RUSSELL'S THEORY OF PERCEPTION (1905-1919)
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By

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ABSTRACT

This thesis is an examination and evaluation of the development of Russell's theory of perception and its relation to the external world from 1905 to 1919. During this period Russell attempted a reductionist analysis of empirical knowledge, the foundations of which are sense-data with which we have direct acquaintance in perception. In the course of its development, Russell's theory of perception underwent considerable changes and modifications. I show that these changes and modifications do not seriously alter his main epistemological position which I identify as realism.

The explicit treatment of Russell's realist theory of perception during the stipulated period had two clearly distinguishable subsidiary stages. The first stage, replacing his pre-"On Denoting" absolute realism, was between 1905 and 1912. Immediately after the publication of The Problems of Philosophy in 1912 there was a transitional period of scepticism which ultimately gave rise to the theory of logical construction. This period was between 1912 and 1919. These two stages represent what I take to be the periods of significant change and modification within Russell's realism. However, only during the first stage can Russell properly be called a committed representative realist.

The first chapter introduces the issues to be addressed in this thesis. Chapters two and three cover the foundational aspects of Russell's theory of perception. In chapter two Russell's theory of acquaintance is thoroughly examined. The items discussed are the nature, objects and principle of acquaintance. I show that it is with regard to the objects of acquaintance that Russell's theory of acquaintance underwent considerable changes and revisions. I also present a detailed discussion of the principle of acquaintance and its role in Russell's
epistemology, and suggest that it performs two important functions, one epistemological and the other semantical. Both of them are seen to run hand in hand.

Chapter three is devoted to the doctrine of sense-data which, according to Russell, is the foundation of empirical knowledge during the stipulated period. Some obvious difficulties in interpreting sense-data are seen to disappear on closer inspection. I defend Russell from a certain amount of misunderstanding regarding the sensibilia theory. I also trace and present the justification for a major modification of his notion of the judgment of perception from Principia Mathematica volume I to The Problems of Philosophy and from The Problems of Philosophy to subsequent works. It is suggested that such a modification is required for the internal consistency of Russell's theory of perception.

Chapters four and five are devoted to the relation of perception to our knowledge of the external world. In chapter four the Problems of Philosophy view of the existence and nature of physical objects is investigated. I explain why Russell was right to hold that the naive realist's view is contradictory. I also show that after rejecting naive realism Russell explicitly committed himself to representative realism by holding a causal theory of perception. It is also shown that the epistemological dimension of the theory of descriptions allows him to overcome restrictions arising from the principle of acquaintance. The last part of this chapter explains the transition between Russell's pre-constructionist and constructionist approaches to the relation of perception to physical objects. I show conclusively that Russell became a constructionist as early as 1912.

In chapter five the construction of physical objects is discussed. The emphasis is placed on Russell's epistemological motivation for such construction. I defend much of what Russell says about sensibilia and argue that the inclusion of unsensed sensibilia in construction violates neither the spirit of logical construction nor Occam's razor. I also defend Russell from the charge of phenomenalism. I argue that his constructionism does not commit him to phenomenalism and that he always remained a realist.
Chapter six examines the construction of space and time. I concede that Russell's attempt to construct a six-dimensional space is a failure but suggest that he does not need a six-dimensional space to give an account to the problem of perception. Regarding the construction of time, I show that Russell is for the most part correct in his construction of instants out of experienced events.

In chapter seven I evaluate Russell's theory of perception. I show that Russell is neither completely consistent nor successful in his construction of physical objects. At the same time, I show that there is a consistency of purpose and direction which motivated Russell to introduce logical constructions. The purpose was to secure empirical knowledge from possible sceptical attack and to strike a compromise between his realism and his empiricism. The direction is towards the goal of establishing a bridge between perception and physics. I suggest that the constructionist view is a better approach towards, and a viable solution to, the problem of perception.
A most common attitude towards Russell's philosophy in general, and to his theory of perception in particular, is that it is subject to change without any notice. Thus A.N. Whitehead called him "a Platonic dialogue in himself" and C.D. Broad once remarked that "Mr. Russell produces a different system of philosophy every few years". This view, although not completely unfounded, is, I think, an exaggeration and it fails to do justice to Russell's philosophy. It gives the impression that Russell's philosophy is in continuous flux so that any attempt to show that he holds a hard and fast position flies against the facts. Contrary to this impression, by offering a comprehensive and impartial study of Russell's theory of perception during the period from 1905 to 1919, I attempt to show that there is more continuity in Russell's philosophy than is usually supposed. How far I have succeeded in doing this is for others to judge.

The research and work in this thesis encompass a period of four years. I would like to express my sincere gratitude to my supervisor Professor Nicholas Griffin for his patient help and guidance which have made my task much easier. His perceptive and constructive criticisms have greatly influenced this work. I would also like to express my deep appreciation to Professors Douglas Odegard and James Noxon, members of my supervisory committee, for their invaluable comments and suggestions on earlier drafts of this thesis.

At the initial stage of this thesis project I had two meetings with Professor A.J. Ayer and discussed with him certain issues concerning Russell's theory of perception. Although I disagree, to a great extent, with him about Russell's theory of perception, Professor Ayer encouraged and supported my project. In fact it was Professor Ayer who first mentioned to me that Russell always had the feeling that all
philosophers misunderstood his theory of perception. I was also encouraged by Professor W.V.O. Quine at my meeting with him in Toronto. I am grateful to both Professors Ayer and Quine.

Special thanks are due to Professors James Noxon, Albert Shalom, Sami Najm and to Evan Simpson for helping me in various administrative matters. I would also like to express my sincere gratitude to Joan Houlding, a fellow Russell-student, not only for many interesting and fruitful discussions, but also for being an unfailing source of advice and encouragement during my stay in Canada. Thanks are also due to Professor Helier Robinson who read and commented on chapter six and to Kevin Halion for proof reading a major portion of this thesis.

The research and work of this thesis was carried out while I held a faculty position in the Department of Philosophy, University of Chittagong, Bangladesh. I am grateful to the University of Chittagong for granting me study leave and to McMaster University for providing me with the financial support throughout the entire period. Thanks are also due to Dr. Kenneth Blackwell, Sheila Turcon and to Cheryl Walker (officials at the Russell Archives of McMaster University) for their co-operation during the time of my research in the Archives.

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Last, but certainly not least, special thanks are due to Connie, a most sincere friend, for her love and emotional support over the years.

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Sajahan Miah
This thesis is dedicated to the memory of my mother
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# KEY TO ABBREVIATIONS

In this thesis most of the references to Russell's published works are given in brackets within the text. The following abbreviations are used for this purpose. In the abbreviations, italics are used to distinguish the titles of books from the titles of articles.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Title</th>
<th>Reference</th>
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<tbody>
<tr>
<td>IMT</td>
<td><em>An Inquiry into Meaning and Truth</em> (1940).</td>
<td></td>
</tr>
<tr>
<td>IMP</td>
<td><em>Introduction to Mathematical Philosophy</em> (1919). References are made to the Simon and Schuster edition (no date).</td>
<td></td>
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<tr>
<td>MMD</td>
<td>&quot;My Mental Development&quot; (1944), in <em>The Philosophy of Bertrand Russell</em>. Edited by Paul A. Schilpp.</td>
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<tr>
<td>MOP</td>
<td>&quot;My Own Philosophy&quot; (1972). Written in 1946.</td>
<td></td>
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<tr>
<td>OD</td>
<td>&quot;On Denoting&quot; (1905). References are given to the reprint in <em>Logic and Knowledge</em>.</td>
<td></td>
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</table>
"On the Nature of Truth and Falsehood" (1910), Philosophical Essays.

"On the Notion of Cause" (1913). References are given to the reprint in Mysticism and Logic.

"On Propositions: What They Are and How They Mean" (1919). References are made to the reprint in Logic and Knowledge.

"On the Relations of Universals and Particulars" (1912). References are given to Mysticism and Logic.

"On Scientific Method in Philosophy" (1914). References are given to Mysticism and Logic.

Our Knowledge of the External World (1914). Quotations and page citations are from the revised edition by George Allen and Unwin Ltd., 1949 (reprint).

"The Philosophy of Logical Atomism" (1918–19). References are to Logic and Knowledge.

Portraits from Memory and Other Essays (1956).


Principia Mathematica (with Whitehead), Vol. II (1912).

The Principles of Mathematics (1903).

The Problems of Philosophy (1912). Quotations and page citations are from the 1959 edition by Oxford University Press.

"The Relation of Sense-data to Physics" (1914). References are to Mysticism and Logic.

"Reply to Criticisms" (1944), in The Philosophy of Bertrand Russell. Edited by P.A. Schilpp.


"The Ultimate Constituents of Matter" (1915). References are to Mysticism and Logic.
CHAPTER ONE

INTRODUCTION

The aim of this thesis is to trace and examine the development of Russell's theory of perception and of the relation of perception to our knowledge of the external world during the period from 1905 to 1919. These dates, the first of which is the publication of his famous paper OD and the second of which is the publication of OP, encompass Russell's first attempt at, what David Pears calls, the reconstruction of empirical knowledge,\(^1\) the foundations of which are sense-data with which we have direct acquaintance in perception. Russell is, by his own admission, an empiricist in the tradition of Locke, Berkeley and Hume. With respect to the analysis of perception Russell agrees with these philosophers on many crucial matters, the most important of which is the view that knowledge of existence originates from sense-experience. But Russell of course differs from them as to what his theory of perception proves, that is to say, how on the basis of what is given in sense-experience we can know so much about the external world.

Russell's position in epistemology, during the stipulated period, can be called both a form of empiricism and a form of realism.\(^2\) It is a form of empiricism in that all knowledge of what exists must come directly or indirectly from experience.\(^3\) His position is a form of realism in that the object known is independent of being known; physical objects exist externally to us and independently of our sense-experience. Both these positions represent an explicit and deliberate rejection of a philosophy which he had held during his earliest years.

There is a *prima facie* conflict between Russell's empiricist task of grounding all knowledge claims in sense-data and his realist
view of an independently existing external world. Both of these are
c Constraints. On the one hand, as a good empiricist Russell cannot claim
to know any more than what he is immediately acquainted with and what he
is immediately acquainted with are nothing but his own sense-data. So
his empiricism naturally leads to sceptical solipsism. On the other
hand, his realist view of perception is the denial of scepticism. These
two opposite facts generate a serious dilemma for Russell, both sides of
which he takes into account. It seems that there is a gap between what
empiricism permits us to claim to know and the knowledge claim that
realism allows us to have. More pointedly, the gap is between perception
and physical objects. It is to resolve the dilemma between empiricism
and realism and to bridge the gap between perception and physical
objects that Russell puts all his efforts into the development of his
theory of perception during the stipulated period.

Let me say something about Russell's pre-OD philosophy for it
might help us to trace the development of his theory of perception,
drawing attention to the importance of OD. When Russell began philo-
osophizing,⁴ idealism was dominant among the Cambridge philosophers. While
a student at Cambridge Russell adopted idealism. His adoption of idea-
lism was mainly instigated by his teachers G.F. Stout and James Ward,
his friend J.E. McTaggart, and by his reading of Bradley's Appearance
and Reality⁵ and The Principles of Logic.⁶ But as Russell's own thinking
developed, he found himself in complete disagreement with the idealist
philosophy; so towards the middle of 1898 Russell rebelled against it.⁷
In fact Russell's emergence from the idealist period was quickened by
Moore who began to rebel against the idealist view which he formerly
adopted. As Russell later says, "[f]or some years I was a disciple of
Mr. Bradley, but about 1898 I changed my views, largely as a result of
arguments with G.E. Moore.⁸ I could no longer believe that knowing makes
any difference to what is known" (LA. 324). Again, "[h]e [Moore] took
the lead in rebellion, and I followed, with a sense of emancipation"
(MMD. 12; cf. PEN. 68; MPD. 12, 54). Russell describes the exhilaration
that he and Moore experienced as a result of their break with the
idealism: "With a sense of escaping from prison, we allowed ourselves to
think that grass is green, that the sun and stars would exist if no one was aware of them, and also that there is a pluralistic timeless world of Platonic ideas" (MMD. 12). Elsewhere he says, "[i]n the first exuberance of liberation, I became a naive realist and rejoiced in the thought that grass is really green, in spite of the adverse opinion of all philosophers from Locke onwards" (MPD. 61-2).

Russell's initial rebellion against idealism was so extreme that he entered into a period of "absolute realism" that ascribed reality not only to objects of the external world and universals, but even to the world of mathematical and logical entities. As he explained, "I had been a realist in the scholastic or Platonic sense; I had thought that cardinal integers, for instance, have a timeless being" (MMD. 13; see also MOP. 4). Thus Russell declared, "[w]hatever may be an object of thought, or may occur in any true or false proposition, or can be counted as one, I call a term... [E]very term has being, i.e. is in some sense" (P. Math. 43). Again, "[b]eing is that which belongs to every conceivable term, to every possible object of thought -- in short to everything that can possibly occur in any proposition, true or false, and to all such propositions themselves. Being belongs to whatever can be counted" (P. Math. 449). And again, "I thought that every word that can be used significantly must signify something, and I took this to mean that it must signify some THING" (PFM. 43). As a result of this a lot of "non-existent" and logically impossible objects (though the latter are rarely mentioned) invaded the Platonic heaven. Since we can conceive of the round square, the present King of France, the golden mountain, etc., they are terms, and since they are terms, they have being. On Russell's P. Math view, he cannot get rid of these entities. And as a result his absolute Platonic realism suffers from a threat of over population with a host of bizarre entities (PFM. 40).

However, by 1905, Russell tracked down the problem of the bizarre entities. His theory of descriptions as developed in OD began to cut the Platonic universe down to size. As to its importance Quine remarks that with OD "a reformed Russell emerges". Ramsay calls the theory of descriptions "a paradigm of philosophy" -- a model of how
the very best philosophy should be done; and Alan Wood regards it as Russell's "greatest philosophical discovery". The theory of descriptions makes it possible to deny meaningfully the existence and/or subsistence of alleged objects. In OD Russell develops two main lines of argument, one logical and the other epistemological. The first one is concerned to show the relation between meaning and denotation (that every expression means something) and the second one is concerned with establishing the epistemological principle that we have no immediate right to assume that an object (of any kind) exists unless we have immediate acquaintance with it (OD. 55-6). The concept of "acquaintance" is fundamental to his whole approach to the problem of perception and the relation of perception to physical objects.

The seeds of Russell's empiricist epistemology which was to have an enormous influence in the period studied here are found in OD which gave rise to the principle of acquaintance (hereafter referred to as PA). The PA leads in an empiricist, foundationalist direction, in that it admits as certain only those entities with which we are acquainted. Acquaintance with constituents of a proposition is a necessary condition for our ability to understand it. Every proposition must be made to refer only to objects empirically given, objects we are immediately acquainted with in sense-experience. These objects include certain observable things exhibiting certain observable qualities or stand in certain observable relations. The theory of descriptions, with its logical techniques, makes it possible to reduce all knowledge claims to claims about objects of acquaintance. The PA as developed in OD is projected (via the theory of descriptions) in his future works as an epistemological device to facilitate the grounding of all knowledge of unexperienced objects in experience or in acquaintance.

In his pre-OD writings Russell's interest in the theory of perception is not well founded. As we have noticed, before 1905 there were only a few scattered remarks on this issue in which Russell took it for granted that we directly perceive spatio-temporal objects around us. This view showed the strength of his opposition to idealism. But it was OD which marked the beginning of his serious interest in the problem of
perception. However, it was not until 1911 that Russell became explicitly concerned with the relation of perception to our knowledge of the external world.

