AN EXPOSITION AND DEVELOPMENT OF
WITTGENSTEIN'S "MIRROR THEORY"

A THESIS

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DAVID B. AN IS

ADVISERS - DR. ROBERT J. ROBERTSON, DR. JACQUES R. GOUTOR

BALL STATE TEACHERS COLLEGE

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PROBLEM

The object of this paper is to give an exposition and development of Ludwig Wittgenstein's "mirror theory" as it relates to language expressed in the *Tractatus Logico-Philosophicus*.

"Mirror theory" suggests that the main function of language is descriptive. Language describes the actual state of affairs; it mirrors reality as a mirror reflects a certain image. The question at hand is: if language mirrors reality in what sense and how does it reflect the state of affairs?

INTRODUCTION

Wittgenstein suggests that there is a one to one correspondence between a word and an object, and yet in dealing with language, symbols and not objects are used. The relation between language and reality is the realm of semantics. What connects a sentence with an actual state of affairs?

To Wittgenstein all our knowledge about the world comes through the medium of language; therefore the world we know is inseparable from the language we use: "The limits of my language mean the limits of my world." (*Tractatus 5.6)* Knowledge is not merely the grasping or having

*Note: All quotations from the *Tractatus Logico-Philosophicus* will be in parenthesis with the number of the proposition after the quotation.*
of ideas or impressions as Locke suggested, but instead it is involved in:

1. **pragmatism**  
2. **logical positivism (empiricism)**

If knowledge is merely the handwriting upon the "tabula rasa", then all that would be necessary for this knowledge would be to sit back like a geiger counter and start ticking with ideas. "Knowledge, action, and evaluation are essentially connected. The primary and pervasive significance of knowledge lies in its guidance of action: knowing is for the sake of doing."\(^1\) As Peirce suggests, ideas are "meaningful" only if it is possible to conceive of effects or consequences that would affect our experience.\(^2\)

"The meaning of a word is its use in the language."\(^3\) Words are like tools with certain functions, and "All tools serve to modify something."\(^4\) The validity of a tool is its validation. In other words the connection of language to reality lies in action, "A statement is factually significant to a given person if and only if he knows how to verify the propositions which it purports to express."\(^5\)

In line with the Viennese circle, Wittgenstein renounced a metaphysic by stating:

"My propositions are elucidatory in this way: he who understands me finally recognizes them as senseless, when he has climbed out through them, on them, over

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\(^1\) Clarence Irving Lewis, *An Analysis of Knowledge and Valuation*, p. 3.
\(^4\) Ibid., p. 7.
then. (He must so to speak throw away the ladder, after he has climbed on it.) He must surmount these propositions; then he sees the world rightly."(Tractatus 5,54)

Since reality (fact) is expressed in language, the form of language (reality) can never be transcended to observe that form "ding-an-sich". Statements about (that "say") language enter the nominal realm, while statements that "show" describe the phenomenal realm.

Carnap's "physical language" is constructed to express a "logically perfect language". Russell in the introduction to Wittgenstein's Tractatus Logico-Philosophicus stated "... he is concerned with the conditions which would have to be fulfilled by a logically perfect language."¹ But since it was held by Wittgenstein that language is the limit of reality (known) a constructed language would be a metaphysical statement; therefore Wittgenstein says in the Tractatus Logico-Philosophicus that "All propositions of our colloquial language are actually, just as they are, logically completely in order."(Tractatus 5,5563)

"The object of philosophy is the clarification of thought: a work of philosophy consists of elucidations."(Tractatus 4.112) In regard to this, Kantian philosophy may be expressed as follows:

a. "The task of theoretical philosophy is to make transcendental deductions concerning the limits of theoretical discourse, not to speculate over what transcends this limit and thus cannot be theoretically known.

b. A world is a possible world of experience only if it is "possible" to theoretical reason, i. e. if it is imaginable and intelligible.

c. Our experience has a "form" which is founded in theoretical reason and a "content" which is based on our sensations.

d. True synthetical propositions are a priori if they refer only to the form of experience, a posteriori if they refer also to the content."²

¹Ludwig Wittgenstein, Tractatus Logico-Philosophicus, p. 7.

