Realism. Whatever is placed before the lens of the eye is reproduced in great detail on the retina due to the refractive capacity of the eye. And, if you are inclined to view Descartes as an antique figure, it will perhaps come as a surprise to know that his picture of the eye is virtually identical to the modern picture. In "Eye and Brain" (pp 49-64) R.L. Gregory gives an almost identical account of the physiology and function of the eye. Indeed, even Gregory's criticism of Descartes, that Descartes believed most

refraction took place at the lens rather than the cornea, is misplaced, as a close examination of Descartes' diagrams shows. (Gregory probably made this mistake by paying too much attention to Fig. 9 which does indeed seem to show this. Subsequent Figures, however, make it perfectly plain that Descartes too believed the cornea to be the primary organ of refraction. Figure 12 is especially good in this respect.) In fact the only important difference between the two accounts is, as Gregory rightly points out, that the surface of the retina is relatively insensitive to light and the sensitive "photoreceptors" are at the back of the eye, behind a mesh of blood vessels and nerve fibres. So Descartes' analogy with the camera obscura has been continued right to the present day. The eye as mirror of the world seems like "the only game in town".

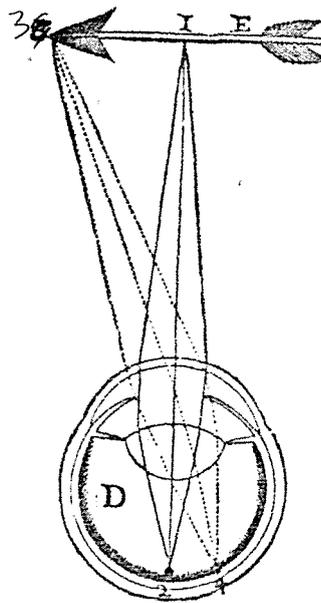
Moreover, Descartes and Gregory are in total agreement over the purpose of the eye; namely that it serves to enlighten the organism concerned about the true state of the world. Through the eyes reality is made explicit, a reality of movement and physical objects.

Detection of movement is essential to survival. From the animals lowest on the evolutionary scale to man, moving objects are likely to be either dangerous or potential food, and so rapid and appropriate action is demanded, while stationary objects can generally be ignored. Indeed it now seems that it is only the eyes of the highest animals which can signal to the brain the absence of movement.

Something of the evolutionary development of the eye, from movement to shape perception, can be seen embalmed in the human retina. The edge of the retina is sensitive only to movement. This may be seen by getting someone to wave an object around at the side of the visual field, where only the edge of the retina is stimulated. It will be

found that the movement is seen but it is impossible to identify the object. When the movement stops the object becomes invisible. This is as close as we come to experiencing primitive perception. The very extreme edge of the retina is even more primitive: when stimulated by movement we experience nothing, but a reflex is initiated which rotates the eye to bring the moving object into central vision, so that the highly developed foveal region with its associated central neural network is brought into play for identifying the object. The edge of the retina is thus an early warning device, used to rotate the eyes to aim the sophisticated object-recognition part of the system on to objects likely to be friend or foe or food rather than neutral. (Eye and Brain, pp 93.)

Such an eye is obviously splendidly equipped to mirror a world full of objects, especially those which are threatening or nutritious. Descartes too, while not so concerned with the survival value of the mirroring eye, similarly esteems it for its ability to enlighten the organism as to the position and quality of surrounding objects.



(Fig. 14, Treatise of Man. pg 61.)

Similarly, if eye D is turned toward object E (Fig 14), the soul will be able to know the position of this object, inasmuch as (in the brain) the nerves from this eye are

differently arranged than if it were turned towards some other object. And (the soul) will be able to know the shape (of E), inasmuch as rays from point I assembling on the nerve termed optic (the retina) at point 2 -- and those from point 3 at point 4, and so forth -- will trace there a shape corresponding exactly to the shape of E. Note also that the soul will be able to know the distance of point 1, for, as has just been mentioned, in order to make all the rays coming from point 1 assemble precisely at point 2 at the centre of the back of the eye, the crystalline humor will be of a different shape than if the object were nearer or farther away. (Treatise of Man. pp 60 - 61.)