Following the publication of *PM I*, Russell's theory of perception was beginning to evolve. His first excursion into the problem of perception is found in *PP* where he rejects naive realism and contends that we are not acquainted with spatio-temporal objects but only sense-data, "the things that are immediately known in sensation" (*PP*, 12). However, the question which most interests Russell is not how sense-data are related to the perceiver who experiences them, but how they are related to the physical objects we think we perceive. Until January 1912, Russell sponsored a representative realism according to which the relation between sense-data and physical objects is a causal one in which the effects (sense-data) represent their causes (physical objects). But only three months after the publication of *PP* on January 24, 1912 Russell developed a more sceptical position. The immediate effect of this sceptical position is evident in "On Matter", where he showed the futility of his *PP* defence of physical objects. However, in "On Matter", instead of joining with the sceptic, Russell went in a new direction to defend physical objects from the threat of scepticism. This direction is the emergence of his logical construction, the theory that physical objects are constructed out of actual and possible sense-data (sensibilia). Although the constructionist theory emerged in "On Matter", Russell fully developed it in *OKBW*, *RSDP*, *UCM* and other places.

I have now given a very brief account of the successive development of Russell's theory of perception during the period from 1905 to 1919. This thesis, while tracing the development of Russell's theory of perception, aims to show that Russell never gave up the realist theory of perception. This view agrees with what Russell himself says in his philosophical writings and also in his answer to Professor E.R. Eames' question as to whether she was "correct in ascribing to him epistemological realism, in the sense that the world is there, and real, and acts upon us in perceptions". To this question "Russell replied emphatically that he had always been a realist". I am not claiming that no change
has occurred. Rather I admit and show that in the course of development, Russell's theory of perception underwent considerable changes and modifications. What I claim is that in spite of these changes and modifications, there is throughout a continuity. One of the purposes in tracing the development of Russell's thought is to show both what changes and modifications took place and what continuity persisted.

I suggest that all the changes, both minor (i.e., within his theories of acquaintance and sense-data) and major (i.e., from explicit commitment to causal theory of perception to logical construction) that take place in his theory do not seriously alter his main philosophical position. I take all these changes as not a change of position but a modification or development within the realist position. I show that Russell remained throughout 1905 to 1919 a realist, despite the fact that he holds a constructionist view in epistemology. However, I do not mean that after 1919 Russell ceased to be a realist and/or a constructionist. I only limit my inquiry until 1919 so as to deal with Russell's theory of perception for as long as he holds a sense-datum theory. After 1919 there was a sharp transition in Russell's theory of perception. In 1919, Russell explicitly and definitely accepted neutral monism, the theory that things commonly regarded as mental and things commonly regarded as physical do not differ in respect to an intrinsic property possessed by one but not by another, but only in respect of arrangement and context. I am not sure how far Russell's neutral monism affects his realism and constructionism, but I presume not that much. But it surely affects his theory of perception in that, with the espousal of neutral monism, he had to abandon the sense-datum theory because he abandoned the relational character of sensation consisting of a subject and an object i.e., a sense-datum.

I argue that there is a consistency of purpose and direction which guided the successive changes in Russell's realism. The purpose and direction is to secure empirical knowledge from possible sceptical attack. As to the relation of perception to physical objects Russell had an unresolved tension. On the one hand, sense-data are given in sensations, and apparently we have no logical right to infer physical objects
from them. Here Russell is quite at one with the sceptic. But on the other hand, Russell became increasingly interested in both common sense and the physical sciences, especially physics. So he cannot ignore common sense and physics so easily. His aim is to show that the assertions of both common sense and physics are, when correctly understood, justified. The motive for change from PP to the constructionist view was an empirical one, in the interest of assuming no entities which are not capable of being brought back to the experiential foundation.

How far the constructionist view fulfils the task of securing empirical knowledge from sceptical attack is debatable. But I suggest that it certainly tries to mitigate scepticism by constructing physical objects out of verifiable elements. The constructionist view tries to achieve a compromise between his realism and his empiricism which on the surface seem bafflingly inconsistent with each other. In constructing physical objects Russell tries to show that our knowledge of the external world beyond the immediate perception of the moment is not only legitimate but consistent with empiricism.

This thesis is an "interpretative" thesis. Its primary objective is to interpret and to clarify the development of Russell's theory of perception during the stipulated period. There are three main tasks involved in my interpretation. First, I try to set out, as clearly as possible, what Russell says and what he means; secondly, I try to clarify any ambiguity or inconsistency in Russell's view; and thirdly, I identify any change in Russell's position and trace the reason(s) for and the consequence(s) of such changes. However, to say that it is an interpretative thesis, is not to say that it will not involve commentary and criticism, but that such considerations will be limited to the understanding and clarification of Russell's view. Whenever I quote from or refer to other philosophers I do so merely as a device of understanding, viz. to bring out some vague feature of the topic under discussion or to clear up certain misunderstandings of Russell's view.

Let me make the scope of my work a little more precise. Russell's theory of perception, as considered here, is an epistemological theory, but the theory is not strictly separated from his views on metaphysical
theories such as neutral monism and ontological theories such as logical atomism. These theories are beyond the scope of this thesis. I must also insist that this thesis concerns only Russell's theory of perception during the stipulated period and not beyond that except for occasional references.

I should also mention here that this thesis is not a "position" thesis either. It does not aim at offering and justifying a particular position about Russell's theory of perception. I try to maintain an impartial view about Russell's theory of perception. My main ideal is to allow Russell to speak for himself and to defend him from criticisms when I find that he has been misunderstood. However I have my own objections against Russell too. The areas where I mostly object to Russell are the construction of physical objects and space. I do not think that Russell is completely successful in the construction of physical objects and a six-dimensional space. But I also think that the spirit of the constructionist view, not only the success of it, should be counted as important. I do not think that Russell was basically mistaken in thinking that something like the constructionist view can give a response to the sceptical consequence of our knowledge of the external world. It seems to me that more of what Russell says is defensible than I had originally thought.

The investigation of Russell's theory of perception during the stipulated period seems to me a worthwhile undertaking for several reasons: First, Russell is often interpreted as changing his position without assigning any good reason and as a result commentators find him hardly consistent. This interpretation of Russell reflects serious misunderstandings of both the changes in his position and the importance of the changes. Russell himself was certainly aware of these misunderstandings and therefore regretfully stated that his theory of perception "is rejected as a wild paradox by philosophers of all schools". The reason for this rejection is, as Russell noticed, that they "unanimously misunderstand [his] ... theory of perception".17 I agree with Russell that his theory of perception has been widely misunderstood. I think that many of these misunderstandings are due, in large part, to a lack of a
comprehensive and detailed study of his theory. I feel that a comprehensive study of Russell's theory of perception during this important period is not only important but a necessity to do justice to Russell's epistemological views about the external world.

Secondly, there is no full length study which deals thoroughly and carefully with Russell's theory of perception during this period. There are some works which deal in part with his theory of perception; but the theory requires a comprehensive study considering its importance in Russell's epistemology. A proper understanding of Russell's theory of perception is essential to an understanding of his epistemology and his epistemology is the centre of his philosophical development. Thus reflecting upon his philosophical career and shifting interests Russell admits that "[t]here is only one constant preoccupation: I have throughout been anxious to discover how much we can be said to know and with what degree of certainty and doubtfulness" (MPD. 11; cf. also MOP. 3-4). Again, while his PP was still in the press he wrote to Ottoline Morrell: "There is one great question: can human beings know anything, and if so what and how? This question is really the most essentially philosophical of all questions".18 Not only in the stipulated period, even for the rest of his life, whenever Russell undertook epistemological enquiries, he endeavoured to confront the problem of how to know something with certainty and every time proceeds by a conventional way into the problem of perception. Considering its importance in Russell's whole philosophy, the theory of perception requires a comprehensive study.

Thirdly, and finally, Russell's unpublished manuscripts and correspondence have been made available very recently at the Russell Archives at McMaster University. Unpublished materials in the Archives help us to uncover many missing links in Russell's theory of perception during the period from 1905 to 1919. One very important paper "On Matter" allows us to uncover the missing link between the pre-constructionist and constructionist theory of perception that has never been considered. The received view about Russell's logical construction is that it emerged in 1914 in OKEW for the first time and that it grew directly out of his PP theory of perception. But a close study of his
unpublished works, supplemented by his correspondence, show that these views are mistaken. We have now conclusive evidence that the emergence of logical construction is a shift not directly from PP, but from a transitional sceptical position which Russell held for a short time immediately after the publication of PP. Sceptical doubts about the PP position had an enormous effect and had been a major impetus towards the constructionist view. At the same time, Russell's "On Matter" conclusively shows that he was a logical constructionist in 1912. Historically, "On Matter" is of special interest both for identifying the weaknesses of PP and for the emergence of the constructionist view.

I have preferred to trace the development of Russell's theory of perception topically rather than chronologically with respect to sources. That is to say, the division of chapters in this thesis does not correspond to the division of sources. The thesis is arranged in seven chapters including the Introduction. Each chapter, except chapters one and seven, is divided into sections and often sub-sections; and they all are equipped with headings giving some idea of the main topics under discussion. Within each section and sub-section (where applicable) the arrangements of material is topical rather than chronological. Since the philosophical subject-matter of various works during the stipulated period overlap to a large degree, this way of arranging materials allows me to avoid too much repetition and redundancy.
Notes to Chapter One


2. In making this statement I am not claiming that Russell's position in philosophy is not empiricist and realist beyond this period. For an all-inclusive view of Russell's empiricism and realism see E.R. Eames, *Bertrand Russell's Theory of Knowledge* (London, 1969), chapters IV and V.

3. Russell's position may well be called empiricism in some other sense or senses.


9. See also "Meinong's Theory of Complexes and Assumptions (1)", *Mind*, Vol. 13(1904), pp. 204-19, esp. 204.


References to Russell's letters to Ottoline Morrell are to microfilm copies in the Russell Archives (hereafter referred as R.A.) at McMaster University. The original letters are at the Harry Ransom Humanities Research Center, University of Texas, Austin. When a letter is dated by Russell himself the date is simply given, but when the date is taken from a postmark, the fact is signified by "pmkd.", while a date when inferred from other sources is given in square brackets. The numbers of these letters are those supplied by Ottoline Morrell and her secretary.


15. Some philosophers, such as A.J. Ayer, think that Russell becomes a neutral monist from 1914; cf. Ayer, *Russell and Moore: The Analytical Heritage* (London, 1971), p. 54. I think that Russell was not yet a neutral monist since he had not yet abandoned the relational character of sensation. A sense-datum is still the object of a two term relation of which the subject constitutes the first term.


17. B.R. to Ayer, # 710.047060, Jan. 19, 1957. A similar regretful statement is found in Russell's *MPD* (p. 16).

CHAPTER TWO

THE THEORY OF ACQUAINTANCE

2.1 The Nature of Acquaintance

In the period from 1905, when his important paper "On Denoting" appeared in *Mind*, to 1959, when his *MPD* was published, Russell attempted a reductionist analysis of empirical knowledge, the foundations of which are objects with which we have direct acquaintance. The theory of descriptions developed in *OD*, and consistently held for the rest of Russell's career, paves the way for Russell's distinction between knowledge by acquaintance and knowledge by description. The main thesis of Russell's theory of descriptions is that denoting phrases "never have any meaning in themselves but that every proposition in whose verbal expression they occur has a meaning" and are to be eliminated in an analysis of sentences in which they occur (*OD*. 43; see also *PM* I. 66; *IMP*. 170; *PLA*. 253). Accordingly, the sentences "the round square does not exist" and "the present King of France is bald" are analyzed as "it is false that there is an object x such that x is both round and square" and "there is one and only one entity x such that x is present King of France and x is bald" respectively. The theory of descriptions instructs us to translate sentences with denoting (or descriptive) phrases into sentences in which such phrases do not occur.

The theory of descriptions was originally put forward to solve the problem of analyzing certain kinds of puzzling phrases and statements. Russell found that phrases like "the round square", "the present King of France", "the unicorn", "the golden mountain", etc., present a problem in the analysis of meaning. These phrases seem to
perform, according to the superficial grammar, the same kind of role in
statements as are performed by such ordinary proper names as "Bismarck",
"Scott" and "George IV". Yet in the case of the former symbols we cannot
give their meaning by pointing to their denotations, that is to say, to
the objects to which they refer. But at the same time the sentences in
which they occur are not meaningless. Russell's theory of descriptions
has an important consequence for his well known epistemological prin-
ципle that propositions which we can understand are composed of constitu-
ents with which we are directly acquainted (OD. 56; KAKD. 206; PP. 58;
TK. 101; PLA. 202; Reply. 694; HK. 502). As Russell writes:

One interesting result of the ... theory of denot-
ing is this: when there is anything with which we
do not have immediate acquaintance, but only
definition by denoting phrases, then the proposi-
tions in which this thing is introduced by means
of a denoting phrase do not really contain this
thing as a constituent, but contain instead the
constituents expressed by the several words of the
denoting phrase. Thus in every proposition that we
can apprehend ..., all the constituents are really
entities with which we have immediate acquaintance
(OD. 55-6).

Constituents of propositions are not words but definite objects with
which we are immediately acquainted. Any putative constituent of a pro-
position which cannot be brought back to this kind of confrontation must
be known indirectly, i.e., must be known by description, and need not be
taken as constituents of the proposition.

Russell calls acquaintance a kind of knowledge, and defines it
as a direct relation between the subject and the object not necessarily
involving any intermediary process of inference or any knowledge of
truths (PP. 46). Although there are some similarities between the
ordinary use and Russell's use of the term "acquaintance"¹ it is
important to notice that Russell is using it in a technical sense. He
defines it as follows: "I say that I am acquainted with an object when
I have a direct cognitive relation to that object, i.e., when I am
directly aware of the object itself" (KAKD. 197; see also PP. 46). What
we are acquainted with is something that we have directly experienced
and not come to know second hand. But what we are acquainted with are not the things we ordinarily think we are acquainted with. "Thus in the presence of my table I am acquainted [only] with the sense-data that make up the appearance of my table [not the table itself] -- its colour, shape, hardness, smoothness, etc.; all these are things of which I am immediately conscious when I am seeing and touching my table" (PP. 46). Russell emphasizes that as soon as one becomes acquainted with something, e.g., a colour, one knows the colour "perfectly and completely" and there is no way in which one could know the colour better (PP. 47). Keeping this in mind, we see that Russell's notion of acquaintance has the following features:

2.1.1 Acquaintance is a dual relation

Acquaintance is a dual relation between a cognizing subject and an object cognized which is often represented by the schema "S -- A -- O" (TK. 38). The relation of subject and object, which Russell calls acquaintance, "is simply the converse of the relation of object and subject which constitutes presentation. That ... S has acquaintance with O is essentially the same thing as to say that O is presented to S" (KAKD. 197-8).² The subject is "mental"; the "object" may or may not be mental; but both are entities. The subject is an entity acquainted with something (an object) and the object is also an entity with which something is acquainted. But what is the nature of this entity called a "subject"? It might be a mind, a person or a Cartesian Ego. However, there is a passage in "The Nature of Sense-data -- A Reply to Dr. Dawes Hicks" which suggests that the subject may be an "act", by which Russell presumably means some entity which might be called "mental act".³ In the present context what is at stake is not the nature of the subject or of the object, but of acquaintance. Since acquaintance is a dual relation, the question arises what are the terms of this relation? Russell's answer is that they are a "subject" and an "object" whatever might be their nature.
2.1.2 Acquaintance is the simplest and most pervading aspect of experience

Russell finds it an empirical truth that the "simplest and most pervading aspect of experience" is acquaintance (TK. 5). It must be noted here that when Russell calls "acquaintance" the simplest and most pervading aspect of experience, he uses "experience" in a pre-theoretical sense (in line with the language of daily life). But soon he starts using it as equivalent to acquaintance. His discussion of how far our experience can reach is exactly the same as his investigation of the nature of objects of acquaintance. Thus he refers to the objects to which at a given moment he could, as he states, "give proper names", as "the objects of my 'awareness', the objects 'before my mind', or the objects that are within my present 'experience'" (TK. 8). However, in the third chapter of the TK ("Analysis of Experience") Russell decides to give up the word "experience" and instead wants to employ a less neutral word than "experience" and to use what he says are the synonymous words "acquaintance" and "awareness", generally the former (TK. 35). Here Russell is giving "experience" a technical use which is confined to the relational form of experience.

