WITTGENSTEIN VS. SCIENCE ON
LANGUAGE AND PERCEPTION

BY

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A Thesis
Submitted to The Faculty of Graduate Studies
in Partial Fulfilment of the Requirements
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NOTE:

The Introduction has a list of the chapters to be found in
each of Part I and Part II.   (See Pages IX and X)

ABSTRACT

There is much discussion on the theories which Wittgenstein has put forward. The main point of his argument has to do with the idea, that without a language held in common, it would be impossible to discriminate between the sense data being experienced. In other words, we would see the colour red, or feel pain, but without a language we would not know that this is red, or that this is pain. Without a common language an individual would have to create a private language, of either sounds or mental marks, to sort out and keep track of the data being experienced. Wittgenstein claimed this would be impossible to do, because in isolation it would be difficult to remember the sounds or mental marks and recall them correctly. Language had to first be in place before our cognitive processes could function effectively.

Being evolutionists, we think that our cognitive processes had to be in place and functioning effectively, before language could make an appearance. To assist us in this mode of thinking we have gone to the sciences, particularly studies dealing with the animals. We have tried to show that if the animals can discriminate sense data successfully without language, then the human species should have been able to function as well or better, before language made an appearance.

ACKNOWLEDGEMENTS

INTRODUCTION

Within twentieth century philosophical thought some notable figures have emerged, among them an Austrian born engineer turned philosopher by the name of Ludwig Wittgenstein. His ideas regarding many of the topics covering the whole spectrum of philosophical debate are, to put it mildly, different. "Open any of Wittgenstein's books and you will realize immediately that you are entering a new world." (FP, 1) For those interested, his theories offer a new approach towards solving many age old problems discussed over the centuries by the most notable figures in philosophy.

Wittgenstein's methods of tackling philosophical problems are different, and his solutions unique. "They will be arguments, but not the kind that we have learned to expect. They will be arguments with strange shapes, not designed to connect explicit premises with judicious conclusions." (FP, 1) Just as Kant put forward "a critique of thought", Wittgenstein gives us "a critique of the expression of thought in language". (FP, 1)

There is much discussion, both pro and con, on the theories which he puts forward. Whether one agrees or disagrees with his work is not important. What is important is that he cannot be overlooked. His work which touches many areas of philosophy, is well articulated, and very convincing from a

practical point of view. More and more people working in the philosophical field are slowly coming around to his way of thinking.

Wittgenstein had only one work published in his lifetime, the Tractatus Logico Philosophicus. The remainder of his works were published after his death. Among these, the most notable is the Philosophical Investigations, henceforth referred to as the Investigations. In his latter work he repudiates and corrects much of what was said originally in the earlier Tractatus. However, to get an in depth understanding of the evolution of Wittgenstein's thought, the Tractatus is indispensable. It was the seed from which sprang his most notable achievements in philosophy, culminating with the publication of the Investigations. This later work, the Investigations, has been used as the major reference for this paper.

Within the Investigations, the "private language argument" is in our estimate and Pears, the "centre-piece". It seems that almost everything discussed in the Investigations leads to this most important concept. As with the Investigations, the "private language argument" is the centre-piece of our thesis. We are not trying to disprove Wittgenstein's theories and all that they entail, but rather, claim that there are still questions which have to be answered.

The argument against a private language appears in its full force in aphorism 243 of the Investigations. We will not go into the body of the argument as Wittgenstein presents it at this time, but will make a few general comments about the nature of the argument and its ramifications for philosophy.

Wittgenstein's argument is directed against the idea that a solitary individual could create and use a private language, consisting of sounds or symbols for his own private use. The function of this language would be to give names to the various sense data experienced by the "private linguist". The names would enable the individual to keep track of and record the data being experienced for future needs. It is a language to which others are not privileged because, the data being experienced are supposedly private. Since it is about sense data, things which are unobservable, there should not be any possible way to decipher the sounds or symbols. Conversely if the language were about things and objects in the external rather than the internal world, it would be about things which are public and thus accessible to all. The language would then lose its privacy, one could eventually match the sound to the observable behaviour, and the language would become public. Pears asks these questions about the private linguist, "Would it be a language at all?", "Would he really be doing anything with it?", "Could even he understand what he was doing with it?" (FP, 328)

On the surface it does not seem to be such a devastating problem. When analyzed in depth, the problems associated with trying to create a private language have far reaching consequences. The main area of concern is the epistemic one of how we know things rather than an ontological one of what we know. What Wittgenstein's argument would lead us to believe, is that we can recognize and name our sensations only through a public language. Without a common language, we would not be able to sort out the various data which are being experienced. This problem has to do with our cognitive processes of perception, and our abilities to discriminate between objects or things. The implications are far broader, because without a public language, one is led to believe knowledge about sense data or anything else would be impossible. From what Wittgenstein has to say, we can only conclude that all our knowledge begins with language, as opposed to Kant's dictum, "all our knowledge begins with experience".

The "private language argument" is an attack on all forms of idealism and realism, and has implications for the mind-body dichotomy. If Wittgenstein is correct, the idealists and realists are all wrong. His philosophy provides a new approach to clear up the problems which these two diametrically opposed positions have failed to solve. From what was briefly said, we have tried to show why the "private language argument" is so controversial. Although a great deal

has been written on this topic to date, we will stay close to what Wittgenstein has said on this interesting subject to ensure that his views are faithfully reproduced.

Taking into consideration all that has been mentioned above, we will now turn to the problem this paper will consider. The area of our concern is centered around one of the main criticisms which Wittgenstein levels against the private language "illusion". This has to do with learning by ostension. The idea behind this concept has to do with the use, meaning, and understanding of words. "Once you know what the word stands for, you understand it, you know its whole use". (PI, 264) This, according to Wittgenstein, is where things first start to go wrong. It is because of the commonly held idea that things acquire meanings or their use becomes understandable, once names have been linked to them. The popular notion is that all learning starts with ostensive definitions. It is one thing to point ostensively to objects in the physical world but how do we accommodate "emotions, anxiety, thoughts, acts of willing"? (IPA, 58)

Supposedly the private linguist's ego is first presented with sense data, it then proceeds to attach a word to each datum. The ego has to be aware of differences between data; and as such it presumably sorts the data into classes or types such as pain, colour, etc. Each class has subclasses or particulars which the ego goes on to name. Furthermore, the

linguist has to recognize the specific datum correctly each time it appears, and the name originally given must be retrieved from memory successfully. If the association of name and datum is not consistent, the language would be meaningless. Correctness and memory are crucial to the success of this enterprise. Wittgenstein is greatly concerned with these concepts and uses them skillfully in his arguments.

Therefore it is the ego, through its powers of perception, that makes the exercise of ostensive definition possible. This is another area where we go wrong, because according to Wittgenstein the secluded ego and the "private object" (the sense datum) are irrelevant as to the manner by which a word gets its meaning and the way learning takes place.

Wittgenstein presents a battery of arguments against the notion of learning by ostension, and through these arguments leads us to a new epistemic theory of perception. By attacking learning by ostension he shows us that faculties which are common to many members within the animal kingdom are not really the tools by which knowledge is acquired. The senses by themselves without language are not the foundation to which an epistemic structure can be secured.

What this paper will attempt to show in Part II later is that the powers of perception, discrimination, recognition, etc. had to be firmly in place before language could make its

appearance. The cognitive processes of the human species had to be well developed and fully functional, and as such, the precursor to language.

Wittgenstein's position we are led to believe is rather the opposite. Based on the arguments he presents, one is led to conclude that without language the cognitive processes could not function effectively. He does not deny the importance of the cognitive processes, only that without a public language the human species would not be in a position to recognize or make effective use of the data being experienced. The more primitive our language, the weaker our powers of perception. "There is such a thing as primitive thinking which is to be described via primitive behaviour". (Z, 99)

Wittgenstein leads us to believe language fixes the boundary lines as to our knowledge of the world. We on the other hand propose it is our cognitive powers which are the limiting factors, and language is used only as a tool to organize and communicate our findings.

The arguments we will present and the questions raised concerning Wittgenstein's theories will be from the perspective of an evolutionist and a materialist. Wittgenstein's epistemic theories are very materialist overall; he brings everything out into the open, into the light of life as it is lived and practised. However, as

evolutionists and thinking within this framework, Wittgenstein's arguments are not entirely satisfying.

It is our position, being members of the animal kingdom (one among many), that our species must have had a prelinguistic past. The question to be answered is, how did the species manage without language? Survival depends on knowing things with certainty, not repeating the same mistakes, overcoming adversity, managing somehow to keep going on. A mechanism had to be there when needed or when called on, to enable the species to cope with the situations it encountered.

If the premise is accepted that we are part of the animal kingdom, then it should be to the animals that we look to support the claims which will be made. As we see it, the beast has a nature completely independent of a culture based on language. Because we are the kind of animal that we are, culture is simply a product of the nature of the beast, used and altered, to the advantage of the beast.

The paper will be presented in two parts. Stated below is the form within which the discussion will take place.

1. The first part will deal with Wittgenstein's "no private language argument", centering on the problems associated with learning by the act of ostension (ostensive definition). Some of the elements discussed in this part are,

2.   The second part will be our argument to show that some of
     the reasons underlying his argument against learning by
     ostension are not sufficient to allow him to claim a
     private language is impossible.

What must be shown is that animals are aware of what is
happening around them. If they are aware of things, then they
must be noting differences. This is exactly what Wittgenstein
is attacking. He claims without a common language,
differences between things would not be apparent. In other
words we would feel pain or see the colour red, but without a
language we would not know it is pain, or red, that we are
experiencing. In other words, Wittgenstein is tying our

powers of perception, or our cognitive processes, to a language held in common. We will attempt to show that our cognitive process do not require a language to function effectively. To make this clear we will look to the animals, primarily the primates, to provide the answers we require. It is our contention animals do avoid pain inflicting situations and can distinguish the differences between things. If animals are perceptive; discriminate between things and events, recognize things, remember and recall things from memory, then they must somehow be making a mental mark of these objects and events. Making mental marks of objects and events is in essence having something like a private language. Wittgenstein claimed that a private language of this nature was impossible. If the cognitive processes of the animals, particularly the primates, can function effectively without a language, then the same should have once been possible for the human species.

It is not the intent of this paper to even suggest that the human species could function effectively, to the extent it presently does, without language. For a species to create poetry, do mathematics, engage in commercial activities, and a host of other cultural phenomena, a common language is imperative. With this final comment the discussion will now turn to the task at hand.

The private language argument as mentioned in the introduction is of great importance. The deeper one delves into the reasons against the possibility of developing a private language, the more fascinating becomes Wittgenstein's argument. It appears in full force in aphorism 243 of the Investigations. The argument is composed of two contrasting paragraphs, the first to show what he does not mean by a private language, and the second explains exactly what he has in mind.

> 243. A human being can encourage himself, give himself orders, obey, blame and punish himself; he can ask himself a question and answer it. We could even imagine human beings who spoke only in monologue; who accompanied their activities by talking to themselves. An explorer who watched them and listened to their talk might succeed in translating their language into ours. (This would enable him to predict these people's actions correctly, for he also hears them making resolutions and decisions.)
>
> But could we also imagine a language in which a person could write down or give vocal expression to his inner experiences - his feelings, moods, and the rest - for his private use? - Well, can't we do so in our ordinary language? - But that is not what I mean. The individual words of this language are to refer to what can only be known to the person speaking; to his immediate private sensations. So another person cannot understand the language.

The division is shown to describe a situation which is imaginable, "human beings who spoke only in monologue", and a situation which is unimaginable, "a person speaking a language strictly unintelligible to anyone else". (FP, 337) In the

first paragraph the individuals speaking have a language which
is correlated to objects and "activities" in the "physical
world". While in the second paragraph the private linguist,
with his "sensation language", does not "have" the same
"resources available". (FP, 337-8)

To ensure that the language is in all respects private,
Wittgenstein sets out a series of guidelines.

a) "The words of the language are to refer to what can only
   be known to the speaker" (IAI, 254).

b) "The words of the language are to refer to the speaker's
   immediate private sensations" (IAI, 254).

c) "Another person cannot understand the language" (IAI,
   254).

d) The language must not be associated with "the natural
   expressions of sensation" (PI, 256).

The reason for stipulating (d) is that repeatedly using the
same sound in conjunction with the same observable behaviour
would enable others to decipher the correlation. The language
would then lose its privacy and become public (PI, 256).
However, to avoid interpretation an individual could silently
speak the sound to themselves in conjunction with the
behaviour. What the linguist would be doing in this situation
is giving themselves a mental mark of the event.

When Wittgenstein speaks of naming sense data he uses words
like sounds, signs, etc. He does not say we have to name the
data in a manner similar to what we normally do. It must be

remembered, however the naming is accomplished, the stipulation is that it must not be intelligible to others, only to the private linguist. Therefore, committing something to memory, to be recalled, remembering it correctly whenever it is again experienced, would require something like a mental mark of the item or event. Whatever is stored in memory, however it is done, the item then acts as a sample to which similar experiences are matched. When the private linguist uses a sound, sign, or symbol to record an experience, something not recognizable to others, then for all practical purposes it could be described as a mental mark. In a case like this Wittgenstein says, "and sounds which no one else understands but which I appear to understand might be called a private language". (PI, 269) For reasons forthcoming Wittgenstein thought a plot of this nature impossible.

Items (a) and (b) lead us to believe experiences are events which are private, known only to a thinking subject, an ego, all located in a private world. If as Wittgenstein claims, a private language is impossible, then the objects of experience likewise cannot be private. If the objects of experience are private, we could individually have different objects, and in a sense our language about the objects would then be private.

Item (c) leads us to believe, if a language is to be so that it is not intelligible to anyone else, then could the private linguist understand it himself? Although items (a) to (d)

establish the conditions necessary for a language to be private, they are also the criteria which Wittgenstein uses to argue against this notion. Are Wittgenstein's arguments on private language directed against an individual who is already a proficient language user? Could Wittgenstein also be interpreted as arguing against the notion, that a language could be invented by either a solitary or a group of individuals? In the first place, Wittgenstein thought of language as part of the "natural history of human beings". We are led to believe, that he could not imagine the human species without language. The cognitive processes of the human species could not function as they do without a language held in common. This explains in capsule form Wittgenstein's ideas on language and perception. The question to be answered is, who is Wittgenstein's private linguist?

If the private linguist was already a language user he would know the value of language. The linguist would be able to recognize and discriminate between phenomena, have the capacity to conceptualize and use language correctly. An individual with this background would really only be creating a kind of code, rather than a private language. Some enterprising individual, if interested, could eventually decipher the code.

However, on the other hand, suppose a Crusoe type individual attempted something of this nature, inventing "a vocabulary".

He would have to be in possession, rudimentary of course, of the idea what naming something will accomplish. The value of using a word to name things would have to be forming in the mind of this Crusoe, to prepare the way for the word. The private linguist, according to Rhees, "would have to invent what we call, use and meaning". This would be a qualitative leap forward in the cultural development of those concerned, supposing that language did start in this manner.

> To invent a vocabulary he would have at least to
> invent ways of using these sounds in various
> circumstances - in circumstances of a social life
> which has in fact grown up with language and could
> no more be invented than language could. And
> people would have to understand them. They would
> have to see not just that this sign occurs here and
> that there; they would have to see the difference
> it makes to use the one or the other. (DW, 63)

The problems associated with creating a language for a Crusoe type individual would be many. There is a heated dialogue published between A.J. Ayer and Rush Rhees on the merits of a Crusoe type individual attempting something of this nature. What the discussion between the two philosophers centres on, is whether a Crusoe would recognize sense data in the absence of a common language. Wittgenstein said, "How do I know that this colour is red? - It would be an answer to say: I have learned English". (PI, 381) In Zettle he claims, a primitive language would in degree be reflected by primitive behaviour.

Wittgenstein we are led to believe, is not really concerned to show, that a proficient language user cannot create a private

language of his own. As we have said, this individual would only be creating a kind of code, and Wittgenstein was not interested in the problems of a code maker. Wittgenstein, we are sure knew full well, an enterprise of this nature if successful would result in the creation of a useless piece of equipment, which would be of no use to anyone, including the private linguist. He was concerned with things more profound and basic than code making.

1) Wittgenstein was out to show, that we learn to recognize sense data as we learn to use language. As we are taught language our powers of perception are activated, and we learn to discriminate between, recognize and remember sense data. Therefore, it is language users teaching potential language users through this medium, how to sort out and catalogue the various phenomena appearing at their portals

2) Wittgenstein also uses the concept of a Crusoe type individual who is not a language user in his discussions, to show the difficulty someone would have in sorting out sense data. On our own, without a community of like thinking individuals who are all language users, it would be impossible to sort out the sense data being experienced.

His main concern in the Investigations is as we have outlined in 1) and 2), that is, the importance of language for our cognitive processes. As Wittgenstein unravels his theory of perception, the code maker is likewise not forgotten. There is much in his analysis, which makes clear the problems this type of individual would have, attempting something of this nature on his own.

Kenny outlines what Wittgenstein was attacking when he formed the private language "fantasy". It has to do with the "nature of experience" and the "nature of language".

> Wittgenstein considered the notion of a private language rested on two fundamental mistakes, one about the nature of experience, and one about the nature of language. The mistake about experience was the belief that experience is private, the mistake about language was the belief that words can acquire meaning by bare ostensive definition. (W, 180)

The mistake about the privacy of experience which Kenny mentions appears in PI, 246 where Wittgenstein asks, "In what sense are my sensations private, - Well, only I can know whether I am really in pain; another person can only surmise it. - In one way this is wrong, and in another nonsense." The mistake about ostensive definition is assuming that an act of ostension is "the ultimate foundation of meaning". (TAW, 70) Somehow we point to an object, name the object aloud, and the meaning suddenly becomes "clear". Wittgenstein claims, "this is where our illusion is". (PI, 362) Meaning is attached to a word when its "overall" use "in language is clear". It is how we use a word as a social group which imparts meaning, not simply an act of association of word to object independent of use.