The eye is considered by both Gregory and Descartes to enlighten man as to the exact nature of the world around him.

And surely they are right about this? Isn't the fact that the eye truly mirrors the world shown by the mistakes animals make when their vision is in some way distorted? M.H. Pfister, for instance, attached right-left reversing prisms to the eyes of hens and found that they were unable to feed themselves and that their behaviour became severely disturbed. Even when less severe distortions were used chickens proved very incapacitated. A. Hess attached wedge prisms to the eyes of chickens and, even though these prisms shifted the images by no more than 7 degrees to either right or left, the chickens persistently pecked to one side of the grain they were feeding on. We are naturally disposed to say that the eye is designed to give us an accurate picture of the world and, if this picture is distorted, the organism suffers accordingly.

\* \* \* \* \*

Speaking as Mirroring.

Now, if the world of objects is so tidily mirrored in consciousness, it would seem only proper that our language too should mirror what is in the world. Where there are objects, there are object words; and where there are actions, there are action words. Each particular piece of the world has its counter-part in language.

All Referential Theories of Language and Correspondence Theories of Truth have this as their basic premise (though some such theories omit consciousness as part of the overall picture). The broad picture was first painted by Plato in the Sophist, where these supposedly degenerate figures, Sophists, were accused of making word images that were different from the objects they were images of and, hence, failing to mirror the world in words. The basic philosophical picture has been repeated many times since. One of the first to repeat it in the modern era (post Descartes) was Leibniz.

I only mean that [verbal] characters must show, when they are used in demonstrations, some kind of connection, grouping and order which are also found in the [natural] objects, and that that is required, if not in the single words -- though it were better so -- then at least in their union and connection. This order and correspondence at least must be present in all languages, though in different ways. And that leaves me with hope for a solution of the difficulty. For even though characters are as such arbitrary, there is still in their application and connection something valid which is not arbitrary; namely, a relationship which exists among them and things, and consequently, definite relations among all the different characters used to express the same things. And this relationship, this connection is the foundation of truth. For this explains why no matter which characters we use, the result remains the same, or at least the results which we find are equivalent and correspond to one another in

definite ways. Some kind of characters is surely always required in thinking. (Dialogue on the Connection Between Things and Words. Leibniz Selections, ed. Philip Wiener. p 10 )

Language clearly mirrors, or ought to do its best to mirror, the world.

More recently, this view was baldly stated by Wittgenstein in the Tractatus Logico Philosophicus.

2.15 The fact that the elements of a picture are related to one another in a determinate way represents that things are related to one another in the same way.

Let us call this connexion of its elements the structure of the picture, and let us call the possibility of this structure the pictorial form of the picture.

2.1511 That is how a picture is attached to reality; it reaches right out to it.

2.1512 It is laid against reality like a measure.

The same applies to language of course, for one of the ways in which reality may be pictured is by words.

4.021 A proposition is a picture of reality: for if I understand a proposition, I know the situation that it represents. And I understand the proposition without having had its sense explained to me.

But the details of this correspondence are often difficult to work out in practice. Usually however, the picture is one where the names correspond, either to things or ideas of things; and the logical structure of the language either does, or should, correspond to the

logical structure of the facts. Such a logically perfect language is described in detail by Bertrand Russell (acknowledging Wittgenstein) in his "Philosophy of Logical Atomism" lecture.