The reason why "experience" is a more neutral word is that the word is also used in places where the same object may be experienced by more than one person. But now Russell realizes that there are a "large number of things which only one mind can experience" (TK. 34) and he goes on to say,

[t]hus when an object \( O \) is experienced by two different persons \( A \) and \( B \), the experiencing of \( O \) by \( A \) is one fact, and the experiencing of \( O \) by \( B \) is another. The experiencing of \( O \) by \( A \) may be experienced by \( A \), and the experiencing of \( O \) by \( B \) may be experienced by \( B \), but neither can experience the other's experiencing. \( A \) can experience his experiencing of \( O \) without logically requiring any other experience; hence the fact that he experiences \( O \) cannot consist in a relation to other objects of experience, ... From these characteristics of experience, it seems an unavoidable inference that \( A \)'s experiencing of \( O \) is different from \( O \), and is in fact a complex, of which \( A \) himself, or some simpler entity bound up with \( A \),
is a constituent as well as $O$. Hence experiencing must be a relation, in which one term is the object experienced, while the other term is that which experiences ($TK$. 35).

From now on Russell employs the terms "acquaintance" and "awareness" synonymously in place of "experience". But Russell does not really give up "experience". Instead, he works through his view that "experiencing is a two-term relation; we call the relation acquaintance, and we give the name subject to anything which has acquaintance with objects" ($TK$. 44). Although Russell says that he will give up "experience", he uses all three terms, i.e., "acquaintance", "awareness" and "experience" interchangeably in the same chapter and in different places in $TK$. However, when he uses "experience" in a technical sense it conveys nothing more than acquaintance and it throws no extra light on the nature of acquaintance.

2.1.3 Acquaintance involves knowledge of things

On Russell's view acquaintance involves knowledge of things, the "sense [of 'know'] in which we know sense-data" ($PP$. 44), not knowledge of truths. My knowing the sense-data does not carry with it any belief. Russell writes that "the sense-data which make up the appearance of my table are things with which I have acquaintance, things immediately known to me just as they are" ($PP$. 47). But one may ask: why does our acquaintance not involve knowledge of truths? Russell says that acquaintance does not involve the sort of relation which constitutes judgment, but the sort which constitutes presentation. He seems to mean that

(a) my acquaintance cannot be said to be knowledge of a truth unless it involves a belief or a judgment that is true;
(b) but direct acquaintance is purely non-judgmental, because it does not carry any commitment with it;
(c) so my direct acquaintance cannot be said to be knowledge of a truth.

Russell also holds that acquaintance does not have the right form to be true or false as does judgment. Unlike judgment, which is a multi-term
relation, acquaintance is "a two-term relation in which the object can be named but not asserted", it "is inherently incapable of truth or falsehood" (RSDP. 141). But it must be pointed out here that even if acquaintance does not involve knowledge of truth, nevertheless, Russell thinks that it provides us with the basis of our knowledge of truths.

2.1.4 Acquaintance is the foundation of all knowledge

According to Russell all knowledge, whether of things or of truths, is based on knowledge by acquaintance. All knowledge of truths, according to Russell, presupposes knowledge by acquaintance. He regards acquaintance as the "direct cognitive relation" between a subject and an object without any intermediary process of inference or any knowledge of truths (PP. 46; KAKD. 197). But what Russell calls knowledge by description involves "some knowledge of truths as its source and ground" (PP. 46). He seems to suggest that since knowledge by description is ultimately reducible to knowledge by acquaintance as its foundation (PP. 58), and since knowledge by description gives knowledge of truths, the role of acquaintance, ultimately, has to be seen in connection with truth. This is, perhaps, the reason why Russell says that although acquaintance itself is not knowledge of truths, "[a]ll knowledge, both knowledge of things and knowledge of truths, rests upon acquaintance as its foundation" (PP. 48). But it should be noted here that, on Russell's view, knowledge by acquaintance is "logically independent" (PP. 46) of knowledge by description. This independence "is to be maintained", as Iglesias-Rozas has pointed out, "in order to account for the priority of meaning over truth. Meaning and truth cannot merge into each other. If they do, our capacity to understand a proposition without knowing whether it is true or false would be in jeopardy. Meaning must be prior to truth".4

2.1.5 Acquaintance is non-judgmental

A corollary of the view that acquaintance is the foundation of all knowledge is that it is non-judgmental. On Russell's view acquaintance is a cognitive relation between the subject and the object. It is
distinguished from judgment, which is also a cognitive relation between subject and objects, by the fact that it is a two-term relation and **not** a multi-term relation. This distinction is made clear in the following passage:

> There seem to me to be two main cognitive relations ... namely *presentation* (which is the same as what I call *acquaintance*), and *judgment*. These I regard as radically distinguished by the fact that presentation (or acquaintance) is a two-term relation of a subject ... to a single (simple or complex) object, while judgment is a multiple relation of a subject ... to the several objects concerned in the judgment.⁵

Russell claims that the subject can be said to be acquainted with simple or complex objects. He contends that a complex fact is known in two different ways, *viz.* by means of acquaintance and by means of judgment. As he says, "we see a *round* patch of red" and then we judge that "that patch of red is round" (*PP*. 114). While the second kind of knowledge is liable to error, since we are analyzing the complex fact into its constituent parts, the first kind is not, since acquaintance with a fact or what Russell calls "perception" does not involve such analysis. Again if we are acquainted with the fact there is no possibility of error, but of course we may think that we are acquainted with the fact (and make a judgment) when really we are not.

That there must be acquaintance with complex facts in perception is a claim that Russell makes not only in *PP* but also in other places. Thus in *PM I* (p. 43) he writes that the "complex object 'a-in-the-relation-R-to-b' may be capable of being perceived as one object" (see also *TK*. 9). However, as Wilfred Sellars reminds us,⁶ one must be careful to distinguish between acquaintance with the fact, and the judgment which accompanies it and is made true by the fact. Acquaintance with the fact has the following form

(1) acqu(S, a-in-the-relation-R-to-b)

In (1) the object of acquaintance, the fact, occurs as a *single* term, as a "single complex whole" (*PP*. 138) and "when it is perceived, it is perceived as one object" (*PM I*. 43).⁷ But judgment is a multiple rela-
tion which analyzes the fact and has the form

(2) \( \text{bel}(S, a, R, b) \)

Thus Russell says:

Suppose we first perceive the sun shining,\(^8\) which
is a complex fact, and thence proceed to make the
judgement 'the sun is shining'. In passing from
the perception to the judgement, it is necessary
to analyse the given complex fact: we have to
separate out 'the sun' and 'shining' as constitu-
ents of the fact (PP. 137).

One question may be raised: since Russell construes acquaintance
with fact as a dyadic relation, why does he not construe judgment or
belief\(^9\) in the same way, \( \text{viz} \).

(3) \( \text{bel}(S, a\text{-in-the-relation-R-to-b}) \)?

Russell's answer is that if belief were regarded as a dyadic relation, the
object of belief must have \( \text{being} \) of some kind. If it "were so regar-
ded, we should find that, like acquaintance, it would not admit of the
opposition of truth and falsehood, but would have to be always true"
(PP. 124). Now, since false beliefs are also beliefs, but there are no
false facts; belief cannot be a dyadic relation. Let us consider the
following example:

(4) Othello believes that Desdemona loves Cassio.

(4) does not have the dyadic form

(5) \( \text{bel}(\text{Othello, that Desdemona loves Cassio}) \).

The reason is that

We cannot say that this belief consists in a rela-
tion to a single object, 'Desdemona's love for
Cassio', for if there were such an object, the
belief would be true. There is in fact no such
object, and therefore Othello cannot have any
relation to such an object. Hence his belief can-
not possibly consist in a relation to this object
(PP. 124).

(4) is a multiple relation:\(^{10}\)

(6) \( \text{bel}(\text{Othello, Desdemona, loves, Cassio}) \).

In (6) Desdemona, loving and Cassio must all be terms in the relation of
belief. The relation in (6), "therefore, is a relation of four terms,
since Othello also is one of the terms of the relation" (PP. 125). The multiple relation theory of judgment is a form of the correspondence theory of truth "that truth consists in some form of correspondence between belief and fact" (PP. 121). (4) asserts the complex fact that Othello believes that Desdemona loves Cassio. This fact determines the truth or falsity of (4) as a whole. On the multiple relation theory there is no need to assume that there is a false proposition, that Desdemona loves Cassio, which is the object of Othello's belief. All we need are the individuals, Othello, Desdemona and Cassio, and the relation "loves" as Othello's belief, and the fact that Othello believes that Desdemona loves Cassio.

2.1.6 Acquaintance is non-deceptive

On Russell's view acquaintance is always non-deceptive. He says that "[w]hatever we are acquainted with must be something; we may draw wrong inferences from our acquaintance, but the acquaintance itself cannot be deceptive" (PP. 119; see also TR. 7). The non-deceptive character of acquaintance is implied by the fact that in any acquaintance relation, whatever the subject is acquainted with must be "something". This fact of there being "something" as an object of acquaintance, saves acquaintance from being deceptive. Now if we are to suppose that deceptiveness is still possible, that must belong to the subject without having any object, in which case acquaintance becomes acquaintance with nothing. So to put this suggestion is to reject it, for in every mode of acquaintance, there is "something" of which the subject is aware. Now if the presence or absence of something is to constitute the difference between truth and error, there will be no error at all in acquaintance. Whenever "we are acquainted with an object, there certainly is such an object, and the possibility of error is logically excluded" (TR. 49). Therefore, "there is no dualism [of truth and error] as regards acquaintance" (PP. 119).

One might challenge the above conclusion on the ground that the non-deceptive nature of acquaintance includes only the case of an actually existing object. In the case of the acquaintance relation "S --
A -- O", we say that there is no error in it only when O appears to S as it is (when the round table appears round). But it does not exclude the possible case in which O appears to S as other than it is (when the round table appears elliptical). So all cases of acquaintance cannot be non-deceptive. I think that this is a mistaken interpretation of the nature of acquaintance. For Russell any case of acquaintance (whether veridical or delusive) is non-deceptive. One should not over look the difference between what we are acquainted with and the description of our acquaintance. It is literally meaningless to speak of acquaintance that it is correct or incorrect. It simply occurs. As Russell says, "[f]rom the fact that presentation [acquaintance] is a two-term relation, the question of truth or error cannot arise with regard to it: in any case of presentation there is a certain relation of an act to an object, and the question whether there is such an object cannot arise". So even an illusory or hallucinatory acquaintance is non-deceptive. When the round table appears elliptical, we have a perfect acquaintance with "something" (which in this case is an elliptical sense-datum). But it is incorrect to say that the table is elliptical.

2.1.7 *If O is an object of acquaintance then O is real*

For Russell acquaintance with something implies that it is real. He offers his argument that an object of acquaintance (whether it exists, when it is a particular, or whether it subsists, when it is a universal) is real in a number of places (see PP. 45, 119; TK. 7-8, 48). However, the clearest argument is found in the following passage:

If an object is given in acquaintance, then that object has a certain relation to the subject which is acquainted with it. But this would be meaningless if there were no such object. An object of acquaintance is an object to which it is possible to give a proper name, as opposed to a description; it may become the "this" of attention. Of such an object, it is meaningless to suppose it unreal. A proper name which names nothing is not a proper name, but a meaningless noise. An acquaintance which is acquainted with nothing is not an acquaintance, but a mere absurdity (TK. 48).
Russell's argument can be formulated in the following way: if $S$ is acquainted with $O$ (where $O$ is a particular) then it follows from the fact that acquaintance is a dual relation between a subject and an object that there must be an $O$. If there is an instance of the relation of "acquaintance", i.e., if $S$ is acquainted with $O$, there must be an $O$ which is one term of the dual relation. And if $S$ were to attempt to deny $O$'s existence, it would be self-defeating.

However, one may argue that to satisfy a minimum requirement necessary for acquaintance, the cognizing subject should be acquainted with a real external object and not only a mere appearance. This suggestion seems to rule out Russell's claim for acquaintance even in dreams and hallucinations. As Russell writes:

... whatever may be the object of acquaintance, even in dreams and hallucinations, there is no error involved so long as we do not go beyond the immediate object: error can only arise when we regard the immediate object, i.e., the sense-datum, as the mark of some physical object" (PP. 110; cf. also ONTF. 156).

Now if there is any immediate object in dreams and hallucinations, it must be an "illusory given". Are we to regard acquaintance with such an "illusory given" as an instance of acquaintance with something which is real? The immediate response to such a question seems to be that we are not ready to call the object of acquaintance, in this context, real. However, as I have already indicated in 2.1.6, I still think that it is real. I have no objection to others who want to put a restriction upon the use of "acquaintance", but we should not forget that there is a very important point that Russell wants to make in defining acquaintance. The point is that we are immediately aware of something (even in dreams and hallucinations) and that so far as this awareness is concerned, there can be no mistake in it, and it is in this sense that even in dreams and hallucinations objects of acquaintance are real.

2.1.8 Acquaintance does not admit of degrees

In *OKEW* (p. 151) Russell maintains that it is a mistake to speak as if acquaintance has degrees: there is merely acquaintance and non-
acquaintance. For example, when we speak of being "better acquainted" with a person, what we actually mean is "becoming acquainted with more parts of a certain whole; but the acquaintance with each part is either complete or non-existent". It should be noted here that when Russell says that we become acquainted with more parts of "a certain whole", the whole should not be interpreted as the body of the person. The most natural whole, to give an example, would be the temporal whole composed of the person at various times.

2.1.9 Acquaintance is a form of knowledge

Acquaintance is a relation of knowing. To say that "I am acquainted with O" is to say that "I know O". As a cognitive relation acquaintance is a distinctive form of knowledge. Russell distinguishes this kind of knowledge from knowledge by description. Knowledge by acquaintance confines us to our own immediate experience whereas knowledge by description takes us beyond it. Knowledge by acquaintance "brings the object itself before the mind", whereas knowledge by description tells us that the object has such and such properties with which we are acquainted. The chief difference between these two forms of knowledge is that whereas knowledge by acquaintance is "direct" and "immediate", knowledge by description is "inferred" and therefore "indirect". However, although knowledge by acquaintance is distinguished from knowledge by description, the two are intimately related. The relation is that whatever is known to us by description is "composed wholly of constituents with which we are acquainted".

Although Russell's choice of terminology, "knowledge by acquaintance," seems to leave little doubt that he thinks that acquaintance is knowledge, in post-Russellian discussion, the question as to whether acquaintance is a distinctive form of knowledge occupies a central place. Those who rule out the claim that acquaintance is a distinctive form of knowledge take their defence from the fact that "knowledge" is generally taken in the sense of "true judgment". I believe that this is a widely held view, but it may not be historically correct. True judgment (here I am using "judgment" in its more usual
sense, not in Russell's) is no doubt recognized as one form of knowledge. But there is no reason why there should not be other forms of knowledge. In our daily life we quite consistently use "know" in the sense that "The baby knows his mother". He knows his mother not by asserting some descriptions of her, but in a direct way, and this is what we may call knowledge by acquaintance. Again, there is another kind of knowledge which is not judgmental and yet not knowledge by acquaintance. This is what Ryle calls "knowing how". Now if what Ryle calls "knowing how" is a new kind of knowledge where there is no involvement of a "that" clause, then why should we not call acquaintance a distinctive form of knowledge and let it exist side by side with judgmental knowledge?