For Wittgenstein language and the social activities of human beings are inseparably bound, it is language as a form of life, not language literally. This is one further reason why

a private linguist could not succeed, because the social setting would be missing to certify the language. When Wittgenstein talks about private as well as public ostension, the models to which he constantly refers are "pain" and the colour "red", the unobservable and observable, and in our opinion there is a good reason for his choice.

Much of what Wittgenstein had to say on private language weaves its way through a good portion of his writings. In spite of the method which he employed to get his ideas across, the information is all there. The discussion will start with Wittgenstein's ideas on the nature of thought, followed by his concern about the privacy of sense data.

THE EGO

There are a number of props which Wittgenstein has to remove from the "private linguist's" epistemic structure before he can bring it down. In his discourse the private linguist becomes the solipsist, both have the same problem. The solipsist thinks he can seclude the ego in a private world, and through the sensory pathways present it with data which is then organized into a coherent picture of reality.

> I can experience only my own experiences and I
> alone know when I have pains seems to him to be
> irrefutable claims illuminating the essence of the
> world upon them he builds his metaphysics. (IAI,
> 219)

Somehow the ego must be dislodged from its private world.
Wittgenstein compared the solipsist to a "fly" trapped in a
"flybottle", and his efforts were directed to showing "the fly
the way out of the flybottle". (PI, 309)

> The solipsist flutters and flutters in the
> flyglass, strikes against the walls, flutters
> further. How can he be brought to rest. (NFL,
> 300)

Wittgenstein's "critique of solipsism deals with the
privatization of the subject". (FP, 503) In his attack on
solipsism he attempts to drive the ego out into the "open".
If all egos were inaccessible how would we come to know other
minds? The data presented to a secluded ego would be private,
creating a situation where other minds and their contents
become something mysterious. Learning by ostension could then
be possible. The secluded ego would be in a position to name
its own private object and determine its use. All this
according to Wittgenstein is nonsense, and the first prop to
go is the thinking subject, along with its private world. The
resting place for the ego is the "physical world", one which
is "common" to us all. Language is the vehicle which brings
the ego out into the light of day. (TAW, 97)

> And it is when I talk about the world that I appear
> on the scene, in the glory of myself if you like.
> But until I can speak or act, I am not to be found;
> and then it is this human being that you
> encounter. (TAW, 97)

When one comes to "realize that there is no such object" as an ego separated from the physical world it finally dawns on him, that "the world reappears as the place where I am at home. My consciousness...is my relation to my surroundings". (TAW, 97) This leads to Wittgenstein's critique on the nature of thought as an activity peculiar to a mind, "the idea that thinking takes place in the head is the root of a great deal of misunderstanding". (TAW, 77-8) Wittgenstein's concern with this concept manifests itself in almost all of his writings. It seems all philosophical theories take this idea on the nature of thinking as a given. In Zettle Wittgenstein makes his concern clear,

> One of the most dangerous ideas philosophically is,
> oddly enough, that we think with or in our heads.
> The idea of thinking as an occurrence in the head,
> in a completely enclosed space, makes thinking
> something occult. (Z, 605-6)

"Where do we get the concept thinking from, which we want to consider here? From everyday language". (Z, 113) Wittgenstein is stressing the importance of language, as the location of thought. Not language literally, but language as a form of life. It is the way language is used in the art of living that thinking makes its appearances. Some of Wittgenstein's most illustrative examples on the nature of thought appear in the Blue Book.

> It is misleading then to talk of thinking as a
> mental activity. We may say that thinking is
> essentially the activity of operating with signs.
> The activity is performed by the hand, when we

> think by writing; by the mouth and larynx when we
> think by speaking; and if we think by imagining
> signs or pictures I can give you no agent that
> thinks. (BB, 6)

Forming images is not thinking, and in fact, producing an image is impossible without the aid of language. Wittgenstein asks us to "say and mean a sentence", such as, "It will probably rain tomorrow." Now "think the same thought again, mean what you just meant, but without saying anything (either aloud or to yourself)". (BB, 42) The exercise is impossible without the accompanying language, the images fail to appear. Looking for the sense of a sentence in something other than the verbal expression is looking in the wrong place. There are not two distinct entities, such as the spoken sentence and the mental meaning.

If the role of the ego is to act as a rational thinking mechanism it cannot perform its function locked up in a private world. By bringing the ego out into the open, it becomes only one of many. The specificity of the ego accredited to it by the solipsist is gone.

> There is no world for me or anyone else other than
> the world that we have in common: the predicament
> of private worlds is an illusion. (TAW, 97)

What Wittgenstein ends up with is a community of thinking subjects, collectively agreeing on and giving meaning to all phenomena appearing on their perceptual horizons. Wittgenstein is part way there. He has removed the mystery

which surrounds the thinking subject. To complete this part
of the program he must also rid us of the idea that the
objects of thought are things which are private. Wittgenstein
must show us that experiences, the contents of minds, what he
calls private objects, are as open to scrutiny as anything
material in the physical world.

THE PRIVATE OBJECT

In aphorism 293 Wittgenstein is moving in this direction,
towards the redundancy of the private object. The model he
uses to illustrate his point is pain, but his example is
appropriate to any sense datum, "feelings, moods, etc.".
Wittgenstein's beetle in the box is a graphic example
illustrating how mistaken our thinking is of the privacy of
sense data, as it relates to ourselves and to others. (TAW,
85)

To start his argument against this notion Wittgenstein asks
himself, "If I say of myself that it is only from my own case
that I know what the word pain means - must not I say the same
of other people too? And how can I generalize the one case so
irresponsibly"? (PI, 293) Suppose everyone is of the opinion
that the data they experience are private. How would it be
possible to discuss the data, or to acquaint ourselves of the
experiences of others? Would we be discussing data which is
similar, or would there always be an air of uncertainty about

the data? The popular notion is to assume that others experience what we do, always using ourselves as role models.

> But the argument is permeated by mentalist - individualist assumptions. My belief that you have a mind may be instinctive, but it is nevertheless some kind of belief. My reason for this postulate results from my deeming, from what I see of your body, that it is actuated from within as mine is. On the basis of my observation of your face, actions, etc. and of my introspective awareness of my own mental properties, I elaborate a hypothesis that you have these mental properties. (TAW, 83)

This method of reasoning from "analogy" takes us in the wrong direction. As with the ego the private object must be brought out into the open.

> Now someone tells me that he knows what pain is only from his own case! - Suppose everyone had a box with something in it: we call it a beetle. No one can look into anyone else's box and everyone says he knows what a beetle is only by looking at his beetle. (PI, 293)

The possibility exists, the beetle in our individual boxes could be "different", or it could be a thing which is forever "changing". It is also possible for the box to be "empty", as when pain is being simulated.

> But suppose the word beetle had a use in these peoples language? - If so it would not be used as the name of a thing. The thing in the box has no place in the language game; not even as a something, for the box might be empty. (PI, 293)

If one accepts the solipsist's claim about the privacy of the object, then "communication" with others about the object

becomes impossible. If communication about the object is possible, it then becomes "irrelevant" and drops out of the equation. "If communication is possible, the private object allegedly referred to is a piece of idle machinery and plays no part in the mechanism of communication". (IAI, 270)

> The very fact that we should so much like to say!
> This is the important thing - while we point
> privately to the sensation - is enough to show how
> much we are inclined to say something which gives
> no information. (PI, 298)

As with the ego the private object makes its appearance only in the act of speaking. Until then it cannot be found. Getting rid of the idea of the private object enables us to overcome "the epistemological difficulty" we encounter in "understanding one another". (TAW, 85) Bringing data into the open brings the contents of other minds into the public domain. The difficulties we assumed, were found to be illusory because of our misconception of the nature of thought.

Both realism and idealism have the same problem. This has to do with the nature of thought and the privacy of the object. They both assume there is a thinking subject to which sense data are presented. However, the idealist, according to Wittgenstein, has a better grasp of the problems associated with these concepts. The idealist tells the realist that "matching my sense data with the squirming, shrieking object on the floor is a tricky and precarious business". (TAW,

126)   The realist makes light of this, because by analogy everyone, without exception, must experience what he does, "Content to make suppositions on analogy with his own case, the realist simply misses the problem that the idealist strives to articulate". (TAW, 126)

> The realist, being content to make guesses or inferences from other people's behaviour on something like the argument from analogy with his own case, subscribes without qualms to the central myth of psychologism, which is that meanings are hidden away in the privacy of the head. We have no means of knowing what is going on in other people's minds, even when they tell us, but that is not a problem. (TAW, 130)

What Kerr is getting at, is that the realist is simply "missing" the problem. This, however, we would argue is not the case. The realist assumes, since we are all members of the same species, our sensoria are the same. Using this premise as his base line, the realist thinks the "Argument from Analogy" is a perfectly logical approach to the understanding of others. The realist is not shackled to a dualist conception of existence as is the idealist. In his criticism of realism Wittgenstein wants to claim,

> "What I wanted to say is that it is remarkable that those who ascribe reality only to things and not to our ideas move about so unquestioningly in the world as idea and never look outside it. (PR, 47)

Wittgenstein thinks, in spite of the realist's claim of the objective existence of a material world, the realist is as misled as the idealist. Both share the conviction that all

meaningful activity starts from the inside. They both miss what is so obvious, the "bustle of life". As Kerr says, one and all are of the same opinion, that the argument swirls around the idea of "matching" data in our "heads", to "items in the world".

> The meanings that establish the house of reason are not inside our individual minds. They are out in the open, constituting the space, wherever two or three gather to exchange gifts or threats or stories and songs. (TAW, 118)

"The idealist's skeptical inclinations, but also the realists bluff assurances, are equally dependent upon the myth that speaking, and afortiori thinking and meaning, are fundamentally ostensive definition of physical objects". (TAW, 123) This last quote by Kerr is a good place from which to start our inquiry into the problem of ostensive definition. A good portion of the Investigations is devoted to the critique of this concept of learning. Understanding Wittgenstein's critique of learning by ostension is made much easier, having grasped his ideas on the ego and the private object.

OSTENSIVE DEFINITION

Learning by the method of ostension is "The process of making clear the meaning of a word by non-verbal means such as pointing". (IPA, 57) It is a generally accepted practice of teaching. As Hospers goes on to explain,

> To connect words with the world, we need ostensive
> definition; it is the most fundamental kind of
> definition, in that without it no other kind of
> definition could even get started. (IPA, 57)

Without this method it would, it seems, have been impossible

for us to "have begun to learn the meanings" of the "first"

few words "thrown at us". (IPA, 57)

> As a matter of fact, we probably learned most of
> the words of ordinary life ostensively, although
> now, being adults and having accumulated a
> considerable reservoir of words, we learn most of
> our new words by means of them. (IPA, 57)

This makes meaning into a mental occurrence; there the object

and the name, and here the meaning. "Mother" points to "a

table, a desk, a chair", all the while naming each in turn.

Eventually, after repeating this act a number of times, the

meaning of each starts to form in the mind of the learner.

How is this accomplished? According to Hospers the learner

had to "sit down to think what it was about the Desk that was

different from either of the others". (IPA, 75) This is

where the learner's ability to discriminate comes into play.

It must be assumed, even at an early age a child's powers of

perception are sufficiently adequate to make learning by

ostension possible. Taking this a step further: "Thus if a

child can distinguish cats from dogs and pigs and all other

things, he has a concept of what a cat is, even though he

cannot state a definition and even though he has never heard

the word "cat" and connected the word with the thing by way of

ostensive definition". (IPA, 109) Similarly with colours,

children first learning colour words "cannot state any characteristics at all", but do know "how to make the distinction in practice". In order to discriminate, let us say, between "red and orange", children would, it is assumed, have something like the "concept of these two colours". (IPA, 109) The question is, are we born with the ability to conceptualize or do we develop this ability through "experience"? Wittgenstein opts for experience because he claims, that concepts are formed by a community all using the same word correctly. An example would be the use of the word red. It would be impossible to form the concept of redness in isolation. Therefore, Wittgenstein would not accept Hospers line of reasoning that the ability to conceptualize is innate. As we have said below, there is nothing on the inside other than what was placed there by language.

Following Hosper's line of reasoning, children, because of their inherent ability to discriminate, seem to be aware of differences between things prior to the practice of naming. In spite of being unable to name the cat or the dog, they appear to know a dog is not a cat, or red is not orange. While learning what things are, they must also learn what things are not. During the learning process children are continually told what is the fact, but are left on their own as to what is not the case. At a very early age children are continually bombarded with words. How do they manage to cope with the subtle differences between the words? They are not

taught that cat is a different word from red. This must be resolved on their own, possibly even before they can connect the appropriate word to the object.

So far the discussion has been about things in the physical world, but what about "thoughts, emotions, and acts of willing"? How are sense data accommodated, such as pain, sweetness, the "aroma of coffee", etc.? Their inaccessability precludes pointing in the usual manner. About all we can do is point to the "manifestation" of the experience. (IPA, 58-9) As a species, our reactions to sense data are similar. Then by analogy we assume our experiences must be similar. There seems to be no other way of learning "sensory words" other than by ostension. (IPA, 106) Up to this point we have been talking about "nouns, verbs and adjectives" but how are "connectives" or "auxiliaries" accommodated? (IPA, 112)

> Every word or phrase that we use must be traceable
> back to sense - experience in some way...every
> word to have meaning must be either capable of
> ostensive definition itself or defined by means of
> other words, and these perhaps by still others,
> which are ultimately definable by ostensive
> definitions. (IPA, 112)

As defined, this is more or less the problem with which Wittgenstein is confronted, a thinking subject, an ego, dispensing meanings to all phenomena appearing at its portals.

It is precisely in this area, in opposition to the proponents of learning by ostension, where Wittgenstein develops his most

telling argument against the private linguist. This individual thinks he can fully understand his own private language, and the words used to this end make sense to himself. Wittgenstein is challenging the private linguist at a very sensitive area, "that he understands what he means by pain, sensations, etc.". He is striking at the "very heart of the private linguist". (IAI, 265)

> "we are inclined to view the primitive indefinable terms of a language as deriving their meaning from our immediate experiences. Terms like red or sour, pain or joy, thought or desire are, we think understood by anyone who has the experiences of seeing red or tasting a sour taste, suffering pain or being joyful, thinking or willing and who has attached these words to the appropriate experiences. In this sense the foundations of language are conceived to lie in private experience. I know what I mean by pain or by red one wants to say, I mean this - and one, as it were, points within". (IAI, p. 245-46)

Our misconception about the nature of thought, has led us to accept the idea that the "function of words is to name, and of sentences, to describe". (IAI, 245) As was mentioned in the introduction, "Once you know what the word stands for you know its whole use". In <u>Zettle</u> Wittgenstein tells us to beware, things are not this easy. In order to name something other factors have to be considered.

> "Do not believe that you have the concept of colour within you because you look at a coloured object - however you look.
> (Anymore than you possess the concept of a negative number by having debts.)
>
> Red is something specific - that would have to mean the same as: That is something specific - said

while pointing to something red. But for that to
be intelligible, one would have to mean our
concept, red, to mean the use of that sample." (Z,
332-3)

Rush Rhees tells us, "I cannot learn the colour unless I can
see it; but I cannot learn it without language either. I know
it because I know the language. And it is similar with sensa-
tions." (DW, 59) Without language an individual would not
know or be able to discriminate between the sensations which
come flooding in. What Rhees is getting at is awareness.

> A bull may charge out at a red flag, rats may be
> trained in one way to red lights, but neither the
> bull nor the rat knows what red is, and neither
> knows that this is red. (DW, 57)

The important word here is react. Because animals react to
colour does not mean they can recognize colours. Recognition
presupposes having the concept of colour.

> No one can get the concept of colour just by
> looking at colours, or of red just by looking at
> red things. If I have the concept, I know how the
> word red is used. (DW, 57)

A bull does not just charge at a red flag because it is red.
The colour itself is not the attraction, but rather the manner
of the display of the flag is what triggers the bull's
response.

> "The phrase the same colour, must mean something
> and be generally understood, and also a different
> colour. I must know when it makes sense to talk
> about different shades of the same colour; and so
> on. Unless I did know what it makes sense to say,
> unless I were used to talking about colours and to

understand people when they did, then I should not know what red is and I should not know what red is when I see it." (DW, 58)

Rhee's argument applies equally to the private linguist and the animals. The lack of language would make it impossible for an individual to sort out the sense data which is being experienced. The data flooding in would lead to a mass of disorganized emotions if we were to accept Rhee's analysis. The human species like the other animals would only react to the data. It would be as Wittgenstein said of pain, "It can't be said of me at all (except perhaps as a joke) that I know I am in pain. What is it supposed to mean - except perhaps that I am in pain." (PI, 246) The human being and the bull see red and feel pain, but neither would know it is red or it is pain without language, because there would be nothing to know.

Language had to be in place first before one could sort out and catalogue the sensations. Having a language is having and being able to use concepts. Picking out the colour red presupposses an understanding of the concept of colour. "To possess a concept is to have mastered the technique of the use of a word. It is a skill, not an experience." Colour in this instance is an example which is applicable to any situation. (IAI, 266)

Even if our powers of perception and discrimination are fully functional, learning by ostension is impossible. When an

object is pointed at and named, what is the salient feature in the object that gives meaning to the name? How is an ostensive definition understood?