The task of philosophy for Wittgenstein, as it was for Kant, is to indicate the limits of discourse; the transcendental deductions of Kant are the same that are found in Wittgenstein's logical analysis: "Logic is not theory but a reflection of the world. Logic is transcendental." (Tractatus 6.13)

Wittgenstein traces the world as a fact to the proposition or language. His seven theses expressed in the Tractatus Logico-Philosophicus are:

1. The world is everything that is the case.
2. What is the case - the fact - is the existence of atomic facts.
3. The logical picture of the facts is the thought.
4. The thought is the significant proposition.
5. The proposition is the significant proposition.
6. The general form of truth functions is \( (P, E, N(E)) \). This is the general form of propositions.
7. What we cannot speak of, we must be silent about.

A brief elucidation of the central ideas stated above follows, as well as the methodology used in the exposition and development of this paper. The world is known as an existent fact, not as unrelated objects. Relations of objects to others are expressed in a proposition which expresses the fact. Atomic facts are simple relations, the building blocks of a language. A mental image is in correspondence with the empirical form of reality as a thought which constructs a "picture". The thought is expressed as a proposition in language, and the mental picture is transformed into a verbal picture. This picture, either mental or verbal, "reflects" the state of affairs. Compound statements are made up of elementary (atomic) propositions whose truth or falsity can be determined by a truth table. Optative and hortatory sentences as well as others may be translated into indicative, descriptive propositions. The form of a truth function is "E" - an atomic proposition with a set of negations \( N(E) \). What cannot be said clearly
cannot be said at all for it means the word is being used improperly in regard to its logic.

The above is the general development found in the **Tractatus Logico-Philosophicus** and develops the ideas expressed by Wittgenstein. The first part of the **Tractatus Logico-Philosophicus** suggests that propositions do reflect reality while the last half states that propositions do not say anything about reality. This author will attempt, at the end of the paper, to bring together the seemingly contradictory statements into a unified whole.

The task of exposition perhaps does not seem difficult; but because of Wittgenstein's cryptic and aphoristic style as well as the means of presentation a consistent development is very difficult. Main theses are indicated by a whole number, i.e. 1, 2, 3, while those propositions which are more detailed and sub-propositions to the main propositions are numbered with a decimal system, i.e. 1.1 is a sub-proposition to 1 while 1.11 is a sub-proposition to 1.1. Wittgenstein is not consistent with the enumeration and therefore the deductive process is not always clear. For this reason the main proposition numbers being discussed will be placed at the top of the page for the reader's convenience.

Also within the **Tractatus Logico-Philosophicus** there are many propositions which completely contradict each other, but which may stand together both valid and meaningful, e.g. the formal statements dependent upon their form (deductions) alone as compared to those statements which receive their validity from Schlick's or Carnap's "verification principle". This problem again is mitigated by the metaphysical bent in Wittgenstein's philosophy. Although he was in line with the positivist's school many of his statements were metaphysical in nature. Fleibleman called him both a "metaphysical
realist" and an "epistemological realist", the former believed forms or ideals existed (Platonic universals), the latter that the particulars are real. How is it possible for Plato and Aristotle to stand together, or Hume and Descartes?

BODY

The first main proposition and its sub-propositions read as follows:

1. The world is everything that is the case.
   1.1 The world is the totality of facts, not of things.
   1.11 The world is determined by the facts, and by these being all the facts.