Russell never justifies his position on the question of whether acquaintance is knowledge in the light of subsequent criticisms. But it appears that after 1918 Russell's notion of acquaintance undergoes considerable change. Although Russell does not explicitly deny that acquaintance is knowledge, such a denial is implied in his abandoning the sense-datum theory in 1919 (cf. OP; MPD. 134-5; AM. 141-2). Before he abandons the sense-datum theory, Russell regarded sense-data as the things that are known in sensation, such as colours, sounds, and smells. Sensation is the experience of being immediately acquainted with sense-data. But when the change occurs in 1919, it occurs not because Russell changes his view about what is sensed (sense-data), but because he abandons the relational character of sensation consisting of a subject and an object (sense-datum). So long Russell holds the relational character of sensation, every sensation, for him, is a cognition. As soon as he denies the relational character of sensation the distinction between sensations and sense-data breaks down. "A patch of colour is certainly not knowledge, and therefore we cannot say that pure sensation is cognition" (AM. 142, q. MPD. 136).

Now as soon as it is denied that sensation is knowledge the same is implied with regard to acquaintance. It is difficult to decide whether this should be regarded as Russell's final position. There is some indication in his later epistemology which gives the impression that
Russell calls acquaintance a distinct form of knowledge. He seems to suggest that to know how something looks is also to know something. As he says, "[t]here is a sense in which I know an experience merely because I have it".\textsuperscript{16} So acquaintance itself is knowledge and it is that kind of knowledge which is identical with having an experience. Russell also admits that although acquaintance is knowledge, it is not the important sense:

If we want to find a basis for empirical science, we cannot be content with an unverbalized awareness, but must demand sentences in which what we know is asserted. We cannot consider the epistemological problem solved if we stop short of the verbal expression of what we know.\textsuperscript{17}

But it is in \textit{IMT} that we find Russell explicitly denying that acquaintance itself is knowledge: "I prefer to use the word 'know' in a sense which implies that the knowing is different from what is known, and to accept the consequence that, as a rule, we do not know our present experiences" (\textit{IMT}. 50). However, this is a later view. During the period from 1905 to 1919 Russell certainly takes acquaintance to be a distinct form of knowledge.

2.2 Objects of Acquaintance

Although Russell inaugurated his analysis of acquaintance in \textit{OD}, he does not carry it very far in that work. He simply tells us that "objects of perception" and those of "a more abstract logical character" (presumably universals) are objects of acquaintance (\textit{OD}. 41). But in \textit{PP}, in answer to the question: "what are the objects of acquaintance?" Russell makes the following summary statement:

We have acquaintance in sensation with the data of the outer senses, and in introspection with the data of what may be called the inner sense -- thoughts, feelings, desires, etc.; we have acquaintance in memory with things which have been data either of the outer senses or of the inner sense. Further, it is probable, though not certain, that we have acquaintance with Self, as that
which is aware of things or has desires towards things.

In addition to our acquaintance with particular existing things, we also have acquaintance with what we shall call *universals*, that is to say, general ideas, such as *whiteness*, *diversity*, *brotherhood*, and so on (*PP.* 51-2)

In these two passages Russell cites examples of almost all the different kinds of objects of acquaintance. However, in addition to our acquaintance with these objects, Russell, in *TK*, introduces a new item which he calls "an abstract logical fact" or logical form with which we can have acquaintance. So the objects to which we can have a relation of acquaintance include particulars,\(^{18}\) universals, and logical forms.

### 2.2.2 Acquaintance With Particulars

**Sense-data:** The paradigm of acquaintance with particulars is acquaintance with sense-data.\(^{19}\) Russell mentions that "[w]hen we ask what are the kinds of objects with which we are acquainted, the first and most obvious example is *sense-data*" (*KAKD.* 198). In *PP*, he introduces the term "sense-data" to designate "the things that are immediately known in sensation: such things as colours, sounds, smells, hardnesses, roughnesses, and so on" (*PP.* 12). This shows that sense-data are objects of sensation. Russell wants to argue that a sense-datum, such as a red patch, is an object of acquaintance. This sense-datum is one term of the dyadic relation of acquaintance; the other term is the subject who is aware of the datum. The common factor of sense-data is what is immediately given by the senses, which is contrasted with what is inferred. The notion of the given is usually tied up with that of indubitability, that is, what is given must be limited to what we are absolutely certain of.\(^{20}\)

According to Russell sense-data are wholly *independent* of our sense-perception. The brown colour of my table lies in front of me. Its being there is no act of mine (*RSDP.* 142). Russell explicitly commits himself to saying that sense-data exist in their own right and often
talks about the "unsensed sensibilia" which have the same physical and
metaphysical status as sense-data but are not data to any subject
(RSDP. 142). However, although Russell contends that sense-data exist
independently of being perceived, it is purely on empirical grounds that
he takes them to be private entities (see infra, 3.2.5). Let us suppose
that an object \( O \) is experienced by two persons \( A \) and \( B \). The sense-data
which \( A \) and \( B \) respectively sense will be qualitatively similar but they
cannot be numerically identical. The reason seems to be that \( A \) and \( B \)
cannot simultaneously occupy the same spatial position which makes it
impossible that, in experiencing \( O \), the sense-data which they respec-
tively sense would ever be identical.

**Mental Particulars:** Russell claims that in addition to sense-data we
have acquaintance with particular thoughts and feelings by introspec-
tion. The acquaintance involved in introspection is quite different from
that involved in sensation. In the case of sensation acquaintance can be
analyzed as a relation between a subject and a sense-datum. But in the
case of introspection the object-side with which the subject is
acquainted is a self-acquainted-with-a-sense-datum. As he says:

We are not only aware of things, but we are often aware of being aware of them. When I see the sun, I am often aware of my seeing the sun; thus 'my seeing the sun' is an object with which I have acquaintance. When I desire food, I may be aware of my desire for food; thus 'my desiring food' is an object with which I am acquainted. Similarly we may be aware of our feeling pleasure or pain, and generally of the events which happen in our minds (PP. 49; see also KAKD. 199).

Acquaintance via introspection is called self-consciousness, which gives
us knowledge of mental particulars. Acquaintance with mental particulars
includes feeling pain or pleasure, desiring for food, "seeing" the sun, etc. Introspection provides us with the ground that each person has some
acquaintance with mental objects, with those that constitute or are
otherwise involved in one's own mental life, with one's own mental
states and probably with the substantial self that is the subject of
these mental states.
Self: The question of whether the subject, the Self, is an object of acquaintance is a question to which Russell devotes considerable attention. The Self, according to him, is that which is aware of things in sensation and of universals in conception; and it is also that which thinks, feels, desires, believes, etc. (PP. 48-51). The problem, then, is can it itself become an object of acquaintance? At the time Russell wrote PP he was inclined to think that the Self could be known by acquaintance in the form of introspection. He says, we are not only aware of things, but we are often aware of being aware of them. When I see the sun, I am often aware of my seeing the sun; thus 'my seeing the sun' is an object with which I have acquaintance (PP. 49; cf. KAKD. 199). But in such cases, Russell goes on to argue, "it seems plain that I am acquainted with two different things in relation to each other" (PP. 50). In the case of my seeing the sun, Russell takes one of these things to be a sense-datum, but what can the other be if not myself? Moreover, besides being acquainted with the sense-datum, I also know the truth that I am acquainted with it, and, he continues:

It is hard to see how we could know this truth, or even understand what is meant by it, unless we were acquainted with something which we call 'I'. It does not seem necessary to suppose that we are acquainted with a more or less permanent person, the same to-day as yesterday, but it does seem as though we must be acquainted with that thing, whatever its nature, which sees the sun and has acquaintance with sense-data. Thus, in some sense it would seem we must be acquainted with our Selves as opposed to our particular experiences (PP. 51).

The line of Russell's argument is something like this: we are sometimes acquainted with cases of acquaintance, i.e., with such things as "my seeing the sun". Now since all acquaintance is "a relation between the person acquainted and the object with which the person is acquainted" (PP. 50), I am acquainted with myself. But Russell does not admit it with great enthusiasm, rather he mentions that it is "hard to discover any state of mind in which I am aware of myself alone" (KAKD.
During the KAKD/PP period, Russell neither tells us that we have perfect and complete knowledge of the Self, nor that we are not acquainted with the Self. Instead he says that "complicated arguments can be adduced on either side" of the question. However, after weighing the two sides of the question he concludes that "acquaintance with ourselves seems probably to occur". But he is not sure enough to assert that "it undoubtedly does occur" (PP. 51).

By 1913, in the TK, Russell came to hold that the introspected subject is not an object of acquaintance. What he allowed, although with some hesitation, in KAKD and PP, has now, under the pressure of Hume's argument, been firmly rejected. He says, "Hume's inability to perceive himself was not peculiar, and I think most unprejudiced observers would agree with him" (TK. 36). Here Russell seems to point to Hume's well known passage: "For my part, when I enter most intimately into what I call myself, I always stumble on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I can never catch myself at any time without a perception, and never can observe any thing but the perception". In PP, Russell also expresses his doubt about the Self in terms much like Hume's:

The question whether we are also acquainted with our bare selves, as opposed to particular thoughts and feelings, is a very difficult one, ... When we try to look into ourselves we always seem to come upon some particular thought or feeling, and not upon the 'I' which has the thought or feeling (PP. 50).

But in PP, instead of ending with Hume's conclusion, Russell admitted that probably we are acquainted with ourselves. It is in the TK that Russell comes to agree with Hume that he has no perception of himself as an isolated entity. In TK, Russell not only holds that we are not acquainted with the subject as an entity, he even goes on to show that his theory of acquaintance does not imply "a direct consciousness of a bare subject" (TK. 37). By a "bare" subject or a "bare" Self (PP. 50) Russell refers to the "I", or the subject of the experience isolated from the experience which Hume has in mind. In TK Russell realizes that his theory of acquaintance does not require us to be
acquainted with a "bare" subject. Rather, the "theory maintains that the
datum when we are aware of experiencing an object \( O \) is the fact
'something is acquainted with \( O \)'. The subject appears here, not in its
individual capacity [without being in a particular state], but as an
'apparent variable'; thus such a fact may be a datum in spite of
incapacity for acquaintance with the subject" (\( TK \). 37).

Russell's final position, then, is that we are not acquainted
with the subject; and in getting to this conclusion he simply appeals
to Hume's experiment. But we find him stressing that we can be acquaint-
ed with the fact that the subject exists, i.e., "something is acquainted
with \( O \)", even "in spite of incapacity for acquaintance with the sub-
ject". In chapter VII of the \( TK \) Russell moves even further and holds
that one kind of object of acquaintance is "mental objects, which are
those of which a subject is a constituent" (\( TK \). 79). R.K. Perkins\textsuperscript{24}
finds this view of Russell's in conflict with his denial of our
acquaintance with the Self. He finds the acquaintance with the Self
rejected in chapters III and IV of the \( TK \) and again affirmed in chapter
VII. It seems that Perkins completely misunderstands Russell. I quite
agree with E.R. Eames that Russell's reason for identifying objects as
mental is not dependent on the view that a subject can be acquainted
with itself, a view which Russell rejects in the \( TK \). Rather he identi-
fied the subject as one term of the dual relation of acquaintance, the
other term of which is the object.\textsuperscript{25}

Since every case of acquaintance is a dual relation between a
subject and an object, the subject is retained somehow. But this subject
is not something of the same sort as the object. We do not know it imme-
diately, the way we know a sense-datum. Its role comes as a term of the
dual relation. However, the subject is still mental although not an
ultimate mental entity (the bare self). The mental is defined as a fact
involving acquaintance and the relation based upon it. The distinctive
characteristic of the mental is not to be found in the particulars
involved, but only in the nature of the relations between them (\( TK \). 45).

Although Russell claims that we are not acquainted with the bare
subject, we can be acquainted with an experience and in so far as we are
acquainted with such an experience, we can know the subject of our experience by description. Russell defines the "I" as the subject of present experience, "the present experience" being known by acquaintance in the following way: There is experience of an object, and experiencing of this experience. "The second experience must involve presence in the sense in which objects of sensation [which gives particulars] and perception [which gives facts] are present" (TK. 38). Let us call this sense of present experience P. The subject S' has the relation P to an object which is itself an experience which might be symbolized as "S -- A -- O". S -- A -- O is an instance of acquaintance. How the subject S' is acquainted with an instance of acquaintance is shown schematically as follows

\[ S' \rightarrow P \rightarrow (S \rightarrow A \rightarrow O) \]

The two subjects S' and S are not, in this case, numerically identical. The reason is that whereas S' is acquainted with "S -- A -- O", S is acquainted with O. One might ask how can the fact that S is acquainted with O (S -- A -- O) be itself an object of acquaintance unless its constituents are too? But for Russell "S -- A -- O" (which is a complex) can be an object of acquaintance for S' without its constituents being so. Russell holds a similar view with regards to complex sense-data: we can be acquainted with a complex sense datum without being acquainted with the constituents of the complex datum (see infra, 3.2.8). So S' is neither acquainted with S nor with O. The one "self" or "mind", if there is one, which embraces both S' and S need not "involve any identity of the two subjects" (TK. 39). On Russell's view it is not necessary to be acquainted with the bare subject to establish the thesis that acquaintance is a dual relation. Rather, experience supports the view that there are subjects and objects of acquaintance.

**Memory:** Our acquaintance with sense-data and particular thoughts and feelings is an acquaintance with objects of present experience. But Russell also claims that we have acquaintance in memory. He initially counted memory as a prime source of acquaintance. We know by acquaint-
ance things which we remember. When we remember that we have seen colours or heard noises we are immediately aware of what we remember (KARD. 198; PP. 48). Russell takes it as an obvious fact that "I am acquainted with an object even at moments when it is not actually before my mind, provided it has been before my mind, and will be again whenever occasion arises" (KARD. 198). He also refers to "something with which we are acquainted -- usually a testimony heard or read" (PP. 56). After introducing memory as a source of acquaintance it was possible for Russell without any logical difficulties to maintain, as David Pears has argued that he did, that one can have acquaintance with individuals which are not actually present provided that one has come across them in the past. As Pears writes: "A person is said to have knowledge of a thing by acquaintance if he has come across it in his experience and remembers it, or, alternatively, if he is experiencing it at the moment". Pears then adds a footnote: "Notice that Russell allows that a person may now have acquaintance with a thing because he has come across it in the past ... This vital point is often missed by students of Russell's theory of knowledge: e.g. by J.O. Urmson Philosophical Analysis, p. 86 and p. 134".

However, in a paper entitled "Russell on Acquaintance with the Past" Urmson takes issue with Pears' claim that Russell, during the period from 1905 to 1919, holds an extreme realist theory of memory -- the view, that "memory actually maintained contact with what was perceived in the past". Urmson claims that he has "positive evidence that Russell did not hold the doctrine of direct presentation of the past which Pears attributes to him" and accordingly refers to the following passages:

A name, in the narrow logical sense of a word whose meaning is a particular, can only be applied to a particular with which the speaker is acquainted, ... (PLA. 201).

It is only when you use 'this' quite strictly, to stand for an actual object of sense, that it is really a proper name (PLA. 201).