> In order to understand an ostensive definition: all you need - of course! - is to know or guess what the person giving the explanation is pointing to. That is whether for example to the shape of the object, or to its colour, or to its number, and so on. (PI, 33)

It seems the "learner" upon associating the word with the object understands "its meaning". (W, 156) What exactly does the learner perceive by looking at an object, "its shape, its colour, its number"? (PI, 33) More importantly, does he understand its function, how the object can be used?

> How did you do it? - you will say that you meant a different thing each time you pointed. And if I ask how that is done, you will say you concentrated your attention on the colour, the shape, etc. But I ask again how is that done? (PI, 33)

In the Blue Book Wittgenstein asks, "Can't the ostensive definition be misunderstood?" (BB, 1) Suppose the word "tove" is uttered in the act of pointing to a "pencil". How is it to "be interpreted to mean", "this is a pencil, this is round, this is wood, this is one, this is hard, etc. etc."? (BB, 2) Similarly, suppose "I give someone the order, fetch me a red flower from that meadow, how is he to know what sort of a flower to bring, as I have only given him a word?" (BB, 3) What is significant about the object would be difficult to determine just by hearing the name.

Chess is another example used skillfully to illustrate the fallacy of learning by ostension.

> When one shows someone the king in chess and says: This is the king, this does not tell him the use of the piece - unless he already knows the rules of the game up to this last point: the shape of the king. (PI, 31)

If the individual being shown the chessman does not have a grasp of board games, much learning will have to take place before even this act of naming can have meaning. However, if the individual is familiar with games, naming the piece will be relevant even if its use is not apparent.

> This is a king (or this is called a king) are a definition only if the learner already knows what a piece in a game is. That is if he has already played other games, or has watched other people playing and understood - and similar things. Further, only under these conditions will he be able to ask relevantly in the course of learning the game: What do you call this? - that is, this piece in a game. (PI, 31)

By these examples Wittgenstein is already pointing the way by which a word derives its meaning. "For a large class of cases - though not for all - in which we employ the word "meaning" it can be defined thus: the meaning of a word is its use in language." (PI, 43) "The use of a word in "practice" is its meaning." (BB, 69) This should not be confused with a proper name such as "Excalibur" because "the meaning of a name, is sometimes explained by pointing to its bearer". (PI, 43)

> Naming is so far not a move in the language game -
> any more than putting a piece in its place on the
> board is a move in chess. We may say nothing has
> so far been done, when a thing has been named. It
> has not even got a name except in the language
> game. (PI, 49)

In PI, 108 Wittgenstein asks "What is a word really?" is analogous to "What is a piece in chess?" Carefully through his examples he is moving us away from the idea that when an object is named its meaning is established; there the named object and here the meaning. There is nothing on the inside discriminating between the various characteristics peculiar to an object, determining its use, and therefore its meaning. Meanings are acquired only when words are used in the practice of living.

Looking "into the cabin of a locomotive" we see an array of "handles", which in appearance are "more or less alike". Each has a different function,

> One is the handle of a crank which can be moved
> continuously (it regulates the opening of a valve);
> another is the handle of a switch, which has only
> two effective positions, it is either off or on; a
> third is the handle of a brake lever, the harder
> one pulls on it, the harder it brakes; a fourth,
> the handle of a pump: it has an effect only so
> long as it is moved to and fro. (PI, 12)

The meaning of each and every "handle" is tied to its function as part of the overall "mechanism". In conjunction with other mechanical components they give the meaning, or the

significance, to what it is for something to be called a locomotive.

Wittgenstein asks us to look at the contents of a carpenter's "tool-box". What we see is a variety of objects. "There is a hammer, pliers, saw, screwdriver, rule, glue pot, glue, nails and screws. - The functions of these words are as diverse as the functions of these objects. (And in both cases there are similarities)." (PI, 11)

The examples mentioned above in PI, 11 and 12, illustrate the various uses which can be associated with a word. Words can be different because their uses are different. Others, though they are the same, (handles), can perform functions which are totally different. Connecting an object to a word does not give us an indication "of the word's meaning". "The meaning of a word is not the thing that corresponds to the word. We must beware of confusing the bearer of a name with the meaning of a name." (W156-7)

The tools in the tool box example can be equated to words, and their use to meanings. Taken all together the tools - in spite of their diversity - are used towards the same end. Similarly, names have one purpose and this is to describe. Wittgenstein tells us "naming is a preparation for description". (PI, 49) Names describe simple situations once

their meanings have been established. While sentences describe complex situations.

A considerable amount of preparation is required before something can be named or before one is able to discriminate successfully. In PI, 257 Wittgenstein talks about someone naming his experiences. Before something like this can take place "one forgets that a great deal of stage setting in the language is presupposed if the mere act of naming is to make sense". It would not do to arbitrarily pluck a word like "pain" out of thin air and apply it to a sensation. The word "pain" would have to mean something in the language-game. "Here the term language-game is meant to bring into prominence that fact that the speaking of language is part of an activity, or of a form of life". (PI, 23)

Pain is a concept which applies to a host of situations. There is pain as in a toothache or the pain experienced from an unfavourable comment, etc. "And when we speak of someone's having given a name to pain, what is presupposed is the existence of the grammar of the word pain, it shows the post where the new word is stationed". (PI, 257) By grammar Wittgenstein means the way a word is used to describe a situation, "Grammar tells us what kind of object anything is". (PI, 373) A word can be used incorrectly, making the description into a piece of nonsense. Using a word like pain correctly the private linguist must first have an

understanding of the meaning of "sensation". This as Hacker says, "is a word in our public language". As Wittgenstein says it is the post where the word pain is stationed. The private linguist must use the word in a manner similar to the way it is used publicly, if the word is to make sense to him. To do this he must have the concept of pain.

All conditions being normal, there is usually a recognizable behaviour associated with a sensation like pain. To show the importance of behaviour Wittgenstein asks, "What would it be like if human beings showed no outward signs of pain (did not groan, grimace, etc.)?"

> Then it would be impossible to teach a child the use of the word toothache - Well let's assume the child is a genius and invents a name for the sensation! - But then, of course, he couldn't make himself understood when he used the word - So does he understand the name without being able to explain its meaning to anyone? - But what does it mean to say he has named his pain? - How has he done this naming of pain?! And whatever he did what was its purpose? (PI, 257)

In aphorism 244 Wittgenstein gives us one possible explanation of how the "meanings of the names of sensations" are learned.

> Words are connected with the primitive, the natural expressions of the sensation and used in their place. A child has hurt himself and he cries; and then adults talk to him and teach him exclamations and, later sentences. They teach the child new pain behaviour.

"So you are saying that the word 'pain' really means crying? - On the contrary: the verbal expression of pain replaces

crying and does not describe it". (PI, 244) Sensation words
are first learned in the presence of the natural expression of
the sensation. Once the word is learned the sensation becomes
redundant as has been shown during the discussion of the
private object in aphorism 293. Behaviour is important but
only as part of the language game, to ensure the sensation
word is being used correctly.

> If we cut out human behaviour, which is the
> expression of sensation, it looks as if I might
> legitimately begin to doubt afresh. My temptation
> to say that one might take a sensation for
> something other than what it is arises from this:
> if I assume the abrogation of the normal language
> game with the expression of a sensation, I need a
> criterion of identity for the sensation and then
> the possibility of error exists. (PI, 288)

There is no other way to first learn to name the things in
inner life other than through behaviour. Wittgenstein in
addition to what has been mentioned above also says "an inner
process stands in need of outward criteria". (PI, 580) The
only way it is possible to be sure a child is learning
language correctly is to observe its behaviour as it goes
about using language. When the child is told to do or stop
doing something, its behaviour is monitored to ensure it
understands the meanings associated with the language. Once
the meanings of things have been correctly entrenched, the
behaviour, along with the private object, drops out as
irrelevant in future communication. This is evident in
everything a child does, such as following an order, answering
a question, asking for an object, etc. A child learning a

language would be unable to sort out the various data it experiences without the aid of its social group.

CORRECTNESS

In spite of this, suppose a child who is a "genius" somehow manages to give itself a mental ostensive definition. This individual fixes his "attention on the sensation and so as it were points to it inwardly". (PI, 258) The difficulty here is to remember the "connection right in the future". Being able to remember the sense datum correctly is another critique which Wittgenstein brings "against the possibility of a private language". (FP, 214)

> But in the present case I have no criterion of correctness. One would like to say: whatever is going to seem right to me is right. And that only means that here we can't talk about right. (PI, 258)

There are many difficulties associated with the concept of correctness. The suggestion in 258 has to do with "seeming right and being right". (FP, 361) The difficulty associated with being right could be framed in this manner. "If sensation language is completely detached from the physical world, what exactly is the crucial loss which leaves us without a distinction between seeming right and being right"? (FP, 361) In the first place we lose the agreement of the community which is available to the speaker of a public language. Secondly, the objects of stimulation with which we

have contact in the physical world are not there to be used repeatedly to ensure the same datum is being sensed. (FP, 362) As Pears says the "standard physical objects which could be assumed to provide the same stimulation are missing". (FP, 362) The first one is self-explanatory because if one consults with others the language would not be private. The second likewise, because if our behaviour is associated with observable objects the words concocted to name the data would be decipherable. In other words, if we attempt to name our datum privately, in complete detachment from the world, we would be on our own as to its verification.

The private linguist would have to be able to discriminate successfully between the flood of sense data coming in on him at all times. Lacking the confirmation of a community which the speakers of a public language have in the process of learning, the private linguist could end up as the often quoted example of the archer shooting at an imaginary target. When asked where his arrow hit he could say anything, the bull's eye or whatever, "whatever is going to seem right to me is right". But, says Wittgenstein suppose I "keep a diary about the recurrence of a certain sensation". The sensation in the diary is given the sign "S", and every time the sensation recurs I note the sign in a "calendar". What the private linguist hopes to do is use the sensation "S" in the diary as a sample. But asks Wittgenstein, does not one do this in everyday life, point to things to verify something

similar? The private linguist is trying to make the "sensation function as a sample for the correct use of a word". (IAI, 267) In the first place, one cannot point to a sensation in the same manner as is done when one gives an ostensive definition.

> But still I can give myself a kind of ostensive definition - How? Can I point to the sensation? Not in the ordinary sense. But I speak or write the sign down, and at the same time I concentrate my attention on the sensation - and so as it were point to it inwardly - But what is this ceremony for? for that is all it seems to be! (PI, 258)

A subjective ostensive definition is an "idle ceremony" that achieves nothing "For a genuine definition has the role of establishing the meaning of a sign by laying down a rule for its use, but concentrating one's attention on a sensation and saying "S" does not do this at all". (IAI, P. 267) The thing to be done is to make a "connection" here with "S" and the sensation, the sample and the sign. The problem is remembering the "connection right in the future". He goes on to say "but in the present case I have no criterion of correctness". (PI, No. 258)

> The point does not concern the fallibility of memory, but is rather the putative mental ostensive definition was intended to provide a rule for the correct use of S and now it transpires that in order to do so it presupposes the concept "S". For to remember correctly can only be to remember that a certain sensation or mental image is an image of "S". (IAI, 267)

Giving a mental ostensive definition presupposed the concept of "S". A mental ostensive act such as pointing internally at a sensation will not give one a rule for its use. This can only come about when one has the concept of what "S" stands for. To be able to sort out sense data such as pain, red, sour, sweet, etc. the concept of pain, colour, of sourness or sweetness is required. Remembering the data is being able to successfully pick it out. This is accomplished when one understands what the word sensation stands for.

1. Remembering "S" correctly is matching it to a sample.
2. Having a sample of "S" is having the concept "S".
3. The concept "S" enables one to use the sign "S" correctly.

Believing you have it right won't help either. In PI, 260 Wittgenstein tells us, "Perhaps you believe it", here again "whatever is going to seem right to me is right". A great deal of preparatory work must be done before something can be remembered. Returning to the pencil example; in order to know that the object is a pencil, one must, it is assumed, be aware of some of the features which go into the making of a pencil. As was already discussed this entails roundness, slenderness, length, sharpness, etc. However, each of these characteristics themselves require concepts before something like roundness or length are understood. It is not expected of a child to be aware of features to this extent, but it is

assumed that there must be something of interest about the object in order to begin the learning process. Children at a very early age can recognize things which are strange, out of the ordinary, not part of their immediate environment. This means that on the strength of their visual powers alone things are being discerned. How this is accomplished is difficult to say, but no doubt associations, comparisons, differences are being made and noted. However, Wittgenstein would claim all this is meaningless. The child would only start to understand the word pencil when its function became apparent, and this with the repeated assistance of the child's social group. By repeatedly using the pencil in conjunction with the word the meaning becomes apparent. The child would then learn to use the word correctly.

<u>MEMORY</u>

The faculty of memory plays a role in the correct recognition of sense data. In PI, 265 Wittgenstein discusses this faculty. He asks us to conjure up a "mnemonic" table of colours, which is to be used as a sample to which the sign "S" can be matched.

"Let us imagine a table (something like a dictionary) that exists only in our imagination. A dictionary can be used to justify the translation of a word X by a word Y". (PI, 265)

> But are we also to call it a justification if such
> a table is to be looked up only in the imagination?
> - Well yes then it is a subjective definition. -
> But justification consists in appealing to
> something independent. - But surely I can appeal
> from one memory to another? (PI, 265)

The difficulty here is that the sample table would itself have to be checked for "correctness". If this is so, how could an unconfirmed table test the correctness of "S"? A table is used to certify the correctness of a sign, it gives a rule for the use of the sign. The table would have to be something independent of memory in order to justify the use of "S" correctly.

> For example, I don't know if I have remembered the
> time of departure of a train right and to check it
> I call to mind, how a page of the timetable
> looked. Isn't it the same here? - No, for this
> process has got to produce a memory which is
> actually correct. (PI, 265)

The timetable itself in this example would require confirmation. Therefore, how could it verify the departure of the train? There is a regress in the making, "(As if someone were to buy several copies of the morning paper to assure himself that what it said was true)" (PI, 265) "It is as if when I uttered the word I cast a sidelong glance at the private sensation, as it were, in order to say to myself: I know alright what I mean by it." (PI, 273) As an example, Hacker uses a coloured curtain, "I said that the curtains are indigo because they are this colour ✍ , and this is indigo" referring to his sample. (IAI, 291) In this example one is

comparing a sign to a sample which is observable, but what
about a datum such as pain? This is where the difficulties
associated with memory become apparent because it can be said,
"if my pain is a sample for the use of pain then it seems that
only I can really know that I am in pain, for only I can
compare what I have with the sample". (IAI, 291) This leads
us from scepticism to "solipsism", and doubt about others
having "what I have", "And now total confusion reigns". (IAI,
291) Once more we return to the thinking subject, the ego,
and the private object, against which Wittgenstein argued so
forcefully.

A sensation like pain is not verified "from an experience to
which it corresponds or which lies behind it, but from the
fact that it is a natural, primitive, pre-cultural reaction to
circumstances". (IAI, 296) Similarly with "laughter", it is
"a natural response to circumstances". Precisely on a
substructure of this nature "our concepts of sensation,
feeling, expecting, hoping, etc. are erected". (IAI, 296)
Memory and correctness by themselves are not sufficient
because remembering is the result of recognizing the datum
within the context of the appropriate language game.

One learns what a word means by its use, not in isolation, but
in the way others use the word. There are rules for the use
of a word and it takes a community to establish the rules. A
Crusoe type individual "could make sounds or marks, this would

only be what he does. The sounds and marks would not have a meaning independent of his production of them - which comes to saying they would not have meaning in the sense words have meaning". (WLR, 22) Let us say a "solitary individual" when he sees a colour makes a mark or utters a sound to record the colour. To be able to discriminate between colours presupposes the concept of colour. But to have the concept of colour would be to use the supposed marks or sounds with a purpose. Making sounds and marks which have a purpose would be following a rule for their use. The required rule for the use of a word could not be set by an individual in isolation, who did not even have the concept of what are sounds and marks.

RULES

In PI, 202 Wittgenstein tells us that "obeying a rule is a practice". In PI, 199, "To obey a rule, to make a report, to give an order, to play a game of chess, are customs (uses, institutions)". Using a word according to a rule is using it in the art of living. "Hence it is not possible to obey a rule privately: otherwise thinking one was obeying a rule would be the same thing as obeying it." (PI, 202)

When a piece is moved in a game of chess it is done so in accord with a rule. The correct use of a word is the same as a successful move in chess. Not following a rule correctly

would result in the meaningless use of a word or the loss of a piece. "If everything can be made out to accord with a rule, then it can also be made out to conflict with it." (PI, 202) Using language correctly so that it is understandable is to use it as the operation of "a calculus according to definite rules". (PI, 81) In PI, 85 we are told, "A rule stands there like a sign-post" and "does after all leave no room for doubt". Again in PI 87, "The sign post is in order - if, under normal circumstances, it fulfills its purpose." Wittgenstein does not in any place define what the rules are but this is not necessary. When language is used correctly, what is said then makes sense to others. When used incorrectly the sense of a word or sentence becomes meaning-less and communication becomes impossible.

> The sense of a sentence - one would like to say - may of course, leave this or that open, but the sentence must nevertheless have a definite sense. An indefinite sense - that would not really be a sense at all. - This is like: An indefinite boundary is not really a boundary at all. (PI, 9)

In PI 206, "Following a rule is analogous to obeying an order. We are trained to do so; we react to an order in a particular way". Then the question is asked, "But what if one person reacts in one way and another in another way to the order and the training? Which one is right?"

> Suppose you came as an explorer into an unknown country with a language quite strange to you. In what circumstances would you say that the people there gave orders, understood them, obeyed them, rebelled against them, and so on? (PI, 206)

"The common behaviour of mankind is the system of reference by
means of which we interpret an unknown language." (PI, 206)
What people say and what they do are connected, it is part and
parcel of what Wittgenstein means by a "form of life".