In a logically perfect language the words in a proposition would correspond one by one with the components of the corresponding fact with the exception of such words as "or", "not", "if", "then" which have a different function. In a logically perfect language, there will be one word and no more for every simple object, and everything that is not simple will be expressed by a combination of words, by a combination derived, of course, from the words for the simple things that enter in, one word for each simple component. A language of that sort will be completely analytic, will show at a glance the logical structure of the facts asserted or denied. The language set forth in *Principia Mathematica* is intended to be a language of that sort. It is a language which has only syntax and no vocabulary whatsoever. (Logic and Knowledge Pp 197-98. ed. Robert Marsh.)

All the elements of mirroring are here. Simple things are corresponded to by simple words. Blueness is corresponded to by the word "blue", squareness by the word "square" and Richard Perrott by the name "Richard Perrott", overlooking of course that Richard Perrott is not a "simple". Moreover the "simples" enter into various relations with one another; the book may be blue for instance. These relations will also be reflected by the syntax of the language. Hence, two simples in relation compose a fact, a fact whose structure is reflected by the syntax of the language, so that things and facts both come to be mirrored in the language.

In Leibniz, Wittgenstein and Russell this picture is presented as somewhat of an ideal for language to strive after. But it was also assumed that mirroring was how our actual language worked (despite the inconvenience of our terminology for analysing it). Thus

"Napoleon married Josephine" actually did picture a single atomic fact; and the words "Napoleon" and "Josephine" and "married" actually did each correspond to an entity or relation which did in fact exist. Of course there were problems with our common language. It contained all sorts of expressions which were later called by Ryle "Systematically Misleading". Words such as "horse", "God", "virtue" and "the present King of France" all seemed to correspond to things; but didn't, since there was nothing for them to correspond to. But these were considered manifestations of the inadequacy of the ordinary language and its proneness to try to confuse us as to the true nature of the facts. Basically the language was assumed to follow the ideal structure of the language of Principia Mathematica; which itself mirrored the structure of the external world. Truth, absolute truth, was thereby assured.

And surely these philosophers must be right. Mirroring must be the way language works; for indeed, there are facts and true and false statements about them in our language. If I say that the grass on my front lawn is green, surely we read and understand the sentence and then go and look at the front lawn to see if the grass is, in fact, green. Do we not compare the contents of the sentence with the content of reality? And, if I say that on July 14th 1789 the Parisian mob stormed the Bastille, what I say is presumably true or false; and it is presumably true or false depending on whether or not, on that particular day, the Parisian mob actually did do just that. We compare the action which the sentence asserts happened with the action which actually did happen; and if they match up then the statement is true. Such comparisons form the foundation of all

empirical disciplines; and empirical disciplines surely form the basis of our intellectual and political life. If language does not work that way we have been living out a lie.

\* \* \* \* \*

The Pre-condition for Mirroring.

But of course, if language mirrors the world, then the world is primary and the language secondary. There can be no image in a mirror without an object. By the same token there can be no true proposition which does not mirror objects in various relations. The world cannot therefore be language dependent; but quite the contrary, the language must be world dependent. Learning a language is, in a real sense, subsequent to learning about the world. And this too scientists seem to have shown; for there are many random experiments which show that children have a lively appreciation of objects, object persistence and cause long before they can talk.

Jerome Bruner has found that babies of a few months, who certainly cannot talk and show little or no response to language, have a considerable appreciation of objects in the external world. When Bruner made video films of babies reaching for toys or wooden bricks he found they opened their fingers to the appropriate size of the objects, as well as judging their distance and direction. T. C. Bower found a similar appreciation of objects amongst young children. He presented stereoscopic images to babies and found, that when the babies reached out to touch these apparent objects and could not,

they showed either surprise or distress.

Moreover babies seem to quite rapidly develop notions of object persistence. Even very young babies, watching an object move behind an opaque screen; move their eyes to the other end of the screen anticipating that something will emerge. If, in fact, nothing emerges they often manifest surprise. Very young babies however do not tend to be surprised if a teddy bear passes behind the screen and a different object, say a fire engine, emerges. Children of a year old however, and one year olds do not normally manifest any linguistic ability, often become quite upset at such a transformation. This surely illustrates that they have already grasped, what is called by psychologists, "object persistence"; and that they have done so quite independently of language.