The above statements are based upon the "field of perception" as it relates to epistemology. The world (anyone's world) by the extent of language is all that exists; it is not a mere conglomeration of entities floating through space like Heraclitus, but instead reality consists of definite facts or relationships. In the figure below the individual lines (particulars or things) are combined into a structure whole (law of proximity).

```
\[ \begin{align*}
\text{line 1} & \quad \text{line 2} \\
\text{line 3} & \quad \text{line 4} \\
\end{align*} \]
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The lines isolated have no meaning in a formal series for the whole assumes the series. "Because the 4 objects have certain definite qualities and stand in a certain definite relation to each other we can say that the picture apprehended has a structure."²

The eight lines are taken first as a whole with a structure, then

¹Ibid., p. 24.
²Ibid., p. 24.
the particulars are deduced from the whole. "To perceive a complex
means to perceive that its constituents are combined in such a
way." (Tractatus 5.5423) A "Gedanke" (thought) is a "Tatsache" (fact)
and because of this has a structural relationship. An object that is
symbolized in a thought falls into a definite situation and thus the
thought is a fact. One cannot think of an "apple" without seeing it
in some field of perception, i.e., on a tree, on a table, etc. Does
the thought form the fact or does the fact form the thought?

In the function \( F(a, b) F(b, c) \ldots \) that which determines the
type of dependence between the members is not found as a member of the
series by which it develops, but instead of disconnected particulars.
The form is an ordered manifold assumed or presupposed by a generic
concept. In this formal case or in a case of perception as above
"... the qualities of things and the pure aspect of relation are
placed on the same level and fused without distinction." 1 In other
words, the relationship which makes up a fact is presupposed prior
to the perception or use of that fact. An apple may have the qualities
of redness, sweetness, etc., but the relational aspects such as
distance to another object or the contexts into which an apple may
fit is determined. This is demonstrated later in the paper. (See pp. 9-10)

The coordinate system of Newton was of absolute space and time,
but Einstein showed a multitude of manifold coordinate systems
depending upon a body of reference. Isolated objects are unimaginable
for they all stand in a particular way to the perceiver. "The
structure of the world is determined by the way the world as a fact

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1 Ernest Cassirer, Substance and Function, p. 16.
is analysed into more simple facts \ldots \ldots\)\footnote{1} The methodology of
analysis forms the picture just as the means of experimentation holds
the hypothesis. A scientist gives a value judgment in constructing
the means to test his hypothesis.

The second main thesis is an important statement which has many
implications.

2.0 "What is the case, the fact, is the existence of atomic facts."\footnote{2}
This statement is based on Russell's logical atomism. Simple state-
ments (atomic propositions) have no parts which are themselves
statements, whereas molecular propositions are composed of statements.
"John is blonde." is an atomic proposition since there are no other parts
which are statements. "Either the class will elect Bill or Joe will be
elected." is a molecular proposition since it is made up of the first
disjunct "Bill" and the second disjunct "Joe". Atomic propositions are
facts according to Russell, therefore, the entire world can be
constructed out of the combination of atomic (simple) propositions.
The truth of these propositions depended upon correspondence to the
fact. Russell goes on to say, however, that "All these statements are
about symbols. They are never about the things themselves \ldots \ldots\)\footnote{2}

How then can statements be made that are meaningful (and true
perhaps) that have no empirical referent (object in Russell's
terminology)? Russell developed his theory of descriptions to explain
this polarity. If a statement is made about the "fountain of youth"
this is a "descriptive" proposition and does not imply existence.
"Proper names" have real referents, such as Queen Elizabeth, and are
the building blocks of reality.

\footnote{1}{Erik Stenius, \textit{Wittgenstein's Tractatus}, pp. 27-28.}
\footnote{2}{William P. Alston and George Kahanikian, \textit{Readings in Twentieth
Century Philosophy}, p. 296.}
In Wittgenstein's system the totality of facts (Factsachen) is made up of (Sachwelt) atomic facts (hold of things), i.e., a way things stand in relation to one another. The picture of the situation of atomic facts as expressed in an elementary proposition means the arrangement of objects (Gegenstand). These objects are simple or not further reducible. "In atomic facts objects hang one in another, like the links of a chain." (Tractatus 2.05) "The way in which the objects hang together in the atomic fact is the structure of the atomic fact." (Tractatus 2.032) The fixed, the existent and the object are one, and in the atomic fact objects are combined in a definite way. The atomic fact is not the actual combinations of objects, but is the possible way objects may hang together. Wittgenstein does not have the problem that Russell had in trying to name one atomic fact for language postulates the possible relationships.

Here arises the problem that objects are independent, static, fixed, and yet part of a structure in a field of perception located in logical space. As seen before in diagram 1 the particular links are seen as a whole in a certain relationship depending upon the perceiver: the way objects hang together depends upon how they are perceived.