> "So you are saying that human agreement decides
> what is true and what is false? - It is what human
> beings say that is true and false; and they agree
> in the language they use. (PI, 241)

"That is not agreement in opinions but in form of life."
Early in the Investigations we are told "to imagine a language
means to imagine a form of life". (PI, 19)

> When Wittgenstein connects a language with a human
> form of life, he is seeing language as embedded in
> some characteristic way of acting of many people,
> not in the behaviour of a single individual. He
> says he is providing "remarks on the natural
> history of human beings". His term language-game
> is meant to emphasize that a use of language
> reflects a form of life. (WLR, 23)

Sounds or marks when used as language are bound to rules and
in this manner their correctness is established. "When I obey
a rule, I do not choose. I obey the rule blindly." (PI,
219) To stress the importance of agreement Malcom quotes B.F.
Armstrong.

> Words if they are to be words, cannot mean whatever
> an individual happens to think they mean; a correct
> use cannot be whatever an individual happens to do
> with a sign. It must be possible for an individual
> to use a sign correctly, if it is to be a word;
> i.e., if it is to mean one thing rather than
> another.
>
> The independent way of using a sign that is
> required or the satisfaction of the conditions on a

correct use cannot be provided by a single individual. (WLR, 28)

"Every sign by itself seems dead. What gives it life? - In use it is alive." (PI, 432) "The rule governed nature of our language permeates our life." (RC, 111, 302) Pitcher thinks the "central concept is clearly that of the use of words". (PW, 230) The use to which Pitcher alludes has to do with "speech activities" or what Wittgenstein calls "language-games".

> When Wittgenstein speaks of the use of words, it is usually this aspect of use that he has in mind. Even the important semantic aspect is largely absorbed into the general framework of speech activities, the semantic conditions being viewed as the conditions under which speech activities of various sorts can be engaged in. (PW, 239)

"Speaking a language" would include, "understanding things said in it", behaving and acting in ways appropriate, both linguistically and non-linguistically. (PW, 242) All this would fall within what is meant by a "form of life" peculiar to the human species. This, as Pitcher says, explains Wittgenstein's statement, "If a lion could talk, we would not understand him" because the lion's form of life is "radically different". "Even if he could utter grammatically correct sentences his behaviour" would still preclude our understanding. (PW, 243)

CONCEPTS

Wittgenstein leads us to believe the reason that the human species can discriminate between and recognize sense data is due to its ability to form concepts. Without the concept of pain or the colour red, to use Wittgenstein's models, one would not recognize either datum. To repeat one of our earlier quotes, Wittgenstein says, "Do not believe that you have the concept of colour within you because you look at a coloured object - however you look. Red is something specific - that would have to mean the same as: That is something specific - said while pointing to something red." (Z, 332-3) To be able to pick out the colour red or anything else requires the concept of the element.

It is our agreement on things as a community of like-thinking individuals which enables us to form concepts, "If humans were not in general agreed about the colour of things, if undetermined cases were not exceptional, then our concept of colour could not exist. No, our concept would not exist." (Z, 351) Concepts not only tell us what there is, they also tell us what is not the case. "In order to doubt whether someone else is in pain he needs not pain, but the concept pain." (Z, 548) There are behaviours associated with pain so that in their absence, we can legitimately doubt whether someone is in pain. Without the concept of pain it would be impossible to determine the case either way.

If you are not clear about the role of logic in
colour concepts, begin with the simple case of e.g.
a yellowish red. This exists, no one doubts that.
How do I learn the use of the word yellowish?
Through language games in which, for example,
things are put in a certain order.

Thus I can learn, in agreement with other people,
to recognize yellowish and still more yellowish
red, green, brown and white.

In the course of this I learn to proceed
independently just as I do in arithmetic. (RC,
111, 110)

In PI, 380, the question is asked "How do I recognize that
this is red?" The normal reaction to this is that one looks
and sees, "I see that it is this; and then I know that that is
what this is called. This - What?!" Wittgenstein claims, all
we are doing is going back to the notion of the "ostensive
definition". In answer to this situation he says, "I could
not apply any rules to a private transition from what is seen
to words. Here the rules really would hang in the air; for
the institution of their use is lacking". (PI, 380) Upon
hearing the word red an image of the colour is formed, but
"what is the meaning of the words: This image? How does one
point to an image? How does one point twice to the same
image?" (PI, 382)

In order to point to the "same image" an understanding of the
word "same" is required". (PI, 378) In other words to "know
that this colour is red" could be answered by "I have learned
English". (PI, 381) In PI, 384, "You learned the concept
"pain" when you learned language". In PI, 569-70, "Language

is an instrument. Its concepts are instruments....Concepts lead us to make investigations; are the expressions of our interest, and direct our interest". The scenario could be expressed in this manner; language-use-concepts. Language had to first be in place before sense data could be recognized. Without the concept, knowledge about anything exterior or interior would be possible. Concepts are acquired when language is used. Naming a sensation privately, (subjective ostensive definition), is not using the name and precludes concept formation.

To a certain extent this exhausts our discussion of Wittgenstein's critique of learning by ostension. However, a short summary seems appropriate to make clear the exact nature of the problem with which Part I has been concerned, before moving on to Part II.

AWARENESS

Wittgenstein's critical remarks on learning by ostension are directed at ideas generally held on awareness and discrimination. Rush Rhees framed the problem in this manner, "A bull may charge at a red flag, and rats may be trained to react in one way to red lights and in another way to blue lights, but neither the bull nor the rat knows what red is, and neither knows that this is red". (DW, 57) The reason is, because neither has the "concept red" or the "concept colour".

The above example would apply equally to the human species except for language. An individual would see red, or feel pain, but not know it is red, or pain, in the absence of language. Knowing that this is red, this is pain, is being able to recognize the datum correctly when it reappears. The problem is not really one of how to fix a label to a datum, but, simply of remembering the datum correctly and knowing that this particular datum is different from some other. It would be as if the individual made a mental mark of the particular datum. But making a mental mark would be the same as giving oneself an ostensive definition. As previously found, it would be impossible without language, concepts, and all that this entails.

Wittgenstein, in his analysis of the thinking subject, made it clear that without language an entity of this nature - a conscious self, fully cognizant of its environment and the advantages therein - would not be found. Likewise the objects of consciousness were found not to be private, but owed their existence, as did the self, to a language held in common. Since the objects only become evident because of language, then all the speakers of the language have the same access to the same object. This enables us as a species to understand the experiences of others. As an example; it does not make sense to say we can feel each other's pain. It is reasonable, though, to claim our pains are the same and we can both feel the same pain. It is not pain as in possession, but pain as

in nature. Without language there would be no medium in which thought could occur and therefore nothing about which to think.

Speakers of a public language should be able to give themselves a private ostensive definition if they so choose. Being accomplished speakers of a public language, knowing how language is used, having concepts, makes it relatively simple to record sense data. The question is, for what purpose? "Would it be a language at all?" It would be, as Wittgenstein said, like the "right hand" putting "money" into the "left hand". "When the left hand has taken the money from the right, etc., we shall ask: Well, and what of it? And the same could be asked if a person had given himself a private definition of a word". (PI, 268) In reality this individual would only be creating a kind of code for his own use.

Wittgenstein's epistemic theory of perception leads us to believe that we must work from the outside towards the inside. Wittgenstein does not say there is nothing on the inside, "yet you again and again reach the conclusion that the sensation is a nothing - not at all. It is not a something but not a nothing either!" (PI, 304) There is "something" on the inside, but the problem is how to get there.

Wittgenstein was deliberate and thoughtful; the models he used such as pain, and the colour red, were used for a purpose. He

could have based his models on pain and sweetness, or other combinations, but they would not have accomplished what he had in mind. He uses examples such as the colour "red", which is observable, to "point the way" to the unobservable, such as "pain". If it were not possible to name something like "red", where public agreement can be reached, how could we name the unobservable like "pain", "bitterness", "feelings", etc.? Wittgenstein, continually through his many graphic examples, stressed in his own way, that explaining sense data or things in the world, starting from the inside to the out, was the wrong approach. Being able to form images in the mind is not the process of thinking, and does not lead to an understanding of what is before the "mind's eye". Awareness or understanding is not a "mental" state.

> Try not to think of understanding as a mental process at all. - For that is the expression which confuses you. But ask yourself: in what sort of case, in what kind of circumstances, do we say, "Now I know how to go on", when, that is, the formula has occurred to me? - In the sense in which there are processes (including mental processes) which are characteristic of understanding, understanding is not a mental process.
>
> (A pain's growing more or less; the hearing of a tune or a sentence: these are mental processes.)
> (PI, 154)

"Wittgenstein is not here denying that there are characteristic accompanyments to meaning and understanding." (WM, 4) At times "images" and other related "phenomena" do appear in conjunction "when we utter or understand words - but he is denying that such experiential phenomena could

constitute understanding. Experiences are at most a symptom or sign of understanding; they are not understanding itself." (WM, 4) Describing understanding as a "mental process" is to put it on a par with data such as "pain", "depression" and "excitement". Once again we are led in the direction of the thinking subject, the ego. Wittgenstein cautions us against this interpretation of understanding. Similarly, "meaning is not a process which accompanies a word. For no process could have the consequences of meaning". (PI, 218) In the Blue Book we are told, "there is a kind of general disease of thinking which always looks for (and finds) what would be called a mental state from which all our acts spring as from a reservoir". (BB, 143)

In our opinion and others, Wittgenstein's attack on the private language argument precedes section 243 of the Investigations. (WRPL, 5) It is the second paragraph of aphorism 243, which makes clear, in only a few words, the nature of the problem towards which he painstakingly worked his way. "But could we imagine a language in which a person could write down or give vocal expression to his inner experiences - his feelings, moods and the rest - for his private use?....The individual words of this language are to refer to what can only be known to the person speaking; to his immediate private sensations."

The aphorisms following PI, 243 are relevant to the extent they reinforce what was previously detailed.

> Wittgenstein's fundamental point in the sections following 243 is that in a putative private language neither the speaker nor the hearer has a criterion for telling whether the rules of the language are being obeyed correctly; there is no check on whether the words which only I the speaker understand are being employed with a constant meaning from occasion to occasion...that in a private language there would be no distinction between real and apparent rule - following.
>
> It follows that any genuine (rule governed) language must refer only to things and properties whose presence can be publicly verified: in particular, there must be public criteria for the presence of sensations if meaningful sensations words are to be possible. And in point of fact such criteria do figure in our actual acquisition of sensation language, since we use (eg.) "pain" precisely as a replacement for the kind of behaviour which provides others with a warrant for ascribing pain to us. (WM, 48, 49)

The main thrust of Wittgenstein's work on language in the Investigations is not to show the impossibility of someone developing a private language. He is well aware that a meaningful, useable, reliable, language of this nature is impossible even for a language user to create. There would be, as he has shown, many missing parts, to make it into more than simply a code.

Wittgenstein was after something more important, and this appears in his discussions preceding PI, 243 of the Investigations, in Zettle, the Blue and Brown Books, etc.. This is, we are led to believe, that without a language held

in common, the human species would not be aware of, or recognize the data it experiences. Indeed, it is because of language, that knowledge about anything and everything is possible. Wittgenstein was concerned to show, that as an individual is taught and learns to use language their powers of perception are activated. Therefore, it is language users, teaching potential language users, how to sort out the various phenomena appearing at their portals.

Wittgenstein's arguments can be very convincing to one coming from a species dependent on language. There is no doubt language is all important to the human species, because of the "form of life" peculiar to it. The species could not function to the extent it does without language. Much of what falls under culture and its institutions would be impossible without language. Mathematics, poetry, commerce, etc., exist only because of our ability to use language. This is not in question, it is part and parcel of what differentiates the human species from others within the animal kingdom.

If the above were all Wittgenstein intended then there would not be any disagreement. However, it does not appear to be the case. Much of what he has to say before PI, 243, and in other of his writings, leads us to believe he was interested in issues more fundamental in nature. He was concerned with language and the cognitive processes. His efforts were directed towards showing that language predated and made effective the functioning of the cognitive processes.

Wittgenstein could not imagine the human species without language. He was out to show, that we learn to recognize sense data as we learn to use language. As we are taught language our powers of perception are activated, and we learn to discriminate between, recognize and remember sense data.

We will not repeat Wittgenstein's arguments and conclusions;
they have been clearly detailed in Part I. Rather, we will
get on and state our position.

LANGUAGE AND EVOLUTION

Wittgenstein, we think has put the cart before the horse. We
believe the cognitive processes of the human species had to be
in place before language of any nature could make an
appearance. As evolutionists, Wittgenstein's theory on the
"faculty of knowing, perceiving, conceiving" is not
satisfying. He leads us to believe the cognitive processes of
the species would not have developed as they have in the
absence of language. As previously mentioned, in Zettle,
Wittgenstein tells us, a language which is primitive, would
produce only primitive behaviour. In the complete absence of
language the species would be aware of itself and its
environment to the extent portrayed by Rush Rhees, when he
spoke of the rat and the bull. The colour vocabulary of the
Dani people would be considered primitive because they have a
limited number of terms to name colours. In spite of this it
has been found to be the contrary, their lack of colour terms
does not hamper their ability to discriminate between shades
of colour. Primitive in this case would mean the inability to
discriminate. More will be said on this later.

As evolutionists and materialists, we believe language made its appearance late in the evolutionary time table of the species. Professor Shalom once remarked; there had to be a point in time, in the universe, where data such as pleasure and pain did not exist. Eventually organisms evolved able to feel these qualities. Only much later were they able to talk about their experiences. In the course of time everything emerged. When working in the area of congition it should be within the encompassing framework of the known history of a species. Language philosophers, among them Wittgenstein, do not appear to take this schema into consideration. In the <u>Tractatus</u> Wittgenstein tells us, "Darwin's theory has no more to do with philosophy than any other hypothesis in natural science". In the <u>Investigations</u> we are told,

> If the formation of concepts can be explained by facts of nature, should we not be interested, not in grammar, but rather in that in nature which is the basis of grammar? - Our interest certainly includes the correspondence between concepts and the very general facts of nature...But our interest does not fall back upon these possible causes of the formation of concepts; we are not doing natural science; nor yet natural history - since we can also invent fictitious natural history for our purposes. (PI, ii, xii)

Continuing on, Wittgenstein speaks of the "Darwin upheaval"; and the idea central to this concept, that of "monocellular organisms becoming more and more complicated until they become mammels, men, etc." (WLC, 32)

> Did anyone see this process happening? No. Has anyone seen it happening now? No. The evidence of

> breeding is just a drop in the bucket. But there
> were thousands of books in which this was said to
> be the obvious solution. People were certain on
> grounds which were extremely thin. Couldn't there
> have been an attitude which said: I don't know.
> It is an interesting hypothesis which may
> eventually be well confirmed? This shows how you
> can be persuaded of a certain thing. In the end
> you forget entirely every question of verification,
> you are just sure it must have been like that.
> (WLC, 32)

Referring to this quote Michael Ruse says, "Apparently this scepticism about the status of evolution itself was one shared by that most influential of modern philosophers, Ludwig Wittgenstein." (TDS, 2) Ruse claims, and we agree,

> But I do most insistently argue that evolutionary
> biology must be brought right up front in
> philosophical discussion. In particular, we must
> begin with Charles Darwin's theory of evolution
> through natural selection. In every sense of the
> word, the time has come to take Darwin seriously.
> (TDS, xiii)

People from all walks of life look to the various sciences and related technologies to make the practice of living qualitatively better. However, when it comes to their particular areas of interest many tend to disregard the sciences, their findings, or to accept their assistance in the quest for truth and the resolution of problems. Professor Shalom levels an accusation of this nature against philosophers working in the area of language and cognition. What must be gathered from this exchange is, Wittgenstein was of the opinion that even if the theory of evolution were true, it would have no bearing on the subject matter with which he

was concerned. We would disagree with this line of thinking because his conclusions lead us to think otherwise.

Wittgenstein leads us to believe our cognitive process would not function as they now do without language. He appears to operate on the premise that language in some form has always been present with the species. As language became more sophisticated so likewise did our powers of perception. It is as if our cognitive process were always there, dormant, waiting to be let loose by language of some form. The idea that language could have arrived late in the scheme of things, that our cognitive process could have been quite well developed and functional, preparing the way for language does not appear to be part of his equation. The gradual development, and refining, of both the physical and mental processes of the species does appear to have been thought through on Wittgenstein's part. His approach gives us the impression that the human species appeared on the scene, much the same as they are today, ready to perform. As evolutionists we do not go along with this scenario; we do think everything developed gradually to this point in time, with language as the final cog in the wheel.

There is a large gap spanning millions of years between the origins of the hominid line, and of the meaningful use of speech. How did the species function during this length of time without language? A few words will be said on the

origins of speech/language, keeping in mind the conjectural nature of this inquiry. Michael Ruse, among others, credits the origin of speech to the period in the evolutionary time table where "Homo sapiens" are first slotted.