The conclusions of these somewhat random experiments are repeated and carefully integrated in the work of Jean Piaget. Piaget's conception is rather Kantian, as his notion of "schema" shows. But he also believes there is a world of natural objects: to which we can adapt or fail to adapt. This is implicit in the notions of "assimilation" and "accomodation". It is explicit, however, in much of the rest of Piaget's work: for Piaget is quite emphatic that our notions of "object" and "cause" are pre-linguistic and are developed in what he calls the "sensori-motor phase", which occurs between 0 and 2 years. In Stage 2 of the Sensori-Motor Phase, 1-4 months, Piaget claims that children begin to distinguish objects. They follow things that move, they look for things in a certain location where they are accustomed to seeing them.

Thus, Lucienne, at 0;3[9] sees me at the extreme left of her visual field and smiles vaguely. She then looks in different directions, in front of her and to the right, but constantly returns to the place in which she sees me and dwells on it every time for a moment.

At 0;4[26] she takes the breast but turns when I call her and smiles at me. Then she resumes nursing but several times in succession, despite my silence, she turns directly to the position from which she can see me. She does it again after a pause of a few minutes. Then I withdraw; when she turns without finding me her expression is one of disappointment and expectation. (The Construction of Reality in the Child. pp 10-11.)

By Stage 3 of the Sensori-Motor Phase, 4-8 months, children are beginning to develop notions of the permanence of objects.

Observation 6 - Laurent's reaction to falling objects still seems to be non-existent at 0;5[24]: he does not follow with his eyes any of the objects which I drop in front of him.

But:

At 0;7[29] he searches on the floor for everything I drop above him, if he has in the least perceived the movement of falling ----. (The Construction of Reality in the Child. p 15.)

Obviously the child is beginning to believe that objects persist through time and can change location.

By Stage 4, 8-12 months, infants begin anticipating certain events. They seem, according to Piaget, to know that certain events cause certain other events. In The Origins of Intelligence in Children, Piaget illustrates his contention in the following way.

Observation 132 - At 0;8[6] Laurent recognises by a certain noise caused by air that he is nearing the end of his feeding and, instead of insisting on drinking to the last drop, he rejects his bottle ----.

Observation 133 - At 0;9[15] Jaqueline wails or cries when she sees the person seated next to her get up or move away a little [giving the impression of leaving] ----.

At 1;1[10] she has a slight scratch which is disinfected with alcohol. She cries, chiefly from fear. Subsequently, as soon as she again sees the bottle of alcohol she recommences to cry, knowing what is in store for her. Two days later, same reaction, as soon as she sees the bottle and even before it is opened. (pp 248-249.)

I could, of course, continue with other examples of children developing a pre-linguistic knowledge of objects and causes; but the above, if correct, must suffice to show that children do indeed achieve a quite sophisticated knowledge of the external world of objects long before they can talk.

\* \* \* \* \*

Mirroring, and the philosophical views which go with it (Realism and Language Independence) therefore seem the only sensible views. We know there are objects in the world because of our hunger, vulnerability and mortality; and because if any one sense lets us down, the other senses will soon be made unpleasantly aware of what the first sense failed to detect. Moreover, it seems perfectly plausible that consciousness mirrors the world, that an image of the world is cast on the retina, an image of which we are immediately aware. If this were not the case surely, like Hess' chickens, we should continually miss our marks. It also makes sense to suppose that language mirrors the world, for we certainly seem to compare

what we write or say, with what we see to be the facts of the matter. Moreover, this picture of language is wholly in keeping with the psychological studies which indicate that children appreciate a good bit about the world before they talk. For, if the world were language dependent, children would remain in complete ignorance of it until they began to speak. This form of "Metaphysical Realism" seems indisputable.

---