If the link of a chain is broken the structural relation of one link to another is altered either by being a useless chain or by the length being altered so that the original object no longer meets prior specifications of the chain. An analogy from Einstein aids in seeing that the structural relationship of objects depends upon the perceiver.
A storm occurs, and two bolts of lightning strike the track simultaneously at points A and B. Einstein asks "What do we mean by "simultaneously"? The following experiment is set up:

Observer O is placed halfway between A and B with a mirror arrangement that he may see both A and B at the same time. Observer O is on a train moving from B to A and also has a mirror arrangement. When both O and O₁ are abreast lightning strikes. Is the lightning simultaneous for each observer? Since O is moving with a definite speed from B to A the light reflected in his mirror from B will be a fraction of a second later than A. So it seems that every coordinate system has its own particular time or reference system.

The atomic fact is a picture and is a model of reality. "We make to ourselves pictures of facts." (Tractatus 2.1) That the elements of the picture are combined with one another in a definite way represents that the objects are combined with one another.

This connexion of the elements of the picture is called its structure, and the possibility of this structure is called the form of representation of the picture. The terms "called", "form of representation" are mystical and ambiguous here as is "picture". If the fact pictures the situation as does a mirror then there seems to be a definite correspondence between fact and picture. Wittgenstein has already said fact is a picture, "... it reaches up to it." (Tractatus 2.1511) From the idea expressed in Einstein's analogy
we get a similar statement from Wittgenstein: "The representing relation consists of the coordinations of the elements of the picture or the things." (Tractatus 2.1514) For Einstein the above is a coordinate system; for Wittgenstein it is a sentential isomorphism related to fact.

"A picture is an interpreted fact." (Tractatus 2.141) and is expressed in a proposition, "The elementary proposition consists of names. It is a connection, a concatenation, of names." (Tractatus 4.22) The fact and its organization is represented by a combination of names denoting certain objects, actions or linguistic relations, and these components of the fact are mentally pictured by an image. Both the mental picture and the proposition picture are supposed to reflect reality, but in a proposition we seem to be dealing with objects, but in our language we are dealing with symbols as Russell said.

The atomic fact "ding-an-sich" right deal with objects devoid of any symbolism, but as soon as the fact is expressed in either conceptualization or communication the picture (correspondence) is an "interpreted" fact. The isomorphism of word to object is basically involved in semantics or the logic of language. "It is essential to see that logic deals only with grammatical determinations and not with the world." 1

Ogden and Richards expressed this same statement in their triangle of symbol and referent.

1 Alexander Maslow, A Study in Wittgenstein's Tractatus, p. 55.
Between the symbol and the referent there is no relevant relation other than an indirect one, which consists in its being used by someone to stand for a referent.\textsuperscript{2} Verbal confusion arises when the triangle is made solid, for then in a "sign-situation" instead of dealing with signs or symbols (names) we think we are dealing directly with objects. Again, if this were true, knowledge, as Locke would have it, would consist in the having of words.

The third main thesis develops the world as a case to the fact to a representing picture of that world as a thought.

3.0 "The logical picture of the facts is the thought."

As seen before for Wittgenstein the fact is a thought and a thought is a fact. The thought is expressed perceptibly through the senses for there is no Cartesian bifurcation of perceiving and conceptualization. Sensory data seems to be the mediator for the correspondence of thought to object, but this depends upon the assumption that an object is different from that which is expressed in the senses. The division or categorizations of objects and subjects seem to be a further development of Platonism, but when the sphere of perception is taken epistemologically what difference would it make if we were dealing

\textsuperscript{1}C. K. Ogden and I. A. Richards, \textit{The Meaning of Meaning}, p. 11.

\textsuperscript{2}Ibid., p. 11.
directly with the object (in itself) or as a pseudo-object expressed in the senses? As long as knowledge depends upon action, the inferences made from the sensory data will be either verified or falsified in action.

The "logical picture" is a presentation of the form of reality as expressed perceptually through the senses and thought. What it presents is its "sense", and this "sense" is involved in what the proposition "shows". The sense of the proposition is directed by the propositional sign.

"The sign through which we express the thought I call the propositional sign. And the proposition is the propositional sign in its projective relation to the world." (Tractatus 5.12) This is understood when proposition number four is seen:

4.0 "The thought is the significant proposition."

Wittgenstein has now traced the world to the fact, to the thought, to the proposition.

The form of reality is projected by the picture (thought). Here Wittgenstein again goes back to the isomorphic relationship of a one to one correspondence. Projection is not clearly explained; it could be a mathematical projection as found in geometry based on certain principles of transformation.

In this projection both figures 1 and 1₁ are used, but in dealing with the projection of 1₁ we are concerned with the final form. This form (1₁) is the form we desired and will use. The projection can be made into a solid figure itself and thus becomes a starting point for further projection. In Wittgenstein the rules of projection are