> Unfortunately, language per se leaves little trace. Thus, we need to focus more on its physical expression, namely speech. Happily when we do this, we find strong indications that evolution occurred very much in the way one would suppose if natural selection were the primary evolutionary factor.
>
> Reconstructing the shape of the vocal passage from skulls, we find that, up to Homo sapiens, the passage was much as one encounters in today's apes. Then we get a gradual lengthening of the supralaryngeal tract, until some 30,000 years ago the modern human form was fully developed. (TDS, 133-4)

Ruse then goes on to say, "This coincides with the beginning of the explosive growth of human culture". Matters are not as straight cut because, "human-speech-capacity evolution is more complex and interesting than one of straight unilinear development to the present". (TDS, 134) Apparently, of the species Homo sapiens, a subspecies, "Neanderthal kept their apelike vocal system," to their detriment. "The other group, our ancestors, went the way of articulate speech. With the full development of the supralaryngeal tract, communication and language started to build". (TDS, 134) Linguists "believe they have partially reconstructed human language as it was first uttered nearly 100,000 years ago. Buttressed by findings in archeology and genetics". (TS, 22) "Geneticists" using "DNA" can determine "the extent to which geographically

dispersed people are genetically related; the less similar

their DNA, the further back one must go to find their common

human ancestors". (TS, 27) Linguists refer to the language

first spoken as "proto-world".

> In short, all evidence suggests that the
> reconstructed proto-world was the language of the
> first H. sapiens, humans essentially indistin-
> guishable from ourselves. How long ago was the
> first language spoken? The crucial piece of
> evidence was discovered by archaeologists in Israel
> who recently analyzed the teeth of the oldest known
> H. sapiens: they were 92,000 years old. (TS, 27)

The linguists claim, "language evolved from the simple to the

complex". According to their studies, "consonants were the

sole bearers of meanings". In addition to the consonants,

"only one vowel, "a", was pronounced naturally". The time

frame and how language developed is speculative to a certain

extent, but studies are ongoing. (TS, 27)

It is generally assumed there is a gap between, "intentional

states" and the speech act, the speech act and meaningful

language. Hookway discusses this question.

> imagine a class of being who were capable of having
> intentional states like belief, desire and
> intention but who did not have a language. What
> more would they require in order to perform
> linguistic acts? Notice that there is nothing
> fanciful in the supposition of beings in such a
> state, since as far as we know the human species
> was once in that state. (MME, 73)

The question to which this quote leads is, "What would they need in order to get from having intentional states to performing illocutionary acts"? (MME, 73)

> The first thing that our beings would need to perform illocutionary acts is some means for externalizing, for making publicly recognizable to others, the expressions of their intentional states. A being that can do that on purpose, that is a being that does not just express its intentional states but performs acts for the purpose of letting others know its intentional states, already has a primitive form of speech act. (MME, 73)

To borrow an expression from Wittgenstein, much "stage setting" had to take place before something as complicated as language could make its appearance. It seems reasonable to assume, man communicated his intentions by behaviours similar to those used to this day by other animals. This in itself would be a "primitive form of speech act". What the above quotes lead us to believe is that "intention, belief and desire", (the cognitive process) had to first be in place. This is the stage setting, the prerequisite to some form of "speech act".

Speech activity is not an indication of meaningful language activity. Language used as a tool could have arrived on the scene at a much later date. However, if one chooses, it is even reasonable to suppose language developed concomitantly with speech. Ruse is interested to show clearly that language had its "roots well back in our pre-cultural, pre-human

speech, early hominid (or pre-hominid) existence." (TDS, 135) Due to the lack of material in this area, to make his point, Ruse turns his attention to the "great apes". The nearest living relatives of the human species. Ruse is out to show there had to be a pre-linguistic structure in place to prepare the way for language.

Much effort has been expended to teach the apes, or coerce them into using language. All to no avail, they simply do not have the vocal structure required to make this happen. However, data relevant to this area of study is very encouraging, and goes a long way towards supporting the theories put forward by the evolutionists. Animal studies are providing the evidence required for the theory of a pre-linguistic structure onto which language was eventually hooked. More will be said on speech and language later. There are numerous studies taking place at the present concerned with "whether non-human primates possess capacities which human beings use in exercising speech". (CBM, 87)

Wittgenstein frome what we can see does not take the evolutionary process into consideration. The human species must have at some point in time, found speech acts useful, and eventually, collectively, a method of communication came into being. Before this came about the cognitive processes had to be in place to make language possible. Collectively the hominids had to be aware of the value of communicating their

intentional states. This is the opposite to what Wittgenstein leads us to believe. He claims language is the element which activated the cognitive processes. The species during the evolutionary process had to survive somehow, and this we claim was made possible, by cognitive processes which were fully functional in the absence of language.

BIOLOGICAL SIMILARITIES

The problems associated with animal studies are numerous. In many cases all that can be done with other species is to interpret behaviour to gather the necessary information. Mary Midgley said it was of the utmost importance to study other animals because,

> We are not just like other animals; we are animals. Our difference from other species may be striking but comparisons with them have always been and must be crucial to our view of ourselves. (BM, XIII)

If we want to know what our species was like in its earlier stages of development, the animals could possibly provide some of the answers. Our search must concentrate on species presently within our kingdom to supply the required information. Of these the "great apes" or particularly the chimps can provide some of the needed data. To show how narrow the genetic gap is between ourselves and other members within the kingdom, Slack looks to the chimps. A method was developed in recent years, and used to indicate the time of

divergence between the human species and the apes. Slack goes on to say, "Protein" studies show the divergence between humans and chimps to be 0.8 of 1%. "That is we share 99.2% of our genetic inheritance with chimps, corresponding to a mere 5 million years since our most common ancestor". (AMA, 4) The upshot of this analysis is, if the genetic differences between humans and the chimps are this small, "the genetic determinants of our cognitive abilities" must likewise be relatively small. (AMA, 4)

> The really tough cognitive tasks are easily handled by most humans. And in this cognitive ability other animals, especially mammals, are pretty much on a par with us. They too have demonstrable skills as sophisticated pattern-recognizers in perceptual and learning situations. (AMA, 7)

Speaking of language, "It may seem reasonable to argue that because animals lack this ability, they are demonstrably inferior to humans in cognitive ability". (AMA, 7) Slack goes on to say, "the cognitive complexity of language use is parasitic on the cognitive complexity of the conceptual structures it serves to communicate. And animals, too, utilize the same types of conceptual structures". (AMA, 8) The "evidence" leans towards "the hypothesis", human "cognitive abilities" had evolved before man was in a position to "communicate them". (AMA, 8) This means language is not an indicator of who has what "cognitive abilities".

It is assumed that because animals do not play "chess", "prove mathematical theorems" or do "medical diagnosis" they lack "intelligence". "Artifical intelligence" studies have shown these activities to be relatively simple. The more difficult tasks are those which are taken for granted, such as "daily perceptual and learning tasks". (AMA, 7) Doing things to survive in a demanding environment requires learning skills which are not, in degree, inferior. In areas such as this both human and non-human animals according to Slack are relatively close.

> Most human thinkers regard the chimp as a malformed, irrelevant oddity while seeing themselves as stepping stones to the Almighty. To an evolutionist this cannot be so. There exists no objective basis on which to elevate one species above another. (TSG, vii)

The question for us is, what did the human species know about itself and the world before it had language? It is difficult to believe the species only became aware of itself and its environment when language made an appearance. There is no doubt having language makes it possible for the species to have the form of life it does. However in its earlier stages, before language, the human species had to have sufficient knowledge about itself and the surrounding world which was certain. Otherwise how could the species have survived and continued its development?

If animals are aware of things with some degree of certainty, then the human species should likewise have had this sense of awareness in their prelinguistic past. According to Wittgenstein, to have or acquire knowledge of the things one experiences, presupposes the ability to form concepts of the data being received. Is it not possible for animals to form concepts of the data with which they are concerned? Without a doubt some members of the animal kingdom react, and are attracted to, many of the same things which attract the human species.

We don't expect them to know things like "holy water", but do they have something similar to the concept of water? Concept formation, as was said earlier, comes about when the word standing for the sensation is being used. This scenario should apply to anything, not necessarily a word, which is being used for a purpose. Animals do many things repeatedly towards, it seems, a preconceived end. Not all foods attract them in the same manner, some appear more desirable, indicating a preference. It must be assumed animals continually attracted to some particular object are responding to a specific stimulant which is being sensed. Differences are being recognized, there is awareness. Finding something desirable, being continually attracted to a particular food, would presuppose having the concept of the thing being experienced. This is what we are looking for, awareness in species other than the human. It is difficult to imagine that

a species, any species, which went through an evolutionary process spanning millions of years, did so mechanically, unable to reason or understand.

Wittgenstein on the other hand would say that without language there could be no awareness. From our examples so far, we have tried to counter this and show, that if the animals could survive and quite successfully, the human species with its unique characteristics should have been that much more able. We have to remember, during this long period, the hominids were not the dominant species as they eventually turned out to be. They had to be aware of what was happening around them like all the other animals, in order to survive as a species.

There appears to be agreement in most scientific circles on the theory that language appeared quite late in the evolutionary development of the human species. The cognitive abilities of the species would have had to be fairly well developed to pave the way for the qualitative leap of language. Before we look at the cognitive processes of other species to determine what kind of prelinguistic structure might possibly be in place to receive language, we will first turn to some other areas of interest.

COLOUR PERCEPTION

Besides animal studies there is research being done with the human species in the area of perception. The particular study which will be reviewed has to with "language-cognition". This study has "attempted to relate linguistic differences to specific non-linguistic behaviours which could serve as an independent measure of perception or thought". (SCSN, 338) "The major group of psychological studies which have succeeded in showing a relationship between language and cognition are those which have used colour as the non-linguistic domain, memory as the cognitive variable, and semantic aspects of language as the linguistic variable". (SCSN, 338)

One such study conducted by Heider and Oliver falls into this category of colour perception. The article, "The Structure of the Colour Space in Naming and Memory for Two Languages" concerns itself with two distinct processes. First, "the non-verbal task of colour matching from memory while the other was a verbal task of colour naming". (SCSN, 337) The purpose of this experiment was to test the "Whorfian hypothesis",

> that reality is perceived and understood differently in different linguistic communities, and that these differences are caused in some sense, by language - particularly by the structure (organization, classification) laid upon reality by the language. (SCSN, 337)

Because of language Whorf thought there is a tendency on our part to "think of time, space and colour differently". He believed language more or less forces us to "perceive certain things and disregard others". "Language forces its speakers to make particular distinctions that might not be made in a different language." (FMS, 56) What Heider and Oliver were out to test was an "operational claim derived from the Whorfian position, a claim that verbal colour coding acts on memory imagery such that the structure of colours in memory comes to resemble the structure of colour names in a given language". (SCSN, 338) Their "question was whether the verbal code would interact with the visual to influence the nature of memory errors." (SCSN, 339) The following discussion will make clear our particular interest in this article.

The subjects in this experiment were two groups of 40 individuals, each group chosen from one of two distinct cultures, American and New Guinea Dani. Oliver and Heider chose cultural groups which had languages noticably different "in the number of basic colour terms", and "could be expected to divide the colour solid in radically different ways". (SCSN, 340) The Dani, "stone age agricultural people", having "only two colour terms", were the perfect contrast to the Americans with their large colour vocabulary. The two colour terms of the Dani were "mili" and "mola". Mili "included both dark and cold colours"; mola "light and warm colours". All the Dani

subjects in this study used only these words. The materials used were an array of coloured chips, the naming and memory "procedures" and chips were the same for both cultural groups. (SCSN, 343)

Both groups had to name selected individual coloured chips. The Dani being restricted to their two colour terms used them exclusively. The Americans having a large colour vocabulary gave a definite name to each chip. In the area of memory both groups were shown a chip for 5 seconds against a white background, it was then removed from view. There was a 30 second wait, then the complete array of chips were presented, and the test subject had to select the chip he had seen from this array.

In the area of memory both groups made errors in selection, however, the study suggested,

> Not proven, but certainly suggested by the visual
> shape of the scaling configurations, was the
> further finding that the Dani and American colour
> memory structures were quite similar to each other,
> although the naming structures were not.
> (SCSN, 350)

There was a higher rate of selection errors made by the Dani as compared to the Americans. This, it is assumed, was due to the cultural differences between both groups.

> Dani life contains neither school, work, nor inter-
> personal relations which appear to produce
> overloads of information; thus Dani appear to have

neither need for, practice with, nor any explicit
training in the use of memory control processes.
(SCSN, 351)

What this suggests, is that the colour memory structure of
both groups are similar in spite of errors made, and that
language has no bearing on memory.

An interaction between culture and the type of
memory errors which occurred might have
demonstrated a specific effect of language on
memory; a simple difference between cultures in the
direction of Dani memory inferior to American does
not constitute such a demonstration. (SCSN, 351)

although there are linguistic variables which
correlate with memory accuracy under certain
conditions, the nature of colour memory images
themselves and the way in which they structure the
colour space in memory appear little influenced by
language. (SCSN, 351)

Although the study was not structured to show that both groups
had similar colour memories, the results suggested this was
the case.

This study is interesting because it is in the area of colour
and perception which was of concern to Wittgenstein. The
Dani, for all essential purposes, did not have a colour
vocabulary. They differentiated colour as either dark or
cold; warm or light. The memory part of the experiment
indicated they did recognize solid colours and their shades
much in the same way we do with our more complex colour
terminology. Not having an extensive colour vocabulary did
not seem to be a barrier to the recognition or appreciation of

what is colour. This manner of organizing or cataloguing colour excites the curiosity. Looking at the various colours which exist in nature, the Dani would have to decide under which colour term, mili or mola, the particular colour falls. They would have to discriminate between the various shades and remember them with some degree of accuracy for all practical purposes. Upon seeing a colour they would have to make a mental mark, give themselves a subjective ostensive definition of the colour, if it is to be put into memory. The colour would then act as a sample to which similar colours could be matched. This leads us to say the Dani appear to have something similar to the concept of colour comparable to the Americans.

Concept formation for a technologically advanced society seems to be an integral component in organizing things. For a culture like the Dani or other species are concepts always necessary? Names are required for things if they are to play an important role in our form of life. They make communication about the object so named possible. The Dani would have the concept of what falls under their two colour terms but nothing else. They would not know that this particular colour is red. However, from the experiment it is obvious they can discriminate between colours recognizing that the colour red is different from some other. The Dani as the study shows, have the same capacity for perceiving colour, even though they lack the same concepts considered necessary

for this act of discrimination. It seems everything depends on how important things become. Evidently individual colours for the Dani are not significant otherwise they would have developed a colour vocabulary to suit. The Inuit of the northern latitudes have a wide vocabulary depicting snow, a thorough knowledge of this element appears to have survival value.

Imagine if our culture had a two word terminology for something like trees or wood products; grass or cereal grain products. Suppose our forest lumber products had only two words; softwood and hardwood, as they are now classified, and words such as oak, spruce, etc. did not exist. Our culture would have the same problems which are experienced by the Dani. Would we not be in a position to discriminate the various wood species? If the Dani can sort out the various colours and their shades, we should likewise be able to discriminate between the various wood species.

As for the argument that language had to first be in place, Oliver and Heider claim the reverse could be true.

> Correspondence between the structure of colour naming and the structure of memory errors in a single language would not demonstrate that the naming structure was in any sense prior to the memory - in fact from such evidence, an argument for the reverse relation could equally be made. (SCSN, 339)

The colour experiment has other implications, such as for the method of learning by ostension. Having only two colour terms the Dani would find it impossible to verbally differentiate the various possible shades of colour found naturally. If some specific colour combination concerned them, would they not have to indicate behaviourally, let us say by pointing out the item of their concern? Not having an extensive colour vocabulary, the Dani could learn much about colour, or settle differences based on colour, ostensively. Wittgenstein differed as to the value of ostensive definition as a learning tool. It is apparent he placed all his faith in learning on language. This mode of thought does seem reasonable because of the dependence on language by the human species. For an evolutionist, who believes not only the species but everything connected with the species evolved through many stages, the conclusion has to be otherwise.

The study also tested the participants abilities in two related areas, memory and correctness. The Dani, not having a concept of colour comparable to the Americans, were still able to perform the exercise with the same accuracy. Wittgenstein did say, the concept was necessary in order to discriminate between colours. More will be said on the concept later. Wittgenstein also leads us to believe, that language had to first be in place before knowledge of any kind was possible. Oliver and Heider claimed the reverse is equally possible, that the cognitive powers of the species, in

this case memory, might have had to be in place prior to the development of a colour vocabulary. This would not only apply to colour but to everything else.

ANIMALS AND MORALITY

Wittgenstein wanted us to work from the outside towards the inside. Sociobiologists, on the other hand, would say it might conceivably be the case we should start from the inside and work our way towards the out. There is much work being done to date to show the similarities in moral behaviour between the rest of the animal kingdom and ourselves. Particularly so with the chimpanzee. If this can be brought off, and the chances are more than just good, it would be a clear indication showing morality to be more than something unique to the human species.

> If indeed we do have an innate predisposition to work within and help our fellow humans, and if this was truly brought about by selection demands, then we might reasonably expect to find something akin to moral behaviours in our closest relatives, the higher primates. (TDS, 227)

What we are looking for in the animals is awareness. Are they acting because they are consciously aware of things? Acts which are ethical in nature (individual acts not part of a code) would be a sign of awareness. We do not expect them to be moral agents but ethical, yes, as Clark explains,

> Beasts, let us say, are ethical: that is, they
> respond to aspects of a situation and to features
> of their kindred, that a good man also would
> respect.   But they are not moral: for they do not,
> as far as we can see, have any occasion to moralize
> about themselves or to contruct intellectual
> systems to accommodate their immediate responses.
> (TNTB, 107)

Behaving out the Principle of Utility, or the Categorical
Imperative, should not be looked for when we study the
animals.   Neither should we look for behaviour of a
spectacular nature, because acts of this kind will not be
found.   Rather it is from their normal behaviour, what they do
on a daily basis, which will be revealing.   Being ethical is
looking after one's young, the sharing of food within the
social group, caring for the aged and a host of activities
which are of a similar nature.   Ruse gives us an example of a
group of chimps lounging around on a hot day.   There are two
young mothers with one old "mama" lying asleep between them.
Two children are playing and eventually a fight, screaming and
hair pulling breaks out between them.   One of the young
mothers wakes up the older mama and gestures in the direction
of the "quarreling children".