Urmson's claim is that whereas Russell wants to "keep 'this' going for
about a minute or two" (PLA. 203), Pears wishes to suggest (as Urmson claims) that "Russell can continue to apply the name 'this' to the evanescent sense-datum even after it has gone, since he will still be acquainted with it in memory and can thus continue the argument even with closed eyes".32

I think that both Urmson and Pears are partially correct in their positions. Urmson is correct with regard to Russell's theory of memory after 1913 when he abandoned his extreme realist view of memory. But his evidence is irrelevant to Russell's early theory of memory which I date from 1905 to 1913. On the other hand, Pears is correct in applying his view to Russell's 1905-1913 theory of memory. In fact, Pears has done this himself. In a paper entitled "Russell's Theories of Memory, 1912-1921"33 Pears amends certain aspects of his version of Russell's theory of memory developed in Bertrand Russell and the British Tradition in Philosophy. In this paper Pears finds his earlier interpretation incorrect in view of two of Russell's papers viz. "Sensation and Imagination" and "On the Experience of Time", both of which were published in 1915 in Monist. These papers (both of them are in TK as chapters V and VI) make it clear that Russell holds the extreme realist account of memory in connection with immediate memory which Russell calls the "specious present" (cf. TK. 66-70). But Pears still retains his claim against Urmson that Russell held an extreme realist view of remote memory before 1915, although he completely abandoned this view in PLA in 1917.34

I completely agree with Pears' revised view that during the period 1910-191335 Russell holds a realist view that we are acquainted not only with items in immediate memory, but also in remote memory. However, Russell does not hold that we are acquainted with all cases of remote memory, but only with what he calls "a genuine case of memory" (PP. 117). By "genuine case of memory" Russell means "paradigmatic memory"36 which puts one in the most direct possible relation with one's past. Russell says:

There is some danger of confusion as to the nature of memory, owing to the fact that memory of an object is apt to be accompanied by an image of the
object, and yet the image cannot be what constitutes memory. This is easily seen by merely noticing that the image is in the present, whereas what is remembered is known to be in the past. Moreover, we are certainly able to some extent to compare our image with the object remembered, so that we often know, within somewhat wide limits, how far our image is accurate; but this would be impossible, unless the object, as opposed to the image, were in some way before the mind. Thus the essence of memory is not constituted by the image, but by having immediately before the mind an object which is recognized as past (PP. 114-5, emphasis added).

In this passage, although Russell did not mention acquaintance, the phrase "immediately before the mind" leaves no doubt, as Pears suggests, about his meaning, which must be that it is acquaintance that relates the mind and the remembered object.37

In KAKD and in PP Russell relies on acquaintance with past objects not only in immediate memory but also in remote memory. But his doubt about the acquaintance with remote memory is found from May 13, when he wrote chapter IV of the TK ("Definitions and Methodological Principles in Theory of Knowledge"). One of his methodological principles is: "The possibility of error in any cognitive occurrence shows that the occurrence is not an instance of a dual relation" (TK. 49, emphasis Russell's). He soon applies this principle to remote memory: "For the present, its chief importance is negative: where error is possible, something not acquaintance or attention or any other two-term relation is involved. This applies, for instance, to the case of memory, in so far as memory is fallible" (TK. 49). From now on, in the TK, Russell poses the question as to whether we have acquaintance with the past in remote memory; and his answer is that he is inclined to think that we do not (TK. 72, 171). A more remote portion of time is more difficult to analyze "and is no doubt derivative and complicated, as well as liable to error. It does not, therefore, belong to the elementary constituents of our acquaintance with the world..." (TK. 72).

The reason for such a change of mind with respect to the range of acquaintance with the past seems to be, as Pears has suggested, that
Russell during the period 1912-1917 went too far in merging memory with perception. Russell's notion of perception inclined him to treat it as infallible, and since immediate memory is a scarcely noticeable extension of perception, it would have a claim to infallibility. Immediate memory has to be infallible in order to perform two important functions that Russell assigned to it:

(a) Russell regarded memory as the source of our understanding the concept "past". According to him, we acquire this concept through our experience of the specious present (TK. 70). A sensation occurs and then gradually dies out. But the "sound we heard a few seconds ago, but are not hearing now, may still be an object of acquaintance, but is given in a different way from that in which it was given when it was a sense-datum" (TK. 72). So we are acquainted with the sound which is literally past, and through this acquaintance we acquire the concept "past". Russell says:

No doubt, in cases of remembering something not very recent, we have often only acquaintance with an image, combined with the judgment that something like the image occurred in the past. But such memory is liable to error, and therefore does not involve perception of a fact of which "past" is a constituent. Since, however, the word "past" has significance for us, there must be perception of facts in which it occurs, and in such cases memory must be not liable to error (TK. 72, emphasis added).

(b) The other function that Russell assigns to immediate memory is that it gives "us data upon which our subsequent knowledge can be built" (TK. 73). Elsewhere he states: "If the past can never be directly experienced in memory, how, we must inquire, can it ever come to be known that the object now experienced in memory is at all similar to the past object? And if this cannot be known, the whole of our supposed knowledge of the past becomes illusory, ..." (TK. 26). If he still feels confident that the range of memory extended to the more remote past he would not have assigned the above functions to immediate memory.

These two functions, assigned to immediate memory, require that it should be as reliable as perception. And this requires that objects
in immediate memory remain objects of acquaintance. (TK. 10; see also p. 72).\footnote{42} Russell's present position is that in cases of not very recent memory, the object of acquaintance is not a past object, but rather an image which resembles, in some way, the past object, and allows us to know the object by description. To quote Russell:

In remembering, say, my breakfast this morning, I shall normally use images which are called up at will and are said to be "of" my breakfast. It might be thought that in this case the object is in the past. But this would involve confusing the image with true memory. The image is not identical with the past sense-datum which it helps me to remember; and it is only when there is such identity that the object is in the past. I think in the case of immediate memory there is such identity, but in this case the object is not an image. When we use images as an aid in remembering, we judge that the images have a resemblance, of a certain sort, to certain past sense-data, enabling us to have knowledge by description concerning those sense-data, through acquaintance with the corresponding images together with a knowledge of the correspondence (TK. 57; cf. also p. 171).

2.2.2 Acquaintance With Universals

In addition to our acquaintance with particulars, we have acquaintance with universals, that is to say, general ideas, such as whiteness, diversity, brotherhood, and so on (PP. 52). This list of examples contains two types of universals viz. those which are qualities and those which are relations.\footnote{43} Universals such as yellowness, whiteness, etc. are qualities which are exemplified by sense-data. Each sense-datum is a particular, a "this". But in each there is also "exemplified" a sensible quality which is a universal (PP. 101). We become acquainted with universals by sensing many sense-data of the same kind, and abstracting their common quality. So acquaintance with universals involves the process of abstraction. As Russell states:

When we see a white patch, we are acquainted, in the first instance, with the particular patch; but by seeing many white patches, we easily learn to
abstract the whiteness which they all have in common, and in learning to do this we are learning to be acquainted with whiteness (PP. 101; see also KAKD. 200).

This passage not only shows how the process of abstraction is involved in our acquaintance with universals, but it also indicates the fact that there is a distinction between two sorts of objects, universals and particulars; and a corresponding distinction between two sorts of acquaintance with objects. The sense in which we are acquainted with universals is essentially different from the sense in which we are acquainted with particulars (this follows from type theory also). Russell explicitly mentions this difference in KAKD (p. 200) with the qualification that we do not have "awareness of universals" in quite the same sense as we have "awareness of particulars". However, the process of abstraction implies that universals presuppose particulars.

According to Russell, then, we become acquainted with qualities, for example, by learning to abstract them from the repeated presentation of particular red, yellow, or white patches. He also claims that a similar process of learning is necessary before we are acquainted with relations. The abstraction proceeds as follows:

I see successively a number of sense-data in which one part is to the left of another; I perceive, as in the case of different white patches, that all these sense-data have something in common, and by abstraction I find that what they have in common is a certain relation between their parts, namely the relation which I call 'being to the left of'. In this way I become acquainted with the universal relation (PP. 102).

Universal relations include "up and down, before and after, resemblance, desire, awareness itself, and so on" (KAKD. 200). And in our awareness of them we are acquainted with the universal relations themselves, not with particular instances of them. Russell maintains that "we must suppose we are acquainted with the meaning of 'before', and not merely instances of it" (KAKD. 201). Morris Weitz takes this passage as a mark of Russell's change of mind from P. Math to KAKD. In P. Math (pp. 50-2) Russell holds that universal relations have no instances. Weitz
claims that in KAKD Russell "rejects this view, without offering any reason for doing so, for he is so convinced that universal relations do have instances that he devotes most of his argument to the proof that we are acquainted with universal relations themselves". However, in his "Reply to Criticism" Russell flatly denied that he had ever made such an alteration. In response to Weitz, he writes:

It is a mistake to think that I abandoned this view [that relations have no instances] in "Knowledge by Acquaintance and Knowledge by Description:" I have held it continuously since 1902. Nor is there any difference in this respect between relations and qualities. When I say "A is human" and "B is human," there is absolute identity as regards "human." One may say that A and B are instances of humanity, and, in like manner, if A differs from B and C differs from D, one may say that the two pairs (A,B) and (C,D) are instances of difference. But there are not two humanities or two differences (Reply. 684).

In this passage Russell makes two claims, a major claim that after 1902 he consistently holds that universal relations have no instances, and a minor claim that in this respect properties are like relations. I think that Russell is right, and Weitz is wrong, in his major claim. But I also think that Russell's minor claim is questionable.

Let us, first, try to establish Russell's major claim. In a paper written before 1902 Russell explicitly holds the opposite position namely that there are no universal relations but only instances of them. In this paper he asks whether the propositions

(a) A differs from B
(b) C differs from D

contain the same relations or specific relational instances of difference? If differences do not differ, then in cases of relational differences, there is always the same abstract relation holding between the terms. On the other hand, if differences do differ, relations of difference are particularized instances. Russell accepts the second alternative. The reason is:

Difference in the abstract relates nothing, but is related to differences as Point to points. The
relation of a specific difference to its terms is no part of the meaning of "A & B differ", though it is logically implied by this proposition.47

Russell applied this to all relations:

The doctrine in question may be extended to all relations. Any relation which actually relates two terms must be incapable of relating any others; thus there is only one proposition in which any specified relation relates.... 48

However, by the time Russell came to write P. Math. (1902), he rejected his "Do Differences Differ?" view and accepted the view that the same relation of difference relates all pairs of differing particulars which Griffin and Zak call "the Universal difference theory".49 Russell explicitly claims that relations do not have instances (P. Math. 50-2). A relation R is strictly the same in all propositions in which it occurs, there are no particularized instances of R, but only the universal. Russell maintains this position throughout the rest of his philosophical career. Thus just one year after the publication of P. Math. he says that "there are no such entities as particularized relations".50

The same view is found in PP where Russell says that it "will be useless to say that there is a different resemblance for each pair" (PP. 96). What Russell stresses here is that although there are resembling pairs, there are no specific (particular) instances of resemblance. Let us consider the following cases:

(1) A resembles B
(2) C resembles D
(3) E resembles F

Russell's point is that the resemblance in these three pairs is the same in each set. A resembles B in the same way in which C resembles D and E resembles F. They are not three different resemblances (cf. Reply. 684).

Russell's minor claim has to do with the instances of qualities. While defending his claim that relations are unparticularized, Russell goes on to deny that there is a difference in this respect between relations and qualities (Reply. 684). But this claim completely breaks down in the face of some of his explicit assertions in favour of particula-
rized properties. He explicitly makes this claim in *P. Math.* while contrasting verbs and adjectives (qualities). He says, "[v]erbs do not, like adjectives, have instances" (*P. Math.* 52, emphasis added). On Russell's view "adjectives ... express qualities or properties [such as redness, whiteness, etc.] of single things" whereas verbs "express relations between two or more things" (*PP.* 94). So Russell must admit that relations do not have instances, but adjectives or properties do have instances. Again, in 1913, he says, "although there is a universal which is a given shade of colour, there are also particulars which are instances of the universal, and are sense-data when that shade of colour is seen".  

Russell even adds a footnote referring to *RUP* where he claims to have settled that all universals have instances. I think that Russell is here referring to pages 110-1 of *RUP* where he claims that there are particulars and that they have qualities which have instances.  

So Russell's minor claim appears to be false, at least during the period 1902-1913. However, to make this claim partially true i.e., during the period 1913-1944, Russell has to abandon his pre-1913 view of qualities. But Russell, I think, never did write on this topic. At the same time we find no evidence against Russell's major claim. As Winslade rightly claims "at no time did Russell officially renounce the doctrine that relations are unparticularized".

Despite the disputes about instances of universals, Russell maintains that we have direct awareness of universals. "Awareness of universals is called conceiving, and a universal of which we are aware is called a concept" (*PP.* 52; *KAKD.* 200; *TK.* 101). Russell speaks here of conceiving, not of having a concept. Someone who has a concept, say, of whiteness, is one who knows what it is for a thing to be white, or what it would be for a thing to be white, as distinct from someone who is directly aware of whiteness. Having a concept is a dispositional matter rather than being a matter of direct awareness. So it seems to be that when Russell says that we have become aware of universals, he has in mind something of this sort: in being directly aware of something as being white, one is able to abstract the property whiteness and to become directly aware of it -- the property whiteness.
2.2.3 Acquaintance With Logical Forms

In addition to our acquaintance with particulars and universals, Russell, in *TK*, introduces a new type of item of acquaintance, *viz.* logical objects. In his previous writings Russell operated with the fundamental epistemological tenet that all empirical knowledge has acquaintance as its foundation. But when he came to write *TK* in 1913, Russell applies the same principle also to logical knowledge. So his investigation is concerned not only with our acquaintance with particulars and universals, but also "with the basis of acquaintance that must underlie our knowledge of logic" (*TK*. 97). And it is in "logical experience" that we are acquainted with logical objects. He maintains that "there certainly is such a thing as 'logical experience', by which I mean that kind of immediate knowledge, other than judgment, which is what enables us to understand logical terms" (*TK*. 97).

The objects with which logical experience acquaints us are logical forms. Form, according to Russell, is what is left over when the non-logical constants of a proposition have been replaced by variables. He writes:

> It is obvious, in fact, that when all the constituents of a complex have been enumerated, there remains something which may be called the "form" of the complex, which is the way in which the constituents are combined in the complex. It is such pure "forms" that occur in logic (*TK*. 98).

Pure forms are what logical terms, such as "predicates", "relations", "dual complex", "all", "some", "or", "not", etc. stand for. Forms are the way "constituents are put together". But they themselves have no constituents. A proposition such as "Socrates precedes Plato" has as its component *Socrates, Plato* and *precedes* and has the form of the dual complex "xRy". "xRy" is a logical object. But this object is not a *thing* or entity among other constituents of the proposition. Russell clearly states that "the pure form of the proposition, and the form is not a 'thing', nor another constituent along with the objects that were
previously related in that form" (TK. 98). If it were, "there would have to be a new way in which it and the ... other constituents are put together, and if we take this way as again a constituent, we find ourselves embarked on an endless regress" (TK. 98).

The introduction of logical form gives rise to some fundamental difficulties which Russell neither hides nor resolves. Some of the difficulties will be mentioned in the next section. But for the present we must note that Russell's official view of acquaintance suggests that to understand any word one must be acquainted with the object for which it stands, or at least acquainted with the properties possessed by the object for which the word stands. But what about logical words like "relation", "dual complex", "or", "all", etc. What then are the objects, for which these logical words stand, with which we have to be acquainted before we understand sentences using the words? However, Russell points out that this is a problem to be resolved by future work in TK (the parts which he never wrote), but at this moment he does not know "what the logical objects involved really are" (TK. 99). But one thing he clearly admits is that all logical words "plainly involve logical notions; and since we can use such words intelligently, we must be acquainted with the logical objects involved" (TK. 99, emphasis added).

What Russell tries to stress is that all logical terms certainly have meaning. Now the only way to know the meaning of such terms is by acquaintance. But since knowing by acquaintance is a subject-object relation, the meaning must be an "object" of some kind. That is to say, Russell argues, as he has done in his pre-TK theory of acquaintance, from the epistemological facts of our understanding the meaning of these logical terms to the ontological status of their meanings, i.e., to entities of some kind or other for which the logical terms stand.