found in the propositional sign. In the above figure the propositional sign might be a ratio of lines of 1:1.5.

A sign is a name, and the name has a direct relationship to an object. "The configuration of signs corresponds to the configuration of objects in a state of affairs." (Tractatus 3.21)

The sign which corresponds to an object (name) is called "simple sign" while the propositional sign is a more complex development made up of simple signs. "The name means the object. The object is its meaning." ("A" is the same sign as "A") (Tractatus 3.202) The sign given to an object or name is found in its symbolism, and the rules of symbolism are an arbitrary system.

It would seem then that all that would be needed to understand the sense or use of an object is to know its name, but Wittgenstein went on to say: "Only facts can express a sense, a class of names cannot." (Tractatus 3.142) In other words, the signs (names) of an object can give no sense unless it stands in certain relationships to other signs in a proposition. "Only in the context of a proposition has a name meaning." (Tractatus 3.3)

A proposition is the description of a fact; it is not a name of an object. The proposition is a function of names (arbitrary symbols) which "... refers to the possible state of affairs in the world of perceptual experience. To understand a proposition means to know what is the case." (Tractatus 4.024) In order to use a proposition an object does not have to be an immediate experience, but it must be either a possible experience or an already verified experience. This allows a more free empiricism.
than Mill or Hume would allow which in turn mitigates the plasticity of the functional use that language can fulfill.

If we know what the sense of a proposition is we know what actions tend either to verify or falsify that proposition, but if we are not able to take a step in either direction we have failed to grasp the sense of the proposition or the proposition has failed to "reflect reality".

In The Blue and the Brown Books Wittgenstein developed the idea of "grammatical" and "empirical" propositions, the former being formal statements having no "real" referent and the latter having the ability of being verified or falsified. The grammatical propositions are tautological in that they derive their meaning from their definitions, e.g. "All bachelors are male and single." or they correspond to certain presupposed or postulated rules, e.g. $1 + 1 = 2$. The truth of these propositions depends upon their coherence or consistency while empirical propositions are based on the verification theory of meaning stated above (Schlich).

As stated before, propositions deal with the possibility of a fact and not with the actual fact. "The picture represents what it represents independently of its truth or falsehood."(Tractatus 2.22) and can be understood prior to its truth or falsity. Verification comes through application of a proposition in correspondence to reality or the fact.

"There is no picture which is a priori true."(Tractatus 2.225)

This implies that in order to have a logical picture the proposition may be understood while the truth or falsity is not known. If the name of verification is unknown then the proposition is not understood.

Wittgenstein is correct in saying the truth or falsity of a proposition
is not necessary in the cognizance of a proposition, but the
principle of verification must be known if there is a full understand-
ing of that proposition.

In his theory of description, Russell realized that some
propositions denote actual objects while others describe certain
entities that may or may not have existence. He also supported,
or covered up for, his logical atomism by suggesting propositions
are about symbols and are not ontological in nature. Wittgenstein
had the same problem with the truth and falsity of propositions. If
symbols are used as if they are the actual referent then the triangle
of association is darkened; it should be realized that the symbols are
only arbitrary. In Wittgenstein's correspondence theory of truth a
proposition is true if it reflects reality, but what is a false fact -
one that reflects false reality?

"If one does not observe that propositions have a sense
independent of the facts, one can easily believe that
truth and falsity are two relations between signs and
things significant with equal rights. One would then,
for example, say that "P" signifies in the true way
what "¬P" signifies in the false way, etc." (Tractatus
4.061)

Negative facts do not exist for propositions are positive in
nature. The proposition "¬p" describes the same fact that "p"
describes. "That negation occurs in a proposition, is no
characteristic of its sense (¬ ¬ p = p). The proposition "p" and
"¬p" have opposite senses, but to them corresponds one and the
same reality." (Tractatus 4.0621) Here Wittgenstein should have
said "fact" instead of reality for the process of negation refers
to the symbols in a proposition or to a proposition and not to an
object in reality. We are dealing with facts and not reality (ding-
"John is here." states that a person or class is included in the class of here while "¬P" states that John is excluded from the class of "here".

![John Here]

Both propositions reflect or picture that John was in a certain place, but again we have dealt with John not as an isolated name but as a fact.

The relation between reality (dinq-an-sich), reality (phenomenal), fact, proposition, and thought is akin to Berkeley's famous dictum "Esse est percipi". For something to be known it must be expressible in a proposition, and in a proposition the object denoted becomes a fact hanging in a certain way. For a thing to be known in itself is absurd for as soon as it comes into the field of perception of an individual it takes on a certain structural relationship becoming a fact. Reality (known) consists of facts which is the Gedanken (thought). Since the fact is a thought, reality become mental as the idealist would have it; but again since the proposition is verified empirically the meaning is empirical. This is a seeming contradiction, but this author believes the dispute between the rationalists and empiricists, as resolved by Kant, is basically correct with a little more scrutiny which will be taken later on in the paper.