> As soon as mama takes one threatening step forward,
> waves her arm in the air, barks loudly, the
> children stop quarreling.   Mama then lies down
> again and continues her siesta.   (TDS, 228)

Ruse says the old girl's actions should not be taken lightly.
Conflict amongst the young often generates into conflict
between "adults".

> Mama has brought benefits to all. If this is not
> to act as a moral force or, let me say cautiously,
> a proto moral force, I do not know what is.
> Blessed are the peacemakers: for they shall be
> called the children of God. (TDS, 228)

If morality has a "biological base" and is not just a "cultural invention" it should be evident in the higher "primates". If a cultural invention "then there would be no reason to find it present in our ape relatives". (TDS, 227)

> The sociobiologist can admit that particular moral
> judgments are immediately derivable or supportable
> from a variety of different sources, culture,
> religion, even moral theory. Where biology comes
> in is to explain the nature of those sources. The
> particular judgment may be derivable from the
> theory; however the theory itself is supported, not
> by some wider or more general theory, but by
> certain facts of human biology. In short, at the
> most ultimate level, support becomes causal rather
> than rational. This by no means entails that
> morality becomes worthless or meaningless, of
> course, but only that moral values are ultimately
> relativized to the facts of human nature. But
> relative values are still values. (EMML, 101)

There is no doubt that animals do things which we would consider immoral. It is also true they do and continue to do things which are ethical. Having a biological base to morality does not guarantee one will always act ethically, it only gives us the necessary dispositions with which to make ethical acts possible. Slack claims animals are moral agents, they are able to "distinguish right and wrong, have a choice among alternative actions, intend specific consequences, and remember those intentions as their own". (AMA, 9)

What Slack has to say is reasonable for all creatures with a consciousness. The only disagreement for us in what he says is that animals can distinguish between right and wrong. In their natural state animals do things which are acceptable to their group or what is in their own best interest. Actions not acceptable to the group are discouraged; if not corrected the individual is excluded to live on the fringe, or forced to completely leave the group. In nature the idea of right and wrong does not seem to enter the picture. Right and wrong as a concept is something peculiar to the human species. Animals are expected to act responsibly within their own social group and at best within their species. It does not mean they are not tolerant of others, because the idea of live and let live even among the carnivores, seems to be the case. Animals just do not bother each other indiscriminately under normal conditions.

> Consider the well known example of submission displays and mercy among dogs. For example, in a dog fight, one antagonist gains a clear advantage, and the loser rolls on her back in submission. The victor is in a position to seriously injure the loser, but stops fighting instead. (R.D. Lawrence describes similar behaviour in wolves). (AMA, 9)

"I claim that we should admit that the victor stopped fighting for ethical reasons: she felt it would be wrong to continue the attack on her foe. In other words she made a moral decision. She conceptualized her opponent as submitting, and applied the operative maxim that she ought to stop her attack." "The cognitive requirements for the mercy response

are not simple." (AMA, 9) The stopping of the attack is typical of what animals do. They simply do not inflict punishment on members of their own species beyond what is necessary to correct unacceptable behaviour. The terms good or bad do not seem applicable to animal behaviour, though it can be said their acts could have good or bad consequences. Animals are capable of good or bad acts in the same manner as the human species, but unlike the human species they are forever innocent. Right and wrong presupposes moral agency, and as was said earlier, animals only act ethically. It is common to see birds get together to chase away an intruder, wolves being fiercely loyal to the pack, plus a host of other actions which are similar in nature. Although animals are capable of much, there are things which will forever be beyond them as Leslie White explains,

> It is impossible for a dog, horse, bird or even ape, to have any understanding of the meaning of the cross to a Christian, or of the fact that black is the colour of mourning. No chimpanzee or laboratory rat can appreciate the difference between Holy Water and distilled water or grasp the meaning of Tuesday, 3, or sin. No animal save man can tell a cousin from an uncle, or a cross cousin from a parallel cousin. Only man can commit the crime of incest or adultery, only he can remember the Sabbath and keep it Holy. It is not as we well know, that the lower animals can do these things but to a lesser degree than ourselves; they cannot perform these acts of appreciation and distinction at all. (TSC, 23, 24)

In spite of this there are many things which animals can do and quite successfully. No doubt a list can be compiled to show the abilities and skills which animals have and man does

not. We are not really interested in what they cannot do because as Slack has said, the above would fall into only the 0.8% range of differences in cognitive abilities. Animals have a form of life suitable to their place in the biosphere. There is no need for them to make demands on their intellect which go beyond what is required for their form of life. In spite of this, as we will shortly see, animals are capable of much more than what they normally do on a daily basis.

There have been advances made in the study of animal behaviour and psychology since White first published his book, and incest taboos is one area which has been under scrutiny. "Could there be a biological basis, a cause for the general human avoidance of incest?" (EMML, 102) Murphy answers this with a quote from Wilson.

> It is easy to see how, through natural selection over many generations, those having a preference against incest would far outnumber those not having this preference. Thus the actual causal basis for a preference against incest would be biological; and the cultural taboo might be no more than an epiphenomenon, a covering rationale (or perhaps additional reinforcer) developed after the fact. (EMML, 102)

Murphy goes on to say, if this analysis does indeed have some basis for truth, it should be manifest in "non-human animals". Thus J.L. Hoogland's article "Prairie Dogs Avoid Extreme Inbreeding" reinforces Wilson because such "a tendency is indeed present". Does this indicate there is a biological base for the avoidance of incest?

> We do now have a strong hypothesis, an hypothesis
> made yet more plausible when we recollect that the
> incest barrier, undoubtedly of biological value,
> can be backed by a forceful sense of right and
> wrong. It is not just that you do not want to
> sleep with your sister/ brother, but that you feel
> you should not. (TDS, 235)

Morality is something which counteracts our "desires and inclinations. It enables us to form communities and states" and in the case of animals, social groups. It protects us from each other, and enables us to carry on our affairs in a reasonable manner, in a secure environment. The road it takes is by filling us with responsibility. In this manner it compels us to act as if morality is a given. As Ruse says "we may have a choice about whether to do right and wrong, but we have no choice about right or wrong in themselves". (TDS, 253)

> If morality did not have this air of externality or
> objectivity, it would not be morality and (from a
> biological perspective) would fail to do what it is
> intended to do. (TDS, 253)

Ruse says, "morality is a collective illusion forced on us by our genes". "What we have learned this far, especially in the past ten or fifteen years, is precisely what we would expect were human moral feelings the product of the Darwinian process of natural selection". (TDS, 229) It cannot be said that everything we do is biologically determined. We do select what will be included or discarded in our particular culture. All biology does is make all this possible. Similarly with the animals, they can act or not act as they choose but the

capacity to act ethically is determined biologically. By studying the animals it might be possible to throw some light on what we were like because, "we ourselves are no more than transformed apes". (TDS, 274) To have a better understanding of ourselves we must study the evolutionary process because,

> Darwinism, brought literally and fully into philosophy, marks a significant step in the forward advance of understanding. Once we grasp the full import of the epigenetic rules, innate constraints rooted in the genes and put in place by natural selection, powerful light is thrown on human knowledge and morality. (TDS, 273)

An evolutionist has a different outlook on many things which have to do with almost anything in the world. As an example, this perspective would influence the kind of philosophy to which one would lean. Evolutionists are empericists, and of the empiricists it is probably the materialists who accept Darwinism without reservation. Their epistemology is coloured by this theory. There does not seem to be any possibility for anyone so inclined to accept the foundations on which the no private language argument is based. The empiricists argue that knowledge is derived from "stimuli" which excite the senses. Wittgenstein on the other hand takes the opposite track. He claims without language it would be impossible to sort out our feelings about the things which are sensed.

Wittgenstein does not deny we sense a large variety of things, but all this would be disorganized and meaningless without language. Therefore, in our earlier stages of development it

would not have been possible to know things because language would still not have made an appearance, and thus, the concept could not have existed. Without concepts the sorting out of all things is impossible. Following Wittgenstein's line of reasoning we are led to believe language had to first be in place before awareness of any kind was possible. Presumably, not language as we now know, but at least language based on something like animal behaviour. An evolutionist would be hard pressed to accept even this because we do think our cognitive abilities had to be in place before language. If our cognitive abilities were not in place, to what would we be giving sounds?

NEURAL PROCESSES

Getting back to the animals Wittgenstein said, "If a lion could talk we could not understand him". It is said "human thoughts and words are closely linked" and in fact "they are essentially identical". (TQAA, 97) The same could be said of Wittgenstein's lion, its thoughts and words would be linked. The lion's form of life, it seems, would preclude our understanding them. Attitudes of this nature towards animals and their abilities were once prevalent. "In this view, should other species have feelings, hopes, plans, or concepts of any sort - even very simple ones - they would take a form so different from our own thoughts that we could not recognize them." (TQAA, 98)

> This argument assumes that human mental experiences
> are so closely bound up with our species-specific
> neurophysiological mechanisms that we are not
> capable of understanding any mental, as distinct
> from neurophysio logical, processes in other
> animals, even if such exist. (TQAA, 98)

"Modes of thinking" once predominant change as research moves

along.

> But physiologists have found that more and more of
> the basic properties and functions of neurons and
> nervous systems are remarkably similar in virtually
> all multicellular animals. This is consistent with
> the assumption of evolutionary continuity, leading
> us to use animal surrogates in studying the
> functioning of the nervous system, even with
> reference to problems of human brain function.
> (TQAA, 98)

Suppose it were possible for someone to "observe my neural

processes" when I am busy thinking, "would my thoughts be less

hidden than if I confess them to you"? What should one

believe, the "confession" or the neural processes? "Suppose

one's thoughts are obscure, elusive (and allusive), will their

accompanying neutral correlates be less obscure and elusive"?

Suppose one were to converse with oneself "in an unknown

language", how would we understand the neural correlates, "in

English"? (IAI, 290)

> If my sincerity is in question, must the neural
> ongoings reveal my duplicity or truthfulness? (The
> brain cannot lie, one might want to say, it is
> beyond sincerity and insincerity!) (IAI, 290)

What Hacker is driving at, is that with neural processes we

are again looking for something on the inside, "that which in

our metaphor is the inside". Even if it was possible to observe the neural process accompanying a thought, they would not tell us anything. This is where the "materialist" is confused, he thinks there is an "inner" and an "outer", the "concealed and the revealed", "of what lies behind the externalities of behaviour". The materialist "displays a penchant for grey glutinous as opposed to ethereal stuff". (IAI, 290-1)

Hacker is probably right, but only up to a point. There is no doubt, observing the actions of neurons or the nervous system will not reveal what thoughts one is having. It seems the best we can do, is to know the individual under observation is being occupied with some mental activity. Hacker is taking this distinction of "inner" and "outer" to an extreme. Wittgenstein claimed, what we think is on the inside is "not a something, but not a nothing either". Pears tells us "Wittgenstein had different reasons for defending the independence of the philosophical investigation of mind from neurophysiology. He was acutely aware how easy it is to fail to see that the two disciplines ask, and try to answer completely different questions". (FP, 511) Pears quoting Wittgenstein, "And now it looks as if we had denied mental processes. And naturally we don't want to deny them." (FP, 512)

> Wittgenstein turns his face against neurology not
> because speakers of a language might have sawdust

in their heads, but because, from the point of view of a philosopher with his restricted conception of the subject, it would not matter what they had in their heads. (FP, 513)

It would appear, by distancing himself in this manner he is attempting to "maintain the purity of philosophy as he conceives it". (FP, 515) Purity is not something which Wittgenstein would be consciously seeking. He was, after almost a lifetime of reflection and self criticism, convinced his approach was sound and correct. Always maintaining, do not accept what I have to say, but for your own satisfaction, look and see.

The study of neurology is not a search to lay bare one's thoughts. In spite of the advances made in the area, both present and those to be in the future, the mind will always be closed in the manner to which Hacker alludes. It is not possible to read the mind like a disk to discover what is on the inside. Wittgenstein uses language towards this end, it lays bare and organizes the inner. Wittgenstein maintains without language there would not be much on the inside to discover. This is evident from his discussion and ideas on the ego.

What we have attempted to do up to this point in our discussion, in the preceding chapters and this one, is to make clear that we think there is something on the inside. Language is simply the means one particular species uses to

lay bare what is on the inside. We maintain contrary to
Wittgenstein, that there is something like a thinking subject
reflecting on phenomena as they appear at its portals. Each
and every individual member of any species has its own
particular thinking subject, each similar in most respects
under normal conditions, experiencing the same phenomena in
more or less the same manner. Therefore, because we are all
similar in nature, its is possible to understand and arrive at
a concensus as to the phenomena being individually
experienced. The next chapter, a study of chimp behaviour,
will attempt to make clear what is possible in the area of
awareness without language, and further our argument as to the
existence of cognizant ego.

CHIMPANZEE BEHAVIOUR

At the present time there is much activity in the study of
animal behaviour. Studies in this area, conducted on
individuals or groups, often take many years before anything
of concrete value is accumulated. This is ever so evident
when the studies are not of controlled situations but take
place in a natural setting. In spite of the difficulties,
information is being gathered, and a story on animal behaviour
is emerging. What will be looked for in the animals is
awareness without language. Animals which are "consciously
aware of the world around them and can think about objects and
events". (AT, 205) "We are intrigued with what it is that

animals can do, as opposed to what they typically do". (EA, 208)

Much of the material which will be discussed has been examined critically, and will continue to be so for many years to come. The conclusions reached by the various investigators should not be looked at as being final. Even though we are animals, the human species did evolve in a way which is particularly unique, as can be said about other animals species within the kingdom. As an example of uniqueness we could mention; language, opposable digits, upright posture, among others. This means that even if behaviours were found in animals, which could be applied to the human species, this might not necessarily be the case. It would be nice to find animals do not just act on instinct, but are able to perform in a manner which exhibits intelligence. If intelligence is part of the equation it would mean things can be accomplished without language.

There has been a substantial amount of literature on primate behaviour published in recent years. Among those interested in this subject is a group of scientists at the "Yerkes Regional Primate Research Centre" who, according to many, have made "noteworthy and impressive" contributions in this area. (TDS, 136) As with all studies of this nature questions are raised and criticisms registered as to whether more is read from the results than what is justified. The articles we will

be looking at have both supporters and detractors. Researchers at Yerkes are interested in the "language acquisition capacity of apes".

There are a number of recent studies produced by the group at Yerkes which span a decade and are relevant to our inquiry. The earlier studies look at the "common chimpanzee (Pan troglodytes), and the later "pygmy chimpanzees (Pan paniscus). (SCC, 211) The areas of interest for us have to do with memory, understanding, goals in mind, observations, cooperation, coordination and discrimination. Language itself is not our main interest, rather we are concerned with the cognitive abilities of the chimps. However, as the chimps go about their assigned tasks of learning how to communicate, they do many things which make obvious their powers of perception and discrimination.

Our review of the literature will start with the earlier studies beginning in the late 70's. These studies use the common chimp as their subject material. According to the researchers, the common chimps required a great deal more attention and training than did the pygmy chimps. "The main medium of communication used with all of the animals is a visual symbol system. The system consists of geometric symbols that brighten when touched. This visual energy change is treated as the behavioural equivalent of uttering a word."

(SCC, 215) The instrument is a computer to which a number of keyboards are linked.

> The symbols on the board can be activated or deactivated at will by the experimentor. As the keys are activated they become backlighted. This brightly lighted board is very colourful and inherently appealing to both the chimpanzees and the intellectually disadvantaged alinguistic children...They are attracted to the colour, to the change of the lights as keys are activated, and to the facsimiles of the geometric patterns on the surface of the keys as they appear on the projectors above the keyboard as the keys are used.
>
> Now, by having duplicates of word keys on the boards and differentially activating them, it is possible to move the keys about, even between trials, so that the subject must attend to the lexigram and not the location of the key. This is important because primates are often predisposed to use location as a cue.
>
> As the apes become increasingly sophisticated, location tends to fall out of their own preference, and the begin to concentrate more on the new lexigrams as they are introduced to be learned.
> (EA, 211)

The result of all this was the ability of the chimpanzees working together to ask each other for certain foods relative to the keys pressed, and having one or the other hand over the selected foods. "The chimpanzee that had the keyboard would ask for any of the various foods on the tray, and the chimpanzee that had the food tray picked up a piece of it and put it through the window right into its cohort's mouth." (EA, 215)

One further example shows how innovative and observant the chimps can be if necessary.

A very close friendship has developed between these
two chimpanzees during the course of training, and
many of the sharing behaviours that they have
learned have now generalized beyond the food
request task. For example, on one particular day
a coin-operated vending machine had been loaded
with small peanut butter and jelly sandwiches. The
experimentor then dropped 2 coins down a long
tube. Sherman picked up a magnet (which was tied
to a string) and dropped it down the tube and
fished with it to get the money. When he heard
theclick, click, as the money attached to the
magnet he pulled it out, and removed the 2 pieces
of money from the magnet. Then he gave one piece
of money to Austin, and kept one for himself. They
both went over to the vending machine and Sherman
put in his money, got a peanut butter and jelly
sandwich, which he gave to Austin. Austin took his
money, put it in the machine, got his peanut butter
and jelly sandwich, and gave it to Sherman. Thus
money, food, and turns were each shared. (EA, 215)

The vending machine illustration seems particularly important
because

1)   it showed the extent of their power of observation. They
     had to remember and follow a sequence of steps in order
     to obtain a desired item.

2)   they had to manipulate a tool, the magnet on a string,
     inserting it into a tube to retrieve coins.