2.3 The Principle of Acquaintance

In MPRD (p. 169), Russell writes that "I have maintained a principle, which still seems to me completely valid, to the effect that, if we can understand what a sentence means, it must be composed entirely
of words denoting things with which we are acquainted or definable in terms of such words". Russell first formulated the principle of acquaintance (PA), clearly and distinctly, as early as OD which appeared in 1905.60 Thereafter the principle, in one form or other, is repeated in many of his major works (cf. KAKD. 206; PP. 58; TK. 101; PLA. 202; Reply. 694; HK. 502). So it is indeed true that Russell can be said to "have maintained" a PA throughout the intervening years. In OD, Russell formulates the PA as follows: "in every proposition that we can apprehend (i.e. not only in those whose truth or falsehood we can judge of, but in all that we can think about), all the constituents are really entities with which we have immediate acquaintance" (OD. 56). The same principle is repeated in KAKD and the corresponding chapter in PP as follows: "Every proposition which we can understand must be composed wholly of constituents with which we are acquainted" (KAKD. 206; PP. 58, emphasis Russell's). However, there are two differences (neither of which, I believe, affects the PA) between the OD and the KAKD/PP version of the principle. The first one is that the OD version is repeated with "understand" substituted for "apprehend". And the second one is that whereas in OD the PA is stated to be the consequence of the theory of denoting (OD. 55), in the KAKD/PP it is a fundamental epistemological principle in the analysis of propositions containing descriptions. But both versions suggest that acquaintance with constituents of propositions is a necessary condition for our ability to understand them.

In the KAKD/PP period Russell no longer holds the view that there are such things as propositions. While he believes that there are such things as facts which can be described as beliefs or judgments, there are no propositions which are constituents of these facts. In any situation called believing or understanding a proposition, there is not a relation between me and a proposition, but rather a multiple relation between me and several other entities which Russell calls "constituents of propositions". However, despite Russell's abandoning the view that there are propositions, he more often uses the term "proposition", especially in connection with the PA. And in doing so he sometimes conflates a sentence (which expresses a proposition) and a proposition
(which is the meaning of the sentence). The constituents of a sentence are words whereas the constituents of a proposition are objects (particulars and universals) with the exception of logical form (as we shall see in a while). However, since there is no definitive textual evidence as to how Russell should treat "proposition", and since he sometimes uses it in places where he should use "sentence", I shall follow Russell to keep my discussion of the PA in line with him and use "proposition" instead of "sentence".

In a straightforward sense, by the PA, Russell seems to mean that in order to understand a proposition one must be acquainted with all the constituents of the proposition. He seems so confident of its validity that he hardly argues for the principle at all. Russell offers only the following defence:

The chief reason for supposing the principle true is that it seems scarcely possible to believe that we can make a judgement or entertain a supposition without knowing what it is that we are judging or supposing about (RAKD. 206).

Elsewhere, after the PA is repeated almost verbatim, there is added the following justification: "We must attach some meaning to the words we use, if we are to speak significantly and not utter mere noise; and the meaning we attach to our words must be something with which we are acquainted" (PP. 58). Russell's defence starts with the statement of a reasonable claim, namely, that we cannot understand, and therefore know, a proposition so long as we do not understand what the words in the proposition mean. The PA requires that this holds of every word in the sentence. Russell seems to imply that we cannot understand a proposition unless we are acquainted with the meaning of the words. The underlying thesis, then, in the PA, is that language gets its meaning from acquaintance.

With regard to Russell's defence of the PA Max Black comments that it is either an incorrect characterization of the relationship between a word and its meaning, or it involves a new conception of meaning by reference to which the principle is true by definition. Black writes:
One of two things must be the case. Either Russell is using the term "meaning" in one of its customary senses; in that case the argument adduced in favour of the principle is refuted quite simply by pointing out that "Attila" means a certain person with whom we are not acquainted in Russell's sense. Or, alternatively, a new sense of meaning is implicitly introduced in which only objects with which we are acquainted can be meant by words: in that case the argument is a petitio principii.62

Black himself admits that "[u]nderlying Russell's position throughout is the conviction that in all genuine knowledge or meaning there must be some ... ultimate fusion of intimacy between the knower and what is known as is provided by the notion of 'acquaintance'".63 But Black rules this out on the ground of an unsound analogy. The analogy is that "every proposition about the possession of material objects must be reducible to a proposition about contact with objects", on the ground that "it seems hardly possible to believe that we can hold an object without really being in contact with it". But it is logically impossible to have this contact except with the surface of the material objects. However, Black allows that "there might be independent grounds for supposing the relationship of meaning, unlike that of physical possession, to be necessarily direct", but at the same time he believes that this is "an abstract possibility" which "neither Russell nor anybody else has yet provided good grounds for believing it to be anything more".64

I think that Black is right in mentioning that Russell may have introduced a new sense of meaning, but I also believe that he is wrong in suggesting that this makes the PA a petitio principii. In Russell's philosophy the connection between meaning and knowing is too intimate. If a word is to have meaning for us, it must refer to some object which we know by acquaintance. But this theory of meaning is quite different from the ordinary account of how words mean. This is clearly stated in Russell's Introduction to Wittgenstein's Tractatus where he states that there are four types of problems that can be raised about language, the second of which is "the problem as to what is the relation subsisting between thoughts, words, or sentences, and that which they refer to or
What Russell characterizes here as epistemological is, in fact, ordinarily regarded as a semantical problem. Ordinarily, in the referential theory of meaning the meaning of a word is regarded as simply the object the word stands for. So "Attila" must refer to or name Attila, and the relation between them is semantical and not epistemological. But for Russell the concepts "knowing" and "meaning" are more closely related than they are ordinarily taken to be; they are, in fact inseparable. As Clack points out the fusing of these two concepts seems natural and necessary, for Russell is convinced that if we are to grasp the true meaning of a linguistic expression we must see what it comes to when it is translated in terms of objects of acquaintance.

However, Black is wrong in his assumption that the PA leads to petitio principii. Such an assumption is due to his misunderstanding of the PA. But, to some extent, Russell himself is responsible for this misunderstanding. It springs from the ambiguity of Russell's statement of the justification of the PA. To quote the statement again:

"We must attach some meaning to the words we use, if we are to speak significantly and not utter mere noise; and the meaning we attach to our words must be something with which we are acquainted" (PP. 58)

This statement seems to suggest that because the word "Attila" has meaning, we must be acquainted with Attila. But, in fact, this is not the case. The relation between the word "Attila" and its meaning, i.e., what we are acquainted with, is a complex relation. So in response to Black's criticism Russell rightly states that ""Attila" is really a description" (Reply. 693).

Coming back to the elucidation of the PA, the notion of constituents, as it occurs in the PA, is the main part of understanding the principle. The constituents are supposed to be what the proposition is about (deals with). But the phrase "constituents of proposition" is somewhat misleading. The reason is that it looks as if words are what the proposition "deals with". But this is not the case. Russell is not thinking of the words in the proposition; rather he is thinking of the
objects described by words. The constituents need not even be the denotation of our words. "The denotation", Russell says, "I believe, is not a constituent of the proposition, except in the case of proper names⁶⁸ i.e., of words which do not assign a property to an object, but merely and solely name it" (KAKD. 210-1; see also PLA. 250). The reason for this is, presumably, that "we may know the proposition even when we are not acquainted with the denotation" (KAKD. 211) and even when there is no denotation. This conclusion springs from Russell's theory of "incomplete symbols". When we apply his theory of incomplete symbols to (1) "The author of Waverley is a novelist", it apparently turns out that the actual denotation of "the author of Waverley" (i.e., Scott) does not occur in the proposition. In fact, "the author of Waverley" has a denotation. Moreover, in (2) "Scott is a novelist", "Scott" does actually denote a constituent that occurs in (2) (cf. PM I. 66).⁶⁹ Here for simplicity of exposition Russell treats "Scott" as a logically proper name, but elsewhere he treats "Scott" as a description (PLA. 200, 243).

In the above case the real puzzle is that "Scott" and "the author of Waverley" denote the same thing. Now since in (1) the denotation of "the author of Waverley" does not occur, whereas in (2) the denotation of "Scott" does occur, the propositions expressed by (1) and (2) are different. But the question is: since the truth conditions of both (1) and (2) are exactly the same, in what can this difference consist? The answer seems to be that the notion of proposition, unlike the notion of truth conditions, is, for Russell, an epistemic notion. Now if we regard the notion of proposition and constituent as the key vehicles to Russell's semantics, we can say that the denotation of "the author of Waverley", unlike that of "Scott", does not have a semantic role in Russell's theory.⁷⁰ The main feature of Russell's position seems to be that such a notion of semantic role should be epistemically constrained: something has a semantic role for a given proposition, if knowing it is necessary for understanding the proposition. Now it is easy to see why Russell says that denoting phrases or incomplete symbols do not have meaning in themselves. The reason is that knowing their denotations (when they exist) is not necessary for understanding the
propositions in which they occur. This is tantamount to saying that denotations (except in the case of logically proper names) are not genuine constituents of propositions with which we must have acquaintance.

On Russell's official view the "ultimate constituents" of a proposition are universals and particulars. "There are ... at least two sorts of objects of which we are aware, namely, particulars and universals" (KAKD. 201). Every sentence must contain at least one word which stands for a universal since all verbs have a meaning which is universal (PF. 52). According to Russell, as we have already seen, universals are either qualities or relations. And it is by truly predicating a quality of a presented object, or a relation between two or more of them, that we arrive at the basic facts upon which our empirical knowledge must be founded. He also says that there must be at least one particular: "in some way or other, a description known to be applicable to a particular must involve some reference to a particular with which we are acquainted..." (KAKD. 204). During the period 1905-1912, Russell firmly believed that "the distinction 'universal-particular' includes all objects" of which we can have acquaintance (KAKD. 201).

By May 1913, Russell came to realize that to understand a proposition it is not enough that we are acquainted with its constituents; acquaintance with form is also required. Thus in order to understand the proposition e.g., "A and B are similar", it is not enough to be acquainted with its constituents A, B and similarity. We are also required to "know what is supposed to be done with A and B and similarity, i.e., what it is for two terms to have a relation; that is, we must understand the form of the complex which must exist if the proposition is true" (TR. 116). And although Russell is not very clear about it, by the "form of the complex" he seems to mean logical objects. In our previous section, we have seen that, for Russell, form is the way in which the constituents are put together. In a rather Platonic manner of argument, Russell claims that in order to understand what we mean by "relation", i.e., xRy, we have to be acquainted with the pure form which is denoted by "xRy". Pure forms are what logical terms such as
"predicate", "relation", "dual complex", "not", "or", "some", "all", etc. stand for. Some of them are also called logical constants.

Russell not only feels that we need to be acquainted with logical forms; he even gives priority of acquaintance to "logical experience" over acquaintance as "empirical experience". As he says:

... acquaintance with logical form, whatever its ultimate analysis may be, is a primitive constituent of our experience, and is presupposed, not only in explicit knowledge of logic, but in any understanding of a proposition otherwise than by actual acquaintance with the complex whose existence it asserts (TR. 99).

But as soon as Russell introduces logical form in the TR the book faces bankruptcy. In TR, logical form is added, perhaps, to account for the fact that all judgments must have sense and to solve the "direction problem". The direction problem arises in the following way: Suppose we wish to distinguish

(3) $S$ believes that $a$ succeeds $b$

from

(4) $S$ believes that $b$ succeeds $a$

In (3) and (4) although the dyadic complexes "$a$ succeeds $b$" and "$b$ succeeds $a$" look identical in form and constituents, they are two different judgments. In (3) succeeds goes from $a$ to $b$ and in (4) it goes from $b$ to $a$. How then can we, on multiple relation theory of judgment, account for this difference? Although it appears that the form of the two complexes in (3) and (4) appears identical, it really is not. We cannot represent the logical form of both complexes by $xRy$. If we represent the complex of (3) by $xRy$, then we cannot substitute $b$ for $x$, succeeds for $R$ and $a$ for $y$ so as to yield "$b$ succeeds $a$"; the substitution must yield "$a$ succeeds $b$". In the elementary dyadic complex form tells us where to put the relating relation and thereby avoids the direction problem.

The history of introducing logical form is intended to counter Wittgenstein's criticism of Russell's multiple relation theory of judgment namely that it treats both the terms and the relating relation as on the same level. Armed with logical form Russell can analyze (3) as
(5) Bel(S, a, succeeds, b, xRy)
to be distinguished from (4) analyzed as
(6) Bel(S, b, succeeds, a, yRx)
However, as Griffin has shown, if logical forms are used in this way, they have to have constituents and their constituents should be interpreted by free variables as in (5) and (6). But the problem is that if (5) and (6) contain free variables they are not expressing genuine belief complexes at all, but open sentences. So if Russell wants to solve the direction problem this way it is only at the cost of treating logical forms as only variables and not as logical objects.

Russell himself does not distinguish between (5) and (6) in the way I have shown. Russell shows their difference by appealing to the position of their terms with respect to their relating relation (cf. *TK*. 88, 112-3, 122-3, 144-7). In S's belief that a succeeds b, succeeds is clearly an asymmetrical, and therefore a homogeneous, relation; and it produces a homogeneous complex (since a different complex results from interchanging the two terms a and b). So instead of taking "a succeeds b" as an elementary dyadic relation, Russell introduces a different complex what he calls an "associated complex" (*TK*. 145). We can specify the associated complex "a succeeds b" by specifying its constituents, its form and the position its constituents occupy in it. Now instead of introducing a homogeneous relation succeeds, we can introduce two new relations of position P₁ and P₂. These two relations specify which position the two terms a and b take in the complex. Thus we can specify the complex "a succeeds b" by saying that it is that complex α in which succeeds is the relating relation and such that
(7) a has the relation P₁ to α and b has the relation P₂ to α. The complex in (4), viz. "b succeeds a" can be specified as
(8) b has the relation P₁ to α and a has the relation P₂ to α.

The introduction of logical form brings more difficulties than it is intended to solve. The serious one, which Russell must have realized during the writing of the *TK*, is that it affects the whole acquaintance relation. Logical forms are forms of complexes. The form of a given complex, say C, shows possible ways in which constituents of C
may be put together. The form of $C$ cannot, therefore, be a constituent of $C$, for if it were, there would have to be a new way in which it and other constituents are put together, and this ultimately leads to infinite regress. Now if logical forms are really true entities then it would seem that they would have to be constituents of the complex which exhibits them. So Russell has to conclude that they are not entities. And since they are not entities they cannot be objects of acquaintance. So although Russell opens the $TK$ with the assertion that one kind of object of acquaintance is acquaintance with abstract logical facts, he has to step aside as to the nature of acquaintance we have of them. Although there are logical objects in the extended sense, they are not entities and are not constituents of the complex in which they occur. So logical acquaintance cannot be a dual relation.

After introducing logical form Russell may have thought that he had at least answered Wittgenstein's criticism of his theory of judgment. But he was wrong. Wittgenstein felt that treating logical forms as names of logical objects with which we must be acquainted is just the wrong approach. As he says:

> There is no thing which is the form of a proposition, and no name which is the name of a form. Accordingly we can also not say that a relation which in certain cases holds between things holds sometimes between forms and things. This goes against Russell's theory of judgment.

Wittgenstein, unlike Russell, thinks that there are no logical objects, so forms cannot have the status of logical objects. But it must be mentioned here that Wittgenstein is not denying that there are forms, what he is denying is that they are logical objects with which one has to be acquainted in logical experience. He writes: "Does the subject-predicate form exist? Does the relational form exist? Do any of the forms exist at all that Russell and I were always talking about? (Russell would say: 'Yes! that's self-evident! Ha!')."

Due to Wittgenstein's criticism, Russell not only changed his account of logical form after 1913, but he also abandoned the $TK$. When he came to write $OKES$ (in Sept. 1913) Russell changed his view about
logical form. In OKMW, Russell talks about forms in a way which seems clearly reminiscent of the TK:

In every proposition and in every inference there is ... a certain form, a way in which the constituents of the proposition or inference are put together. If I say, "Socrates is mortal," "Jones is angry," "The sun is hot," there is something in common in these three cases, something indicated by the word "is". What is in common is the form of the proposition, not an actual constituent... Thus form is not another constituent, but is the way the constituents are put together (OKMW. 52; cf. TK. 98).