Involved within the negation process is Wittgenstein's famous truth function of "molecular proposition". The main thesis number five states:

5.6 "The proposition is a truth function of elementary propositions."
These propositions are complex in nature, and are made up of elementary propositions (atomic facts). By a truth function operation a proposition's veracity may be exposed, but more important than that, all the truth and false possibilities may be known of that proposition. To know a proposition means to know what is the case and this is done logically by setting up a truth table. If all the possibilities of truth and false variable substitution instances in an elementary proposition are known, then the proposition can be said to be known. If in order to verify a hypothesis every substitution instance had to be tested empirically no hypothesis would be verified, but with the truth table a shorthand method may be used.

6.0 "The general form of the truth function is \((p, q, \neg (p))\). This is the general form of proposition."

Proposition number six states that the general form of a proposition is an atomic fact \((3)\) with a set of truth functions, i.e. true or false, applied to it.

\[
\begin{array}{ccc}
  p & q & p \lor q & \neg p \\
  T & T & T & F \\
  T & F & T & F \\
  F & T & T & T \\
  F & F & F & T \\
\end{array}
\]

Proposition number seven states:

7.0 "What we cannot speak of, we must be silent about."

and is based on the Cartesian "clear and distinct" idea. If one is consistent with one's use of a symbol in a language, then, as Wittgenstein says, there is only one meaning to a proposition. This again is in line with the positivistic school as expressed in the desire for clear and exact meanings to statements.

If we are not able to speak clearly then the use of the word is not in accordance with the application of its logic. The statement
"I feel his pain," is not meaningful for the context reveals an improper use of "feel" and "his pain". The word "pain" encompasses not only the consciousness of the feeling, but also the idea of a stimulus creating pain. If a person is in pain it is preceded by some occurrence to cause the feeling; therefore, one cannot feel "his pain" unless he also is reacting to the same stimulus, and if so he would be feeling his own pain which is the only meaning to pain. The grammar or logic, as Wittgenstein calls it, reveals inconsistencies and contradictions in our statements.

We now have arrived at the problem that logic is the controlling factor in reflecting reality and yet logic does not deal with reality. The remainder of this paper will discuss the problem and try to resolve the seeming contradiction.

"Logic deals only with the rules of symbolism,"¹ not with the question of reality; it "... is merely the consistent use of our symbolism in our dealings with the world."² Ramsey suggested to Wittgenstein that logic was a "normative science". In other words, logic is not empirical in nature, but stands as a sort of metaphysical realism which is beyond elucidation. There is no logic encompassing our logic or directing it that might be known, for if we were able to speak of it we would have to be able to climb up the ladder and surmount that logic. It would be as difficult as speaking of an idea that we were not thinking. This is why logic and language cannot "say", but must only "show". Since knowledge lies within the limits of language, and since we can never get outside of language, we can only

¹Alexander Maslow, A Study in Wittgenstein's Tractatus, p. 113.
²Ibid., p. 114.
describe our language (world), e. g. we cannot say what electricity is; we can only give an operational description. We can show how language works (structural linguistics and transformationalists) but we can never say (as did the traditionalists in grammar).

Logic acts as does a definition of a word; it is the top step of a ladder which is rarely used or stood upon, and yet without it the ladder would be unsteady and shaky. The definition acts as does the measuring stick; its use is an extensional quantification of the factors involved. The Oxford English Dictionary gives the etymological history as well as the connotations and denotations of that word. The New Webster Dictionary gives the meaning of a word from different standpoints, i. e. biology, physics, common usage, etc. The later Wittgenstein suggests that the "use" is the "meaning". In use the entire definition is not used; there is a generality of inclusiveness or exclusiveness in the meaning as derived from its use. This fact is supported by often misunderstood sentences or arguments which seem to stand on definite definitions or norms that in actuality are not being used, i. e. certain metaphysical or ethical statements.*

We are determined by the logic of our language. "The application of logic decides what elementary sentences there are." (Tractatus 5.557) In other words, by western traditions in logic the classes of "A" and "¬A" can have no third alternative for then we would be fallacious in contradicting the law of the excluded middle. Likewise Schich's verification principle is a determination of the world. The verification statement says: meaningful propositions are those which can be empirically verified. But it is already decided that "meaningful
propositions" are empirical, therefore, all that has been said is
"That which is empirical is empirical." (the principle of identity -
A is A). Even though it is a tautology it acts as a norm, and thus
as a basis for further action.