3)   they had to have an end in mind to make all their actions
     worthwhile.

4)   they had to exhibit a high degree of coordination in
     acting out the steps required to accomplish the task.

It is encouraging to note the chimps do show initiative, using their acquired skills to interact spontaneously. Pressing keys randomly would not be productive, the chimps had to have a definite goal in mind. When they asked for food stuffs it was in order of preference, once these were exhausted the food was not asked for again. This indicates they were aware of what was happening around them. Having a preference is similar to having a concept of what it is that is appealing.

A preference is an indication of one having the ability to make a choice from among alternatives. Choosing one thing over another is being aware that there is something which is more pleasing to the senses. The chimps would have to make a mental mark of the object which they find pleasurable and store it in memory to await recall. The important thing here is the subjective ostensive definition, the mental mark which is given to the object. Once the object is entered into memory, it then functions as a sample, the very kind of a sample about which Wittgenstein was talking.

The use of the symbol labelled keys is another example of mental dexterity. The keys which the chimps manipulated to obtain the food stuffs were moved around to make them look for the required key, rather than go to a specific location. What this does is make them think in order to solve a problem. The keys, they soon learned, were the means by which the desired items could be obtained. Key selection is important because

it has to do with being able to recognize the symbol printed on the key. As mentioned above the symbol has to be committed to memory, and imprinting it in memory is making a mental mark of the symbol. Again we can say, the symbol in memory functions as a sample to which other symbols can be matched. The keys, it could be said, function as a tool, by which a desired item is obtained.

In the language and tool use study, the chimps accomplished many things which were striking. Narrowing down their various achievements, there are two areas of interest which should pretty well summarize what this study was all about. This has to do with cooperation and tool use. The keyboard became the means for communication between the chimps; it was the intermediary, the connecting link between themselves and the tools which they learned to use. The study was set up so that once they learned how to use the tools to retrieve food stuffs they then, each in turn, were separated from the tools. One became in turn the custodian of the tools and the other, separated by a glass barrier, became in turn the "requester" of the tools. Food was placed in different containers in plain view of the requester. This requester then had to ask via the keyboard for a specific tool from the other, which he then manipulated to get at the food. Slowly their success rate increased to a point of "97% correct" in asking for the tool, using the activated keyboard. With a deactivated keyboard their "performance" fell to "10% correct". "Clearly,

the keyboard symbols served a critical role in the transfer of information regarding the necessary tool". (LTC, 550) In spite of their failures the authors conclude, because of the "intensive training" of the chimps, "there have emerged spontaneous sharing of resources between animals, spontaneous requests for food and objects of interest, and spontaneous cooperation with such requests". (LTC, 553) This interaction was not evident "prior to training". "Now they regularly employ prelinguistic gestures of this sort quite spontaneously in their interactions with one another." (LTC, 553)

> This observation suggests that "language instruction" is too simple a term to account for the learning; for it is not merely proficient and accurate symbol-use that the animals seem to have acquired. Rather, a concept of role-reversal and cooperative communicative behaviour directed toward a common goal seems to be emerging. The relationships among internal representation (symbolization of objects), tool-use, and inter-animal communication observed in this study suggest that the coordinated emergence of these skills in human evolution may not have been accidental. Instead, as Holloway (1969) has suggested, there may have been a set of interlinked abilities functioning in concert to promote a greater and greater symbolizing capacity. (LTC, 553)

There were six different tools which the chimps had to learn to use. To complicate the game, they had to learn how to cooperate to request the proper tool. This suggests a heavy reliance on memory because the ability to recognize and store the tool in memory is a prerequisite to playing the game. Once again a mental mark, a subjective ostensive definition is required. Without these series of steps not much can be

accomplished. What the animals acquire is something similar to a concept of the things they use. Wittgenstein said concept formation came through the use of a word. Could not animals form concepts in this manner? Instead of using words would they not use and imprint smells, sounds, shapes, behaviours, and whatever else attracts them?

The literature on the chimps just reviewed was concerned with the cognitive abilities of the common chimp. However, as mentioned, more recent studies have been made and are underway concerning the pygmy chimp. The differences between the two related groups are significant. "In contrast to the common chimpanzees (Pan troglodytes) using the same communicative system, the pygmy chimpanzees did not need explicit training in order to form referential symbol - object associations." (SCC, 211) They were, on the strength of their perceptual capacity, by "observing others", able to "use these symbols in daily communication". This is not the end of it, the pygmy chimpanzees began to "comprehend spoken English words and can readily identify lexigrams upon hearing the spoken words". (SCC, 211) Common chimps, on the other hand, "who received similar exposure to spoken English were unable to do so". (SCC, 211)

> The older pygmy chimpanzee has begun to ask for requests of the form, agent - verb - recipient, in which he is neither the agent or the recipient. By contrast, similarly aged common chimpanzees limited their requests to simple verbs, in which the agent was always presumed to be the addressee and the

chimpanzee itself was always the recipient, thus they had no need to indicate a specific agent or recipient. (SCC, 211)

"These results suggest that these pygmy chimpanzees exhibit symbolic and auditory perceptual skills that are distinctly different from those of common chimpanzees." (SCC, 211)

Once "taught the communicative skills of requesting, labelling, and comprehending, indicative referential symbol usage can then appear without further training". (SCC, 211) Thus, "once they are given such training, their symbol usage begins to take on an increasing representational character until finally they are able to use symbols to convey intended actions". (SCC, 213)

The pygmy chimpanzee study appeared in 1986, and was primarily directed towards "language learning". "Even if the apes were unable to speak, an ability to comprehend language would be the cognitive equivalent of having acquired language". (SCC, 214)

> This study describes the first instance which a non-human species has acquired symbols without specific training toward that goal. It also presents the first documented account of the comprehension of specific English words by apes. It is important to note that the present project was not undertaken with the intent of producing the findings described later. The findings were serendipitous. What follows is not an experiment but rather a description of events that lead us to the conclusion that Kanzi, one of the young ape subjects of this study, was acquiring symbols spontaneously at 2 1/2 years of age. This

description is followed by a developmental account of this phenomenon across the subsequent 17 months. Kanzi's younger half-sister, Mulika, began to use symbols at 11 months of age, and her behavior is also described. In general, Mulika's data corroborate the basic findings with Kanzi. At the time of writing, Mulika's symbol usage is limited when contrasted with Kanzi. However, Mulika began using symbols at a much earlier age and is presently far ahead of where Kanzi was at a similar age. Important differences between Kanzi's and Mulika's language acquisition and that of two common chimpanzees, Sherman and Austin, who were taught language with the same visual-graphic symbol system, are also discussed.

Although it is not widely recognized, there are four great apes species. Of these four, only the pygmy chimpanzee (Pan paniscus) has not, prior to this report, been the subject of language acquisition studies. This is primarily attributable to the difficulty in obtaining these animals. They are rare, both in captivity and in the wild, and it is presently illegal to export them from their severely threatened native habitat in Zaire.

Their social-communicative repertoire differs from that of the other great apes in a number of important dimensions. Eye contact, gestures, and vocalizations are considerably more frequent and more elaborate in Pan paniscus than in other apes. Male-female ties appear to be exceptionally close and males, at least in captive groups, participate in infant care. Food sharing is a frequent behavior even between adults. By contrast, in the common chimpanzee the male-female ties are weak, the males do not participate in offspring care, and the majority of food sharing occurs only between mother-infant pairs. Because elaboration of the gestural, visual, and vocal domains of communication must have occurred in evolution prior to the emergence of speech proper, the more extensive development of these skills in the pygmy chimpanzee, in contrast to other apes, suggests that they might be better prepared to acquire language.

Cognitive studies of Pan paniscus also suggest that they are brighter than other apes. Yerkes raised a pygmy chimpanzee and a common chimpanzee together for several years, although at the time, the species difference was not recognized by

anatomists. Yerkes, however, noted numerous
physical and behavioral differences between the two
animals, Chim (Pan paniscus) and Panzee (Pan
troglodytes), and suspected that Chim was an
extraordinary animal. If the pygmy chimpanzee is
indeed a brighter species, this too would suggest a
greater predisposition toward language
acquisition. This article describes the initial
results of the first longitudinal attempt to
investigate the language acquisition capacity of a
member of the species Pan paniscus and to contrast
it with that of members of Pan troglodytes. (SCC,
214)

There is much detail in the article on the pygmy chimps which

will not be reviewed. For our purposes most of what is

necessary has now been mentioned. However, to close this part

of the discussion, a few more comments will be necessary. The

two pygmy chimps, the actors in this drama, "Kanzi" and

"Malika", initially started with different keyboards. Kanzi,

the older, started using a keyboard with "8 symbols" which

eventually, as his training progressed, expanded to "256

symbols". Mulika, on the other hand "was presented with a

complex keyboard from the onset of symbol acquisition". (SCC,

215) "Speech synthesizers" were attached "to the keyboard"

when it was observed the pygmy chimps were responding to or

comprehending "spoken words". (SCC, 230) Comparing the pygmy

chimps to the other groups the researchers indicate,

> To the degree Kanzi and Mulika can comprehend even
> single words as communicative referential
> utterances, they are demonstrating a basis for
> language comprehension that was not available to
> Sherman, Austin, or Lana. Understanding that
> people use spoken words to stand for things, and
> understanding what many of these words are, gives
> Kanzi and Mulika a decided advantage when they
> encounter lexigrams being used as symbols. Instead

of having to learn what symbols are and how they
function communicatively, they have only to learn
to read the lexigrams or to pair them with spoken
words they already know. As Mulika's data
illustrates, this process can occur at a very early
age and can predate the fluent usage of the
symbols. (SCC, 230)

The research staff concludes, "The way pygmy chimpanzees
acquire graphic symbols appears to be fundamentally different
from the way in which common chimpanzees learn them". (SCC,
230) "The pygmy chimpanzee appears to possess a far greater
propensity for the acquisition of symbols than other apes."
However, when this article was published preparations were
underway to raise "infants of both species...side by side" to
determine the differences between the species in surroundings
which are the same for both. (SCC, 231)

In the case of the pygmy chimps, there was initially no
attempt to "teach" them to "respond to English commands, or to
utter single words to them. People spoke normally around them
at all times. Their ability to respond to specifics, which
they extracted from complex phrases, was completely unforeseen
when the study began". (SCC, 230) The chimps, in other
words, completely on their own, were sorting out the various
activities, making associations, recording things,
discriminating, strictly through their powers of perception.
In their own way they were trying to make sense out of what
was happening around them. The human species, in their

pre-linguistic past, must have been in the same position as the chimps.

Wittgenstein claimed thinking and understanding were not mental processes; they only became obvious through the medium of language. Animals such as the pygmy chimps, young children, not having language, must have a medium within which thinking and understanding take place. It must be assumed a species dependent on language has lost this prelinguistic medium. If not lost, then has it been made redundant by the advent of language? Remembering Wittgenstein's comments, "if we think by imagining signs or pictures I can give you no agent that thinks".

The detractors of the experiments by the Yerkes group claim, (C, 279)

1. The apes' "behaviour is communication, but is it symbolic communication"?

2. The apes have only "learned the instrumental functions of lexigrams in the experimental context".

3. Essentially, "this behaviour, which Skinner (1957) termed, manding, does not require knowledge of words or symbols at all".

4. Their "use of lexigrams appears to be more like the nonlinguistic gestural communication of young children than the full use of lexical items".

The conclusion to which they come is that from the results of the primate experiments language is beyond the capacity of the

animals.   It is something which is "species specific".
(C, 279)

> We see this research as providing another source of
> evidence that language is an expression of a
> capacity that is specific to humans; moreover, it
> suggests that part of this innate endowment
> includes the capacity to understand that things
> have names. (CSC, 279)

About all the apes can do is gesture, and this at the same

level of 9 to 16 month old children. (C, 286)

The Yerkes group replies to the criticism mentioned and say

Kanzi and Mulika can, (R, 288)

1.   "comprehend spoken English words;"

2.   "identify lexigram symbols when they hear these words;"

3.   "comprehend lexigram usage;"

4.   "use lexigrams when referents are absent and can if
     asked, lead someone to the referent;"

5.   "all these skills were acquired through observation,
     not conditioning".

The "symbol usage" of Kanzi and Mulika "is clearly represen-

tational   and   that   an   account   based   on   instrumental

conditioning principles cannot explain either their symbol

acquisition or their use". (R, 291)

In support of the Yerkes group, and in reply to the criticisms

Katherine Nelson claims that their argument rests primarily,

> Not on any actual evidence, but on their belief
> that no ape can name, because that is part of what
> it means to have (human) language. (RC, 295)

In essence the objection is, "Kanzi does not use words to name, 'and therefore it seems', does not have mental representations". (RC, 295) Naming things is important only if you have a "form of life" in which names play a part. Animals, it is obvious, do not. The important thing is, can they discriminate between the data which they sense? Apparently they do so, and quite well. It is quite remarkable that they do the things revealed in the studies. There appears to be a prelinguistic structure in place, but for the lack of a vocal speech apparatus language is out of reach. The thing is, they do react to language, they do recognize and discriminate the sounds of which language is composed. Through some medium peculiar to the chimps, thinking and understanding are taking place. Wittgenstein said,

> It is sometimes said that animals do not talk
> because they lack the mental capacity. And this
> means: they do not think, and that is why they do
> not talk. But - they simply do not talk. Or to
> put it better: they do not use language.
> (PI, 25)

Wittgenstein is not saying that animals do not lack the capacity to think, only to use language. Therefore, it is possible for thinking to be seated in structures other than language, except for the human species, if Wittgenstein's reasoning is accepted. PI, 25 is contradictory considering

all that Wittgenstein has had to say on the nature of thinking. Part of what it is to have thought processes would include memory and recognition, that is, giving oneself a mental mark, a kind of private ostensive definition of what is being experienced. Making sense of their environment, the chimps would require processes of this nature. The mechanism in which thinking and understanding are embedded must be similar for all species within the animal kingdom. All species have the same necessary faculties to enhance their chances of survival.

A study on "perception" and "visual acuity" in chimps found "the perceptual world of the chimpanzee to be equivalent to that of humans". (PVA, 31) "A 6.5 year old female chimpanzee learned to distinguish perfectly every letter of the alphabet in a matching- to-sample task with 26 letters as choice alternatives...The chimpanzee also readily learned to use letters as names of individual humans and chimpanzees." (PVA, 24) The conclusion arrived by the researcher from this study is quite strong. Before conclusions of this nature can be accepted we think more research is required. The Yerkes group would, it seems, be interesting to follow because their research is continuous, spanning many years, and the pygmy chimps appear to be something quite special.

There seems to be increasing interest in the speech-sound abilities of the primates. A group of researchers has issued

an article titled, "Acoustic Patterns Common to Human Communication and Communication Between Monkeys". In it they ask, do "non- human primates" possess "capacities which human beings use in exercising speech? In the past the search for the evolutional prerequisities necessary for using language was mainly concentrated on linguistic approaches. The linguistic approach has not yet succeeded in providing evidence that apes are able to apply grammatical rules in producing sequences of signs." (CBM, 87) They wonder if the methods used to date to coerce the apes in this direction were simply, "bizarre experiments (involving removal from natural habitat, control by members of other species, force feeding with a relentless diet of semiotic gobbledegook, insistence on an unnatural medium of expression, etc.) Or would experimental designs more appropriate to animals' needs and capabilities result in more competent findings?... Besides the linguist capabilities, there is another prerequisite for communicating by language, and that is the ability to produce, perceive and communicatively use the same structural components human speech consists of." (CBM, 87) "If components relevant to human speech are shown to influence the conspecifics succeeding behaviour in animals, too, they may be considered to be precursors of human speech as they have communicative significance in both human speech and animal communication". (CBM, 87-8)

From this study it has been shown that "the acoustic components found in the monkey's vocal repertoire to significantly influence the conspecific's succeeding behaviour are also present in human speech. In addition to having affective function - which is not taken into consideration here - they are phonetic units, or parts of them, grammatically and/or lexically relevant in many languages. The discussion of the uniqueness of human speech and approaches to analyse non-human intraspecific acoustic communication may profit from these results." (CBM, 91-2) "On the other hand, there is the first body of evidence accumulated for apes that documents and evaluates the entire corpus of symbol usage and comprehension and reveals that pygmy chimpanzee (Pan paniscus) need no explicit training in order to form referential sybmol - object associations, including the ability to request that (A) act on (B) when he was neither (A) nor (B). (Savage- Rumbaugh et al., 1986). Provided this could be considered to be a precursor of syntactic structure if not the basis itself for the occurrence of syntax, one prerequisite for executing language would be present in at least one recent non-human primate species". (CBM, 87) These researchers are referring to the Yerkes group and their recent work with the pygmy chimps.

The research being done presently by this group at "Georgia State University" was commented on by Holly Harris, in the Globe and Mail, April 6, 1991. Harris makes some remarks on

the intellectual capacity and dexterity of the chimps, and at the same time comments on their detractors. Harris quoting Roger Lewin in the article,

> Each time chimps produce something that resembles a rudimentary aspect of language, the critics move the goal posts a bit, he said. It doesn't look as if they'll be satisfied until they (the chimps) stand up and recite the National Anthem.

The researchers at Yerkes are trying to expose the inner life of the chimps by testing their intelligence. It is obvious that there is an inner life as their results have shown. We are not simply robots, so that when the batteries (in Wittgenstein's case, language) are inserted we start to perform. Once again, with this chapter as with the others, we have tried to establish a case for the concept of a thinking subject. One which can function effectively without language. The human species had to be much like the chimps at some stage in their development.