But after he abandoned the TK, Russell never called logical form "object". He also ruled out the requirement that acquaintance with form is a precondition for understanding any atomic complex and established the independence of constituents from forms. In OKMW, he comes to assert that "[i]n pure logic, no atomic fact is ever mentioned: we confine ourselves wholly to forms, without asking ourselves what objects can fill the form" (OKMW. 63). He also says that "pure logic is independent of atomic facts ... Pure logic and atomic facts are the two poles, the wholly a priori and the wholly empirical" (OKMW. 63).79

Now since the forms are not entities, the subject cannot be acquainted with them. So all we need, in order to understand a proposition, is to be acquainted with its constituents. Here Russell is returning to his pre-TK notion of acquaintance. He explicitly mentions that "in the first acquisition of knowledge concerning atomic facts, logic is useless" (OKMW. 63, emphasis added; see also PLA. 196, 210; IMT. 66). Even when in 1937 Russell wrote a new introduction to P. Math. he admitted that logical constants "must be treated as part of the language, not as part of what the language speaks about" (P. Math. xi). And again, in NPD (p. 169) he excludes logical words as being not genuine items of a proposition with which we have to be acquainted in order to understand the proposition in which they occur.

To understand a proposition it is enough that we are acquainted with its constituents. In the PA the phrase "constituents of propositions" applies to particulars and universals which are either properties
or relations. They are, when the proposition is fully analyzed, the objects of acquaintance and are represented by simple symbols. A simple symbol is one which does not have parts that are also symbols (PLA. 244). They are unanalyzable and can be understood only in the relationship of acquaintance. Take the word "red". One cannot understand the meaning of "red" except through seeing red things (PLA. 194). Simple symbols are contrasted with complex symbols which have parts that are also symbols (PLA. 185). So they are always analyzable. When a complex symbol has parts that are also symbols, we may call it an explicit complex symbol, such as "the author of Waverley".

On Russell's view some simple symbols are, in fact, synonymous with complex symbols. So he distinguishes two types of simple symbols viz. (a) those which we have to treat as simple (unanalyzable); and (b) those which we have to treat as complex (analyzable). Examples of (a) are symbols for sensible properties of sense-data like "red", "white", "sweet", etc. and examples of (b), which we may call implicit complex symbols, will be like "table", "chair", "house", etc. It is (a), simple symbols, which constitute the vocabulary of the PA. According to Russell, simple symbols symbolize a certain kind of "simple" entity. It should be noted here that by "simple" entity or what Russell calls "simple objects" (PLA. 197-8) neither I nor Russell mean absolute simplicity without having any particular property or relation as well as being incapable of further analysis. I am using "simple" for the sake of ease of exposition. The benefit is to distinguish simple symbols and what they symbolize from implicit complex symbols and what they symbolize. Both of them symbolize different sorts of entities. Thus both "red" and "table" symbolize entities, but while the former symbolizes a "simple" entity or a basic kind of entity, the latter symbolizes a complex entity.

The most important relation between a simple symbol and what it symbolizes is "denoting". As Russell says, adjectives and verbs stand for "universals" (PP. 93; PLA. 200); or an adjective or predicate "expresses" (PP. 94; PLA. 199) or "means" (PLA. 186) or "designates" (PLA. 205) a certain property. The simple symbols and what they symbo-
lize or denote can be schematized as follows:

<table>
<thead>
<tr>
<th>Simple symbols</th>
<th>Entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper names &amp; Pronouns</td>
<td>denote</td>
</tr>
<tr>
<td>Adjectives &amp; Substantives</td>
<td>denote</td>
</tr>
<tr>
<td>Verbs &amp; Prepositions</td>
<td>denote</td>
</tr>
<tr>
<td>(PP. 93-4, PLA. 270).82</td>
<td>particulars</td>
</tr>
<tr>
<td></td>
<td>qualities</td>
</tr>
<tr>
<td></td>
<td>relations</td>
</tr>
</tbody>
</table>

Now since for Russell denotation and meaning are the same, as far as basic entities are concerned, we must be directly acquainted with the denotation of the simple symbols in order to know what those symbols mean.

When simple symbols are constituents of the proposition, we come to understand what they denote through direct acquaintance. But as regards complex symbols, Russell seems to offer an extended as well as a strict sense of the PA. The extended sense of the PA is used, mainly, in OD, KARD and PP. When Russell uses the PA in this sense the constituents are treated as simples, even when they are complex, with which he can be said to be acquainted. Thus when a proposition contains a complex symbol as a constituent, I may understand it through my acquaintance with the property which it denotes. But another person may not be acquainted with the property; so that person needs analysis to reveal the property with which that person can be acquainted. As Pears suggests:

... you may understand the word 'hexagonal' because you are acquainted with the property which it denotes; but another person might not be acquainted with the denotation of the word, and so he would have to analyze it until he reached denotations with which he was acquainted.83

The same is true about object-words like "the table". In such cases an instance of the universal feature i.e., "tableness" is, in the obvious sense sensible, and we learn the meaning of such a symbol through ostensive definition. "When the word is being first learnt," Russell says, "you associate it with an object, which is what it 'means'" (OP. 301).
Russell also suggests that we may give ostensive definitions for symbols designating relations between sensible relations (cf. PP. 102-3).

Although we learn the universal features of sensible qualities or relations by ostensive definitions, this is not the case with symbols like "unicorn", "sea-serpent", "the golden mountain". Yet we do, in fact, understand these symbols and the propositions in which they occur as constituents. Now this understanding may be considered as a fact of allowing us to say, in a different sense of "acquaintance", that we are acquainted with the corresponding properties of "being a unicorn", "being a sea-serpent", etc.84 In this sense, the fact that we understand a symbol, say, "s", counts as a sufficient condition for saying that we are acquainted with the items denoted by the symbols which define "s". Although Russell did not always use the PA in this extended sense, he did sometimes surely use it thus. For example, in his discussion of how to discover "what a proposition deals with" he says that one of the ways is "to ask ourselves what words we must understand -- in other words, what objects we must be acquainted with -- in order to see what the proposition means" (PP. 104; cf. also TK. 99). And since he has admitted earlier that all general words designate universals which are their meaning (PP. 52, 93), we may conclude that Russell suggests that to understand a complex symbol it is enough to be acquainted with the meaning of that symbol.

The extended version of the PA is also given in the IMP in the following passage:

"I met a unicorn" or "I met a sea-serpent" is a perfectly significant assertion, if we know what it would be to be a unicorn or a sea-serpent, i.e. what is the definition of these fabulous monsters. Thus it is only what we may call the concept that enters into the proposition (IMP. 168).

To understand the proposition (9) "I met a unicorn", it is not required, of course, that I should really know the object (denotational sense) of which the proposition is about. I may even be completely ignorant of it, and still understand (9) perfectly. All that I need is a clear conception of what it means to say that the proposition is about a cer-
tain object; otherwise I would not understand it. In this case the actual constituents of the proposition expressed may be taken to be qualities which are possessed by the apparent constituent. Now since Russell holds that the constituents of propositions must be objects of acquaintance, it is perfectly reasonable to conclude that concepts or properties like being a unicorn (whose corresponding symbol I understand in (9)) are properties with which I may be acquainted.85

There is some indication that sometimes Russell seems to propound a stronger claim in the PA according to which the constituents of the proposition are the meanings of simple symbols. In that case the PA extends to the meaning of proper names and denoting expressions, and the only way to reach them is to take the analysis as far as it is humanly possible to take it. A name is a "simple symbol, directly designating an individual which is its meaning" (IMP. 174). Russell finds that the only words which function this way are the demonstratives "this" and "that", for they are only the words which can be used to designate an object in a direct manner. When the word "this" is applied to a sense-datum, it is a logically proper name (KAKD. 211; TK. 39; PLA. 201), and its denotation, in this case, must exist with an intrinsic nature of its own. Russell calls the denotation of a logically proper name a "particular" (PLA. 201). And to understand the name of a particular the subject must be acquainted with the particular. "When you are acquainted with the particular, you have a full, adequate, and complete understanding of the name, and no further information is required" (PLA. 202). Now since the meaning of a name is what the name denotes, it follows that to understand a name we must be acquainted with what the name denotes. "To understand a name", Russell claims, "you must be acquainted with the particular of which it is a name, and you must know that it is the name of that particular" (PLA. 205). Unless a name names a particular, it is not a name but a mere noise (PLA. 187).

One of the consequences of Russell's PA, in the strict sense, is that ordinary proper names such as "Socrates", "Plato", "Scott", etc. cannot be said to function as logically proper names. The reason is
that such names do not designate entities with which we are acquainted. Russell says:

We are not acquainted with Socrates, and therefore cannot name him. When we use the word 'Socrates', we are really using a description. Our thought may be rendered by some such phrase as, 'The Master of Plato', or 'The philosopher who drank the hemlock', or 'The person whom logicians assert to be mortal', but we certainly do not use the name as a name in the proper sense of the word (PLA. 201).

According to him, physical-object words or ordinary proper names are "abbreviations for descriptions" (PLA. 200) or "truncated or telescoped descriptions" (PLA. 243). But this view seems to go against Russell's previous works, especially in PP, where he seems to suggest that it would be at least theoretically possible to be acquainted with objects designated by ordinary proper names. In one place he implies that it would be possible "to be acquainted with the Emperor of China" although, as a matter of fact, he is not (cf. PP. 44-5). He derives this conclusion from "other people's acquaintance with him" (PP. 45). And again while describing knowledge by description he says:

... when we are acquainted with an object which is the so-and-so, we know that the so-and-so exists; but we may know that the so-and-so exists when we are not acquainted with any object which we know to be the so-and-so, and even when we are not acquainted with any object which, in fact, is the so-and-so (PP. 54).

It appears, then, that the extended version of the PA cannot be reconciled with the strict requirement of the PA which suggests that under no circumstances could Russell be acquainted with the Emperor of China, or the so-and-so, because they are not the same kind of entity as those of which knowledge by acquaintance is possible. In the stricter sense, the only person who might conceivably be acquainted with a person is the person (subject) himself or herself. Russell takes a person as having the same status as physical objects. And the PA, in the strict sense, demands that all words which are intelligible to us must either designate objects of acquaintance or be analyzed in terms of such
objects. Consequently, the denotations of ordinary proper names and physical-object symbols (which I call implicitly complex symbols) cannot be objects of acquaintance, objects immediately presented to sense perception; but ordinary proper names and physical-object symbols must be analyzed into simple symbols which name (denote) objects (entities) with which we are acquainted.

Russell's reason for offering a strict PA is to create a logically perfect language. Russell believes that in his logically perfect language simple symbols will stand for "simple" entities, and for every simple object there will be a simple expression which stands for it (PLA. 197). These "simple" entities are the atoms of Russell's logical atomism. Some of these atoms are called "particulars" such as patches of colour, sounds and other momentary objects and some of them are called properties or relations (PLA. 179). So the particular atoms are sense-data and the universal atoms are properties and relations. These match with Russell's objects of acquaintance, that sense-data and their properties and relations are genuine entities in acquaintance. In a logically perfect language all words, in the last residue in analysis, must match particulars and universals. Such an analysis is required since much of the language we use to describe the world is intrinsically misleading with respect to the kinds of things there are. In a logically perfect language all complex symbols must ultimately be analyzed into symbols which, in fact, do denote "simple" entities with which we have to be acquainted if we are to understand the proposition in which they occur. Let us consider the implicit complex symbol "table". In order to understand this symbol (which does not denote a "simple" entity) or in order to understand the proposition (10) "The table before me is brown", in which it occurs, it is necessary to analyze it in terms of other simple symbols which themselves denote "simple" entities. The only "simple" entities with which we are ever acquainted are sense-data, sense qualities and relations between sense-data. The "table" denotes none of them. So it must be analyzed before it is understood. Now since the "table" does not denote a sense-datum, a quality or a relation with which we are directly acquainted it must be analyzed in terms of other
symbols which ultimately do denote "simple" entities with which we are acquainted. It must be mentioned here that the reason why we cannot be acquainted with a table is not because it is complex, but because the relativity of perception shows that it is always sense-data and never physical objects that are directly perceptible. Russell maintains that whenever we concentrate our attention on a table what we find is: "To the eye it is oblong, brown and shiny, to the touch it is smooth and cool and hard; when I tap it, it gives out a wooden sound" (PP. 8). All these are immediately known in sensation. But the table, if any, is never immediately known to us in sensation (PP. 11).

The most striking and bizarre consequence of Russell's strict PA is that each person's knowledge of the physical world must be necessarily restricted to that person's sense-data. And as a result his own complete analysis of any proposition would be necessarily different from other people's analysis of the same proposition. Russell himself admitted that the vocabularies of the logically perfect language "would be very largely private to one speaker" (PLA. 198). This is a "startling conclusion". If it is so, how is communication possible? As Black suggests, with such a language the "proposition understood by the hearer would not ... be the proposition intended by the speaker;... and communication would be possible only by the grace of some kind of pre-established speaker-hearer ambiguity in virtue of which what was a logically proper name for the one functioned as a description for the other". This objection is crucial for the PA since the essence of language is to provide the means of communication. The impossibility of referring to a common world within Russell's logically perfect language makes it impossible to use this language for the purpose of communication.

However, the interesting thing is that in Russell's view it is not necessary to be acquainted with all the constituents (in complete analysis) of a proposition in order to understand it. What Russell seems to suggest is that if a person wants to understand the complex analysis which he applies to his logically perfect language, then the person needs acquaintance with all its constituents. Such a language would be a
great help in our thinking about the logical structure of the facts asserted or denied. It can only be used for the purpose of "logical dissection" (MPD. 224). The language of Principia Mathematica is intended to serve this purpose. But such a logically perfect language has nothing to do with the social or pragmatic function of language. Russell "never thought that such a language would be suitable for the purposes of daily life" (MPD. 165; see also p. 170; PLA. 198). It is even possible that complexes are capable of analysis ad infinitum so that one never reaches the simple (PLA. 202; MPD. 222). In our daily life we are interested in the social and pragmatic function of language where language is not subject to philosophical scrutiny but simply used.\(^9\) In his reply to Black's objection Russell clearly states that he has never "intended to urge seriously that such a language should be created, except in certain fields and for certain problems" (Reply. 693-4). So it becomes clear that since a logically perfect language is not designed for the purpose of communication neither Ayer's nor Black's objection is as damaging as it appears to be.

But still Russell has to show how we can make the PA consistent with the social and pragmatic function of language. After all, one might ask, how does the language fulfil its function of communication if all its speakers always mean different things by the words they use? It is true, Russell must admit, that no meaning given by one individual would be identical with a meaning given by another individual; but that does not affect communication. Russell explicitly admits that common words and ordinary proper names are really descriptions, and that "the description required to express the thought will vary for different people, or for the same person at different times" (PP. 54). That common words and ordinary proper names are to be treated as definite descriptions specifies that there will always be some difference however slight between the descriptions given by two speakers. It also specifies that communication does not depend upon the identity of meaning. This is quite a concession, but unless Russell makes this concession the PA would not be consistent with the social and pragmatic function of language.
It now becomes clear that Russell does not suggest that in order to understand a proposition one needs to be acquainted with all its constituents in the strict sense. If a proposition contains a complex symbol one may be able to understand it without even knowing what its complex analysis is. Even while propounding a stricter PA in PLA, that all the items mentioned in the analysis of a proposition must be picked out by logically proper names, Russell relaxed this requirement and allowed them to be picked out by definite descriptions (PLA. 241-54). This makes the PA plausible but Russell seems to throw away its advantages with the claim that sense-data are the only particulars known in acquaintance; physical objects and other minds are not so known (KAKD. 216-7; PP. 52). Only those symbols whose corresponding properties are exemplified by objects are known by acquaintance. This includes quality-symbols like "red", "brown", "cold", "hot", etc. and relation-symbols like "to the left of", "similar to", etc. This implies that no symbol is known by perceptual acquaintance unless it designates a sensible property of a sense-datum. Now since the properties of object-symbols, such as, "table", "chair", "house", "tree" and the rest are not supposed to be applicable to sense-data, but to physical objects, they are not known by acquaintance.