"Logic precedes every experience that something is so."
(Tractatus 5.55) Prior to an experience the probably "cases" in
which certain names (objects) can occur in a certain relationship are
known; this in accordance with Wittgenstein, is to know what a
proposition means. "John is here." is one instance where the
"possible" contextual relationship in our logic can occur. "John
is gone.", "John is third." are all possible "cases". "Hard is
the sum of square." has no meaning or referent in the field of
perception or language since the possibility of the occurrence of
the names "hard", "sum", "square", cannot appear in this particular
relation.

"To perceive a complex means to perceive that its constituents
are combined in such and such a way." (Tractatus 5.5425) In the figure
shown above the cube may be seen with lines b-b as the front and
A-A as the back or it may be reversed about. There are two
possible ways to connect the parts of the cube, but the point to
be made is that the possibilities are postulated prior to an actual
experience. As Kant's "categories of the mind" determined the "form"
of reality, Wittgenstein's language determines reality for Wittgenstein
drew the cube! $A^2 + B^2 = C^2$ is true because prior to a possible
experience with a Heraclitian triangle "floating" through space the
formula was postulated true. The assertion sign of truth that
Russell and Frege developed is nonsensical to Wittgenstein for logical propositions already say they are true or stand as if they were true. "Our fundamental principle is that every question which can be decided at all by logic can be decided off hand." (Tractatus 5.551) A question which falls outside of the field of our logic is seen to be nonsensical as was the proposition "Hard is the sum of square."

In our proposition formation we place names of objects in certain relations to other logical constants or connectives in order to show a relation to another class. "All men are mortal.", a universal affirmative proposition, has the subject term (men), the copula (are) and the predicate term (mortal). The proposition is understood to say the class of men is included in the class of mortal and yet if we tried to convert the proposition the same sense would not be obtained. "All mortals are men." says that the class of mortals is included in the class of men, but all mortal things are not men; therefore, this relationship cannot occur in our language.

In modern structural linguistics and transformational grammar nonsensical words are used in a sentence pattern to demonstrate that much can be discovered of sentence meaning merely through the form without a meaningful referent. * "The glucks have pollywoged the skitterers." has a definite meaning by certain logical (grammatical) determinations. Key words such as "the", "have", or the "-ed" are signs in suggesting proper relational functions.

The propositions dealt with were in the indicative mood and if

*Note: See any of the books written by Paul Roberts.
they were in other moods they were translated into indicative mood propositions as did Carnap in his metalanguage. If the language of Wittgenstein mirrors reality in a descriptive way then sentences in other moods must also describe reality.

1. "You live here now.
2. Live here now!
3. Do you live here now?"¹

The first sentence in the indicative mood is able to be verified and thus a proposition of logic which is meaningful. The second sentence is in the imperative mood and the third in the interrogative mood. It seems that the descriptive content is the same for all three and yet the meaning or sense appears to be different. In Wittgenstein's terminology there should be an elementary proposition of which the above molecular proposition is derived, but this is on the assumption that all three sentences are descriptive of the same "case". The sentence transformational formulas of Paul Roberts would also reveal "kernel" sentences.

Sentence number one seems to describe a state of affairs, but does sentence number two suggest the same? Number two deals not with the indicative proposition (number one), but says "I desire that . . . ." In other words, the proposition is disguised to appear the same in descriptive content, but actually is about a desire of the speaker. Number three is easily resolved as an answer to the indicative of either yes or no, and again is in accordance with Roberts' transformational rule.

"A process accompanying our words one might call the "process of meaning them" is the modulation of the voice in which we speak the words;
..."1 Meaning is like an arrow pointing the direction of a sentence. It differs from a sign in that the signs tend to form the total meaning; the signs consist of intonation patterns, facial expressions, questions, etc. From the totality of signs the proposition sign or meaning is discovered. \(1 + 1\) is a sign for the operation of addition, and yet the operation is not an operation until the sign has been used with a completed operation which is \(1 + 1 = 2\).

"Language games are the forms of language with which a child begins to make use of words."2 The study of these games is the study of primitive forms. The logic involved in the particular "game" is learned as a child plays with a new toy; in this sense the rules of grammar are empirical, but as the patterns become "conditioned responses" the determining accepted forms are a priori. The Kantian categories of space and time are not innate as the "law of the excluded middle" is a learned statement, and yet after dealing with space and time in our statements the proper usage or game is known a priori.

We again appear to be faced with the problem of analytic a priori and synthetic a posteriori propositions combined in such a way as to lead to confusion. Wittgenstein says, "A name signifies only what is an element of reality."3 but the meaning of that word is illicitly used if it is supposed to correspond to the object - "... the