ANIMAL THINKING

Leaving the primates for a moment we will turn to studies of other animal species which are presently underway. Donald R. Griffin has written a book, Animal Thinking, which illustrates the cognitive capacities of a great many animal species. The objective he has in mind: "The aim of this book is to rekindle scientific interest in the conscious mental experiences of animals." (AT, 111) It is a study about

animals which are "consciously aware of the world around them and can think about objects and events". (AT, 205) In the book are numerous examples of actions which do not seem to be "automatic and unthinking". The animals which Griffin describes appear to act of their own "free will" towards predetermined goals of their own choice. "All animals capable of being in conscious states are able to perform free voluntary acts." (AT, 7)

In the many examples, Griffin goes through the whole spectrum, from the insects to the carnivores. He takes a material approach to "mental experiences", "behaviour and consciousness in both animals and men result entirely from events that occur in their central nervous system". Griffin "assumes" there "are no immaterial or supernatural processes involved". (AT, 8)

> Clearly a conscious organism must do more than merely react; it must think about something and usually it will have some feeling about that something. (AT, 8)

According to Griffin the scientific community takes a "deterministic" approach to animal consciousness. To think otherwise would concede to animals free will. There seems to be a reluctance on the part of many to look at animals as free thinking agents. For Griffin conscious awareness consists in, (AT, 37)

1) "versatile adaptability of behaviour to changing circumstances and challenges."

2) "when an animal behaves appropriately in a novel and perhaps surprising situation that requires specific actions not called for under ordinary circumstances."

3) "anticipation and intentional planning of an action with conscious awareness of its likely result."

It is to the animal's advantage to be consciously aware of its environment. An animal which can choose between "alternatives" has a better chance of surviving than one which reacts instinctively to things. As an example, animals spend a great deal of time searching for food, it is to their benefit "to change one's feeding tactics according to the available food and the problems of securing it." (AT, 52)

Some of the examples given by Griffin in his book should be looked at to show the variety of behaviour exhibited by the different animal species. To keep this brief only some of the examples given will be reviewed.

A species of bird in England found, by pecking through the "soft metal foil" tops of milk bottles new "sources of food" became available. This new type of behaviour soon spread, to the extent that a different covering had to be provided to discourage the birds. (AT, 67) Another bird, the "Clark nutcracker", in the fall buried "as many as 33,000 pine seeds" in caches of "two to five seeds". During the winter it would return finding nearly all the seeds it had hidden. Hypotheti-

cally, if the bird deposited five seeds in each cache it would have 6,600 storage sites to remember. "The quantitiative aspects of this behaviour are truly impressive, especially when we recall the changes in the natural environment between the time when the seeds are hidden and the wintery conditions when many of them are retrieved". (AT, 70)

To return to the primates, "Japanese macaques" were observed "washing potatoes, or separating grain from inedible material by throwing it into the water". (AT, 67) In this manner Griffin goes from species to species providing us with an array of behaviours which are extraordinary. Once again Griffin's book returns us to the notion of the private object, the thinking subject, and the subjective ostensive definition. Animals are continually, during the process of discriminating between objects and events, giving themselves a mental mark of the sense data being experienced. In contrast to the human species, animals once they leave the nest are pretty much on their own. Learning, being able to sort out the various data in the environment is not a one time event. Rather, it is a process which goes on as long as the animal is alive. Therefore, the animal must have a mechanism which is fully cognizant. Whatever an animal first experiences must thereafter act as a sample to which similar experiences can be matched. Memory and correctness are a prerequisite to an enterprise of this nature.

As we have already explained throughout this paper, Wittgenstein is questioning the reliability of the cognitive faculty of a species, any species, which is not a language user. This section on animal thinking, is an interesting example of the intellectual versatility of many members within the animal kingdom. It is very difficult at times to determine the intellectual capacity of an animal. In many cases we have to wait and watch patiently for them to act, and from their behaviour make judgements which might not be accurate. Since animals can't talk and mental processes are inaccessible it is difficult to determine the exact stimulant which prompts a behaviour. In spite of the drawbacks we do find that animals have a complex inner life, not as once thought based on instinct, but similar to the one motivating the human species. Therefore we have to conclude language is not really an indicator of the cognitive capacity of a species.

CONCEPT FORMATION

R.J. Bogdan has published an interesting article titled "What Do We Need Concepts For?" In it he claims animals, for various reasons, do not need, nor can they form concepts. In the place of concepts they have what he calls "behavioral categories". Descriptively this idea could be explained as a "condition- production rule, or CP rule". In its simpler form the "CP rule can be described in an IF (condition), THEN

(production) form. The condition is typically a data structure about some state of the world, the production typically an action." (WCF, 17)

> In simple prelinguistic organisms, the CP rules take the form of behavioral categories. An animal may, for example, have the following CP rule as its behavioural category: IF small, dark and smells good, THEN chase it. What is important about behavioral categories is that the production part is inseparable from the condition part. Even when the same animal recategorizes the same prey in terms of, IF only head is visible and has this shape, THEN chase it, the new condition cannot be added to the old and detached into an independent rule, cognitively closed and free of behavioral productions. To do that is to form a concept. (WCF, 17-18)

Bogdan goes on to say that animals do not have the "resources nor the need to form concepts". The animal can make out quite "well with behavioral categories". There is no point in having concepts if behavioural categories will do; and there is no way to have a concept if the resources are not there. (WCF, 18)

The behavioural category comes in a "whole package" because it takes the whole package "to guide behaviour to its goals". In other words it does not break a condition down to "(small, dark, etc.)". Animals can "learn to combine categories by",

> either disjunctive listing of condition, (IF small, and dark, or if head is thusly shaped, THEN do it) or by linking conditions in some order [IF such and such sounds, or such and such movements, THEN gather some more information (THEN, IF small and dark, THEN you know what next)]. The latter is not an inference, just a conditional expansion of the

data structure needed for the behavioural production. In either form such categories remain essentially behavioural. (WCF, 18)

Bogdan then goes on to ask, "Do animals have concepts, in addition to behavioural categories"? If behavioural categories can do the job, concepts are not required. If they can't do what is required "and if the behaviour itself is observed to evidence cognitive versatility and sophistication, we must look for the cognitive resources (language, memory, whatever) needed to form, access and utilize the data structures operating as concepts". (WCF, 18-19) Our primates certainly have all the cognitive resources required for concept formation, but do they need concepts? It is claimed by some "animal psychologists that hungry pigeons can be trained to form the concept of redness through exposure to various colour slides, with only red being rewarded with food". (WCF, 19) It is also said they seem to be able to form "other concepts" which look to be of an unusual nature. Bogdan disputes this and claims it looks more like "[IF...red...THEN (IF peck THEN food)]", behavioural category rather than concept formation. He questions that what we are seeing is "genuine concept formation". (WCF, 19)

it is likely that the property of redness is packaged in the condition slot of the pigeons' behavioural category with other properties such as shape on the wall screen of a box or the like. The experiment varies the images projected on the screen, not the screen itself or the wall or the box. (WCF, 19)

"Concepts" which have to do with "colour", it appears, are of little importance to animals. Children's studies show "words" are required to encode "colour concepts", and unlike animals, they are endowed with all the "resources" necessary for "abstract" concept formation. (WCF, 19) [See Michael Ruse on colour. Apparently, the reason we do have names for basic colours is because we are genetically programmed to discriminate between them. (TDS, 143-4)]

> Language, of course, helps enormously by providing, through words, means of tracking concepts and, through grammar and logic, regimented and flexible means of deploying them. Language also regiments the public use of concepts, their semantic anchoring and epistemic values. (WCF, 20)

Bogdan's behavioural categories sound much like the old signing argument where it is claimed animals respond only to signs. "Words are both signs and symbols to man, they are merely signs to a dog". (TSC, 27) Speaking of animals Leslie White claims the apes are "exceedingly intelligent and versatile",

> They have a fine appreciation of geometric forms, solve problems by imagination and insight, and possess not a little originality. But they cannot express their neuro-sensory-muscular concepts in overt symbolic form. (TSC, 300)

The only way animals can "communicate their ideas" is by using "signs", "gestures", and not by "symbols". To use symbols successfully means one would have to be a creator of symbols and animals, it is said, cannot create symbols. "One

generation of apes begins where the preceding generation began. There is neither accumulation nor progress." (TSC, 300) Does White really mean that animals are intellectually limited, that their intelligence level has been forever fixed in time? Are their species static, or do they have the same chance in the evolutionary game to change, as did the human species? Suppose what Bogdan or White say is correct and animals respond only to signs, still, the signs have to be remembered, they have to be recalled, there has to be recognition. A mental mark must still be made, even though it is only of a sign. If memory is one of the prerequisites to concept formation, animals clearly have this component as shown by our detailed discussion of the chimps. Not only do they remember signs but are capable of using them in a meaningful and discriminating manner. The function of a concept is,

1. "To pick up relevant and useful properties of the environment."

2. "To identify goal satisfying conditions and guide behaviour toward them." (WCF, 17)

The reasons why concepts function in this manner is because "organisms, whatever their complexity, have basic goals (replicate, survive, maintain appropriate energy levels by eating and resting and so on) which they must satisfy". (WCF, 17) Animals are quite capable of meeting the two conditions mentioned above because they do function and quite

successfully.   Wittgenstein would not agree.   See our
discussion on his thoughts about concept formation in Part I.

DISCUSSION AND CONCLUSION

Wittgenstein in the Investigations, and all his other works
which came after the Tractatus, attempted to show how our
perceptual processes were tied to language. Indeed, without
language and the concept, knowledge about anything would be
impossible.   In essence he was telling us that the cognitive
processes of the human species would not function effectively
without language.   We have tried to show that the cognitive
processes and language are two different entities, and if
anything language is dependent on these processes.

Wittgenstein would subscribe to the idea put forward by Simone
Weil that "Sensations tell us nothing about the world: they
contain neither matter, space, time, and they give us nothing
outside of ourselves, and in a way they are nothing."
(SW, 25) Wittgenstein thinks that an individuals powers of
perception are activiated when he is taught and learns to use
language. In the absence of language, the human species would
be like Rush Rhees' example of the rat and the bull, where
sense data is reacted to but not recognized for what it is.
However, in spite of this Simone Weil does agree, "thinking
must start with some material: it cannot as Descarte's cogito
argument claimed to do, create or even constitute its own

material". (SW, 18) Wittgenstein would claim, thinking starts with the learning of language. Until then it is nowhere to be found. For all species there is an input and an output side with a processing mechanism sandwiched between. The input side takes in data from the environment while the output side is the mechanisms reaction to the data. The reaction could be any manner of a behaviour, such as language with the human species. Without sense data the mechanism could not be fueled and thus no output.

What Simone Weil said about sensations could also be said of language, that it similarly is a nothing. It neither senses nor processes, nor can it discriminate, recognize or remember. Without the processing mechanism language would not exist. In the scheme of things language is only a tool used by the mechanism to explain its perception of the world. Michael Ruse claims that the human species is genetically programmed as to the manner in which its powers of perception function.

> Epigenetic rules are ultimately genetic in basis,
> in the sense that their particular nature depends
> on the DNA developmental blueprint...In cognitive
> development the epigenetic rules are expressed in
> any one of the many processes of perception and
> cognition to influence the form of learning and the
> transmission of units of culture. (TDS, 143)

An example used by Ruse to explain how epigentic rules function is the manner by which "colours" are classified. (TDS, 143)

> Apparently, unconsciously we break colours up into
> four basic categories - blue, yellow, green and
> red. We do this even as infants, and carry the
> practice through to adulthood. Thus we are led to
> have precise names for colours...The primary
> genetic rule at work here is the common heritage of
> all humans. (TDS, 143-4)

The material quoted leads us towards the idea that colour discrimination, recognition, and therefore concept formation, are a capacity programmed into a species. This idea is reasonable because, why provide a species with the necessary receptors to receive data and stop there? Why not finish the job and install a processing mechanism. Otherwise a species would be like a motor, not connected to anything, not producing anything, but being continually fueled.

"What evidence is there that the genes play a role in the perception of colour just described?...There is growing evidence that colour perception is rooted in the actual physiology of the eye...There are pertinent differences in the nerve cells responsible for the transmission of colour information to the visual cortex of the brain. Also, experiments on animals show that colour sensitivity is strongly controlled by the genes." (TDS, 144) This means we are predetermined in our ability to discriminate between colours.

The same could be said about tastes, "Those of our ancestors who had such taste discrimination had a clear adaptive

advantage. Ripe fruits, honey and the like are more nutritious than unripe fruits, acids and so forth. The last thing you want is a being which is quite indifferent as to what enters its mouth." (TDS, 144) It appears that the evolutionary process which must have spanned millions of years, provided all organisms with the structures required to survive under normal conditions. That these structural components were in place in the human species prior to language is evident from studies of other species within the animal kingdom.

Language would then have no influence on what cognitive powers a species might possess. "The human perception of colour may well be primarily a legacy of our primate past, rather than something of immediate adaptive value". (TDS, 145) This could be said of all things which come to us through the senses.

We are not claiming language is not important, only that the cognitive processes enjoyed by a species have nothing to do with language. They are two separate entities. However, the capacity to use language could have been programmed into our genetic map. One such study appropriately named the "Eve" hypothesis looks at this idea. It is based on a study "that all living humans can trace their ancestry back to one female. She lived in Africa roughly 200,000 years ago, and naturally enough she has been named Eve." (MKE, 34)

It is difficult to believe that the entire human
population could be traced back to one woman, but
mitochondrial inheritance makes it possible. Any
time a woman produces only male offspring, her
mitochondria stops there. (MKE, 34)

"Some recent research from Stanford University suggests that
when the evolution of languages is compared to the genetic
evolution of humans, there's a match: the linguistic family
tree is the same shape as the genetic family tree. Wilson
takes this to mean that modern humans and language had the
same starting point." It seems from "circumstantial evidence
that a mitochondrial mutation can target a specific part of
the body - even the brain. Allan Wilson's suggestion that a
single mutation created speech may not be as far out as it
seems". (MKE, 34) Apparently the mitochondria can only be
passed on by the female. Therefore, should a migrating group
meet up with a nonspeaking group only the female could pass on
the mitochondria. It would take a considerable length of time
before all the nonspeaking members of that species, in that
part of the world, were bred out. The diffusion to areas
other than the African continent would have been much later.
The ramifications are, "The analysis of mitochondria may be
the start of a new wave of biochemical paleontology, in which
the fossils are gene sequences excavated from our own cells".
(MKE, 34)

The mitochondria would have no influence on what cognitive
processes a species through evolution would end up with. The

speaking and nonspeaking members would have still been compatible in every respect. The only difference being that there were speaking members of that particular group. This study suggests that the cognitive powers this particular species had, were in place long before language made an appearance.

The "Eve" hypothesis is exactly that, a hypothesis and nothing more. Accommodations within the hypothesis would have to be made for the evolution of the vocal tract which makes sound/speech formation possible. However, this likewise is only an idea because, does sound/speech activity have to take the form enjoyedby the human species? Whatever the answer, possibly more research data in the future will provide some of the answers. What these studies do indicate, is that meaningful language appeared quite late in the evolutionary development of the species. There was some 5,000,000 years between the hominid/ hominoid split, and a language using Homo sapiens. On the evolutionary scale of time, whether language started 50,000 to 200,000 years ago is unimportant. Somehow the species managed to survive and evolve without language, and if the primates are any indicator, this was managed quite successfully.

Proposing theories of perception without consulting the research data of other disciplines can be problematic. A great many questions would remain unanswered. At one point in

our paper we said Wittgenstein's theory of perception was very materialist in its orientation. The theory brought everything out into the open, into the social activites of a species where the art of living is practiced. However, from our point of view he has not quite made it, because of his disregard for the sciences and their findings. This we have attempted to make clear from his remarks on the evolutionary process, and his comments on the nature by which data are perceived.

Wittgenstein during the course of his analysis of how sense data are perceived, attacked many of the faculties of perception which are basic to almost all species. Memory, recognition, recalling things correctly, the subjective ostensive definition, were found to be elements which all animals use and quite effectively, to sort out and catalogue phenomena in their particular environment. Without these abilities any species, at least within the animal kingdom, could not survive. They would not learn from their mistakes but merely repeat the same errors, if they did survive them in the first place.

We would like to say language is not necessary to activate the cognitive processes of a species. The function of language is to communicate to others the way the mechanism views the world. Standards are arrived at of the phenomena encountered such as colour, sweetness, water quality, etc. Language enables us to discuss established standards intelligently

without having the data present. Therefore, Wittgenstein's
beetle in the box example is very good, because in the act of
communication the object of experience becomes redundant. In
other words we do not have to carry the object around with us
in order to discuss it. This is one way to look at the
private object, however, there is also another. Since we are
all members of the same species the objects of experience must
affect us in a similar manner. Therefore, discussion about
the object becomes possible, we understand each other.
Wittgenstein jettisoned the objects of experience, because if
private, they must be perceived privately. In other words
there would be a thinking subject, an ego surveying its own
sense data. This would take us back to the idea of a private
world against which he argued so forcefully.

The primate studies, if they make anything clear, is the case
for the ego and the private object. Somehow the primates use
mental indicators to record data. Wittgenstein's disclaimer
of the ego and the object does not hold in the case of the
primates. Using the pygmy chimps as an indicator, they appear
to be a cut above the other apes. The human species without
doubt are a cut above the primates. What is possible for the
pygmy chimps, should have been more than equally possible for
the human species, from its divergence to the inception of
language.

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NOTE

The asterisk indicates that this material is arranged using numbered paragraphs or aphorisms. Therefore all quotes used in the text from these sources will refer to the paragraph number rather than the page. However, even within this system Wittgenstein has not numbered some of the paragraphs, the page number will then be referred to. All other material not noted by the asterisk, when referred to, will be to the page number.