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1 Ludwig Wittgenstein, The Blue and Brown Books, p. 35.
2 Ibid., p. 17.
3 Ludwig Wittgenstein, Philosophical Investigations, p. 29.
meaning of a word is its use in the language." ¹ The rules of logic are not innate, but are learned as a child in a specific "game". It appears that the Kantian "categories" are determining reality as language, for we decide the use and, therefore, the meaning of words.

Numbers are symbols just as words found in a certain game (geometry, arithmetic, calculus). Does the number reflect reality? Mill suggested that mathematical concepts were empirical, e.g. \( 1 + 1 = 2 \) depended upon a physical environment while Frege suggested the number concept was psychological in nature. There seems, however, to be an interaction of the a priorinness, and the a posteriorinness of numbers. Cardinal and ordinal number theory revolves not around a "thing concept", but around a "relational concept". 1, 2, 3, 4 or first, second, third, and fourth refers not to one entity, etc., but is found either in a formal series or in a formula representing a particular structure of relation. The number is an abstraction and yet its use is held in the application of its logic.

Kepler in viewing the motion of Mars was viewing ". . . a plurality of luminous points in the heavens; it is only the pure mathematical concept of the ellipse, . . . , which transforms this discrete aggregate into a continuous system."² Sense data opens a multitudinous amount of sensations which would be chaos if it were not for the process of reduction and generalizations in abstracting particular experiences. In the process of "limiting" certain

¹Ibid., p. 20.

²Ernst Cassirer, Substance and Function, pp. 118-119.
Postulations are made in order to idealize a particular. A boy stands on a street and watches his friend race by on a bicycle; later a car drives by while the boy rides the bike across the viewer's path. In the first instance the boy's speed on the bike seemed fast, while in the second instance it appeared slow. Motion as defined never offers a fixed point of reference and yet, in order to deal with motion, we abstract. "Motion is not a fact of sensation but of thought; not of "perception" but of "conception"."¹

According to Mach science should fall in the sphere of a posteriori, and yet "no scientific theory is directly related to these facts, but is related to the ideal limits,..."² Plato idealized the shadows by perfect fixed forms in the universal realm, while Aristotle stipulated "no form without matter, no matter without form". Both are correct it seems to this author. Science deals with facts or objects in certain combinations, but these facts are generalized into an ideal form as represented by a mathematical equation. \[ v = \frac{m_1 m_2}{d^2} \] is the equation for the velocity of a moving body around the sun. It represents the fact, but it is in fact as it is perceived and limited by the viewer.

The equation makes "no difference" if it is not applied, for the application of logic determines what exists. An object may exist outside of a language (ding-an-sich), but its being may never be known but merely assumed. As soon as the object becomes part of a

¹Ibid., p. 121.
²Ibid., p. 130.
vocabulary the relation as determined by perception or grammar creates a new unity. Thus the propositions used reflect reality in one sense and say nothing of reality in another sense. Logic can never say anything about a reality outside of language for to do so would be to create the polemic Descartes suggested with "I doubt." * Instead logic determines the reality which is verified through hypothatization or pragmatic methodology.

SUMMARY AND RECAPITULATION

Wittgenstein, like many members of the positivist school, was rebelling against metaphysics when he wrote the *Tractatus Logico-Philosophicus*. He tried to set up limits of meaningful discourse which to him meant the limits of his world. In the common sense realism of G. E. Moore he accepted the physical bodies he thought existed, but these objects existed for Wittgenstein in an expressible logical field of language. The mirror as expressed by Wittgenstein in the *Tractatus Logico-Philosophicus* seems one-way, but in actuality the categories of a language grammar tend to determine the relationship objects take. Since objects are not meaningful (or even knowable) in isolation, they are found as facts. To understand a fact means to see that its constituents are combined in such a way, but the "way" is determined.

The form of logic is arbitrary, but once postulated it is no longer arbitrary. A sign or symbol for an object is of no great concern, but once the symbol has been given, a consistent use is mandatory. The meaning of a proposition (fact) is its use which is

*Note: "I can doubt all except doubting for to doubt doubting would be to doubt."
determined through the application of a particular language game. The rules for the game are determined by the players as was the possibilities of perception in the diagram of the cube. Wittgenstein traced reality - what is the case - to a picture as expressed in a proposition which is a thought. Reality is both physical and mental, while the forms of reality are both a priori and a posteriori.

The "limiting" factor involved in conceptualization determines the boundaries of what is said to be "meaningful" and "real". Schlick's and Carnap's verification theory of meaning prescribes what is to be of value in their reality. Demonstrability, objectivity, and empiricism are the rules for the empirical language game while subjectivity and mysticism may be the rules for the metaphysician's game. To try to verify a proposition of either game by the rules of the opposing factor leads to misunderstanding and nonsensical statements. Only the rules of the particular grammar can verify a proposition for what lies outside of one's language falls in the nominal realm.
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