Russell maintains that the properties of being a table, a chair and so on are not to be taken as properties exemplified by objects known by acquaintance. Rather, they should be taken as properties of things bearing a certain relation to sense-data. Therefore, I cannot know the table by acquaintance and consequently, I cannot claim to be acquainted with all the properties of the proposition (10) "The table before me is brown". How, then, do I know about the table? Russell's answer is that I know it by description. As early as OD, Russell claims that the object of which I have no acquaintance is intelligible only in so far as it is reducible to knowledge by acquaintance (OD. 55-6). In the case of my knowing the table, I know the table without being acquainted with the table itself. We know that the table has a particular relation to a table-like sense-datum with which I am acquainted. The PA, which Russell claims to "have maintained" throughout the years between 1905-1959, has
to be understood in this sense. So the real meaning of (10) would be something like

(11) There is an x such that x has a relation R to the table-like sense-datum with which I am now acquainted, and x is brown.

In (10), "table" is not used as a name for a particular, but a variable is involved. Now since (10) involves a definite description about the table and is taken over by (11), i.e., by quantification with a variable that takes all particulars as its values, Sellars argues that Russell's PA should require that in order to understand the original proposition about the table I must somehow be acquainted with everything, since everything is in the domain of quantification. So Sellars concludes:

Since it would entail that in some global sense we are acquainted with items which far transcend in number the items with which, on any occasion, we are severally acquainted, it would raise serious problems for the whole idea of acquaintance. If, as Quine argues, bound variables are the bearers of reference or, to use Russell's term, denotation, it would be difficult for Russell to avoid this consequence. Russell never seems to have seen this problem -- at least in these terms.91

It is not true that Russell did not see the problem of variables. As soon as his OD was published in 1905, Moore, in a letter, first raised the problem about variables:

I was very interested in your article in 'Mind', and ended by accepting your main conclusions (if I understand them) though at first I was strongly opposed to one of them. What I should chiefly like explained is this. You say 'all the constituents of propositions we apprehend are entities with which we have immediate acquaintance'. Have we, then, immediate acquaintance with the variable? and what sort of an entity is it?92

Two days later, Russell replied:

I am glad you agreed to my main contentions in the article on Denoting. I admit that the question you raise about the variable is puzzling, as are all questions about it. The view I usually incline to is that we have immediate acquaintance with the
variable, but it is not an entity. Then at other times I think it is an entity, but an undeter-
mine one. In the former view, there is still a problem of meaning & denotation as regards the
variable itself. I only profess to reduce the problem of denoting to the problem of the vari-
able. This latter is horribly difficult, & there seems equally strong objections to all the views I
have been able to think of.93

Given the PA, the question whether we are acquainted with variables be-
comes a natural one and Russell's response to Moore certainly recognizes
the problems associated with variables.94

However, Sellars' objection is not justified. It would be justi-
fied if a variable of quantification were a proper name of its value5, which it is not, since the denotation, according to Russell, is not a constituent of a proposition except in the case of proper names. As Russell says:

... propositions of the form "the entity having the property \( \phi \) has the property \( \psi \)" do not contain as constituents the entity \( x \) which in fact is the entity having the property \( \phi \) (supposing there is such an entity), and may be known when we do not know what entity is the entity having the property \( \phi \).95

The use of a quantified variable does not put its values in a proposi-
tion and does not, therefore, presuppose our acquaintance with its values. So we need not be acquainted with the value of the variable, i.e., with denotation. This is why, I think, Russell takes "variables as fundamental" (OD. 42). What Sellars can claim is that we need to be able to understand the role of the variable in (11) in a way that satisfies the PA. In such a claim Russell has a ready-made answer that "only the concept of denotation" not the denotation itself, "will be represented by a variable" (KAKD. 214, emphasis added). When we say "\( \phi x \) is a proposition" what we mean is that there is "something which is true for every possible value of \( x \), though we do not decide what value \( x \) is to have" (PM I. 40).96 For Russell quantified variables are our refuge only where we are hindered by lack of acquaintance in the strict sense. So
proposition (10) in the ultimate analysis, is found to be composed wholly of constituents with which I am acquainted.

From what has been discussed let us draw the following main points:

(12) Any proposition I understand must be composed wholly of constituents (objects) with which I am acquainted.

(13) The constituents are particulars and universals i.e., properties and relations.

(14) Any sentence which contains a complex symbol is, in principle, translatable into another sentence every constituent of which is used to indicate an object of acquaintance i.e., a sense-datum or a universal.

(15) Therefore, I must have acquaintance with all the constituents of a proposition I understand.
Notes to Chapter Two

1. In our everyday discourse we talk of being acquainted with people, places, with socio-cultural facts and with many different things which we have personally encountered. Russell's usage and the ordinary usage of "acquaintance" appear similar in his introduction of "knowledge by acquaintance" and "knowledge by description", that is to say, knowing a person or a place and knowing something about that person or place. For example Russell says that we may be acquainted with the candidate who will get most votes in the election although we do not know who will get most votes, and therefore, do not know him as that man (KAKD. 202; PP. 53), and "I have not the honour to be acquainted with the Emperor of China, but I truly judge that he exists" (PP. 44). Again while explaining the meaning of "knowledge by acquaintance" and "knowledge by description" Russell contrasts the acquaintance with Bismark of one who actually met Bismark and the knowledge of those who, born after his death, have no such acquaintance with him (PP. 56). However, Russell's own fully developed view on this issue is that no one, with the possible exception of Bismark himself, could ever be acquainted with Bismark (PP. 54).

2. See also Russell's "The Nature of Sense-data -- A Reply to Dr. Dawes Hicks", Mind, Vol. 22(1913), p. 76. Russell prefers the term "acquaintance" to "presentation" (cf. KAKD. 198).

3. Russell, together with Moore, accepted the act-object distinction from the time of his breaking away from the idealists and preserved it until 1919. When he no longer holds this distinction he still admits: "Many analytic psychologists -- Meinong, for example -- distinguish three elements in a presentation, namely, the act (or subject), the content, and the object. Realists such as Dr. Moore and myself have been in the habit of rejecting the content, while retaining the act and the object" (OP. 305). See also G.E. Moore, "The Subject-Matter of Psychology", PAS, Vol. 10 (1909-1910), pp. 36-62.

5. "The Nature of Sense-data -- A Reply to Dr. Dawes Hicks", p. 76. See also PP. 46; TK. 5. In this passage there is a discrepancy: Russell says that acquaintance is the same relation as presentation. But elsewhere, he says that acquaintance is simply the converse of the relation of presentation (KAKD. 197). However, I think that the KAKD characterization is correct whereas the characterization in the quoted passage should be considered as a careless formulation.


7. After 1912 Russell no longer considers facts or complex objects as objects of acquaintance. They become objects of perception (cf. TK. 37; RSDP. 141). For details on this point see infra, 3.4.

8. Here and in various other places of PP and other works Russell uses physical-object expressions where, strictly speaking, he is only allowed to use sense-data expressions. Russell does this, I believe, only for simplicity of exposition. What he actually means here is the sense-data associated with the sun, not the sun itself, that is to say we can be acquainted with the sense datum representing the sun.

9. Russell uses "belief" and "judgment" synonymously (cf. ONTF. 148n.).


11. "The Nature of Sense-data -- A Reply to Dr. Dawes Hicks", p. 76. See also RSDP. 141. Russell does not always seem to be clear whether he is saying, "it is not significant to apply truth and error to acquaintance" or whether he is saying "acquaintance is never erroneous". It seems that the former is what he should say and that it implies the latter in a certain sense, i.e., when the latter means "it is not significant to call acquaintance
erroneous" -- but, then, it is not significant to call acquaintance true either.

12. See also ibid. pp. 76-7.


14. Paul Hayner in his paper entitled "Knowledge by Acquaintance" has defended Russell's view that knowledge by acquaintance is a distinctive form of knowledge. He cites from Plato, Aristotle down to modern philosophers to show that acquaintance is often regarded as a more fundamental form of knowledge than judgmental knowledge.

15. See his The Concept of Mind (Middlesex, 1968), pp. 26-60.


17. Ibid.

18. It should be pointed out here that as to the question of the range of particulars Russell held different opinions at different times. The most considerable revision occurred in TK where our own mind and remote past particulars got excluded from the list.

19. Here I am assuming that the nature of sense-data is clear. However, in my next chapter the sense-datum theory will be discussed in detail.

21. R.M. Chisholm suggests that by "I am directly aware of myself alone" Russell means the same as "I am directly aware of myself and not directly aware of any other individual thing". See his "On the Nature of Acquaintance: A Discussion of Russell's Theory of Knowledge", G. Makhnikian (ed.), Bertrand Russell's Philosophy, p. 51. I think that this reading is too restrictive. I would take it that Russell finds it hard to think of the Self per se as distinct from the self up to some activity (à la Hume).

22. In KAKD Russell first argues that it "is difficult, but probably not impossible, to account for plain facts if we assume that we do not have acquaintance with ourselves" (KAKD, 199). But he leaves the question open. However, a few pages later (on p. 211) he counts as strictly proper names of particulars only the words "I" and "this". Again, in 1917, Russell added a footnote to exclude "I" (KAKD, 211n.).

23. Hume, A Treatise of Human Nature, p. 252. Hume fails to find an entity which has perception. Sellars thinks (op. cit. p. 61n.) that Hume sees no need to posit a term, believing that it makes sense to speak of perceptions without a perceiving subject. However, I do not think that in the quoted passage or elsewhere in the Treatise Hume had this in mind. He obviously refers to the sort of "Self", the isolated entity, with which, according to Russell (in TR) we have no acquaintance.


26. It is not quite clear what it is that Russell is referring to here. The object which is supposed to appear before the mind cannot be the physical object since I can never be acquainted with it. Nor can it be the sense-datum since sense-data are by definition data of present experiences. Presumably what Russell means here is the memory image in which the real object itself (as represented by sense-data), which was perceived in the past, appears before the mind. This is an unrestricted acceptance of memory objects in acquaintance. But the problem with this view is that the real object, the image of which appears before the mind, may no longer exist at such time as it is claimed to be before the mind. How then can memory help us with our knowledge of the external world? We shall see that in his post-KAKD/PP theory of
memory Russell is careful to limit acquaintance with past objects to only those in immediate memory.

27. See Pears' Bertrand Russell and the British Tradition in Philosophy, pp. 71, 92-3, 179-82.

28. Ibid., p. 71n.


32. Urmson, ibid., p. 513. Urmson also refers to a chapter on memory from AW.

33. Published in G. Nakhnikian (ed.), Bertrand Russell's Philosophy, pp. 117-37.


35. Pears dates this period from 1905 to 1915. But I think that the correct period is 1905 to 1913. In May 1913, when Russell came to write the TK, he no longer relied on acquaintance with past objects in remote memory, cf. TK, 72, 171. Elsewhere Russell explicitly says that remote memory does not "consist in acquaintance with a past object. But ... immediate memory does", 'The Reality of Objects', unpublished notes, [notes on logic, sense-data, etc.], [1913], R.A. file # 220.011390. It is not definitely known when "The Reality of Objects" was written. However, since the subject-matter of its notes fits chapters IV to VI of the TK, I suggest that it was written some time around at the same time (middle of May, 1913) when he wrote these chapters.


37. Ibid.

38. See Pears' "Russell's Theories of Memory 1912-1921", pp. 117-37.

40. To be consistent, Russell must mean by "experiencing the past in memory" immediate memory.

41. Pears, "Russell's Theories of Memory 1912-1921", p. 119.

42. In a review of May Sinclair's A Defence of Idealism: Some Questions and Conclusions Russell points out that memory gives us "immediate knowledge" concerning the past. See The Nation, Sept. 8, 1917, p. 590. However, the context makes it a weak passage to rely on and conclude that Russell reverted to his KAKD/PP views about the range of acquaintance with past object. So I think that The Nation passage should be taken as "immediate memory gives us 'immediate knowledge' concerning the past".

43. In TK (p. 81) Russell calls them predicates and relations.


45. Ibid.

46. "Do Differences Differ?", unpublished manuscript, R.A. file # 220.010870. The date of this paper is not known. R.A. dates this paper in 1900. On the other hand, Nicholas Griffin and Gad Zak suggest that it must have been written between 1899-1903. See their "Russell on Specific and Universal Relation: The Principles of Mathematics, § 55", History and Philosophy of Logic, Vol. 3 (1982), p. 56n. However, I think that it must have been written between 1899 and May 6, 1902. On May 6, 1902, Russell officially abandoned his "Do Differences Differ?" view about relations. On May 7, 1902, Russell wrote to Alys, his first wife, that on 6th May he had finished "a chapter of 21 pages" of P. Math. This is chapter IV of P. Math. which occupies folios 82-102 of the manuscript (compare the manuscript of P. Math. in R.A. file # 230.030350-F2). In this chapter Russell completely abandons his "Do Differences Differ?" view with regard to the status of universal relations.

47. Ibid., f. 5.


49. See Griffin and Zak, op cit. p. 56.

50. "Meinong's Theory of Complexes and Assumptions (II)", Mind, Vol. 13 (1904), p. 345. In a manuscript entitled "On Meaning and Denotation" ([1904], R.A. file # 220.010980, F1, f. 22), written in
the same period Russell seems to revert to his "Do Differences Differ?" view by denying that relations are unparticularized. But this tendency should not be taken too seriously, since in another manuscript of the same period (cf. "Dependent variables and denotation", R.A. file # 230.030960, f. 5) Russell restates his claim that there is no particularized relation.

51. "The Nature of Sense-data -- A Reply to Dr. Dawes Hicks", p. 80, emphasis added.

52. Here, since Russell gives example of particulars having qualities like redness which have instances, we can rule out the case of relations having particular instances.


55. Nicholas Griffin in his paper entitled "Russell on the nature of Logic (1903-1913)", p. 152, suggests that the objects with which logical experience acquaints us are of three types: viz. (1) logical forms, (2) logical connectives, and (3) logical categories. However, it seems to me that for Russell they are not three different types of objects, rather all belong to one type, viz. logical form (they may be called three different types of logical forms). And it is our acquaintance with logical forms that helps us to understand such logical words as "predicate", "relation", "dual complex", "all", "some", etc. (cf. TK. 101).


57. "What is Logic?", f.2. See also TK. 98.


59. In a letter to Ottoline Morrell Russell mentioned, "I have finished acquaintance with universals and must now tackle acquaintance with logical form, which is difficult", B.R. to O.M. letter # 784, pmkd. May 23, 1913, emphasis added.
Although the PA is explicitly formulated in OD, it is also found in an unpublished manuscript entitled "Points about Denoting", R.A. file # 220.010960, f. 6. James Cappio suggests that the PA is also presupposed even in *P. Math* (ch. IV). For details see his "Russell's Philosophical Development", *Synthese*, Vol. 46(1981), pp. 185-205.

These two passages suggest that Russell's thesis in the PA is both *epistemological* and *semantical*.

Max Black, "Russell's Philosophy of Language", P.A. Schilpp (ed.), *The Philosophy of Bertrand Russell*, p. 249.

*Ibid*.


Here Russell means logically proper names. A logically proper name is one which is said to have "a meaning by itself, without the need of any context" and it directly represents an object (*PM* I. 66; cf. also *IMP* 174). Russell contrasts a logically proper name with an ordinary proper name which "is merely a noise or shape conventionally used to designate a certain person; it gives us no information about that person and has nothing that can be called meaning as opposed to denotation" (*KAKD*. 212).

This view is also explicitly expressed in "Points about Denoting" (f. 3). Suppose that the phrase "Smith's wife" denotes Triphena. Then in the sentence "Smith's wife has blue eyes" we should say that "Smith & wife & the meaning (not denotation) of 'Smith's wife' are constituents of the total meaning, but none of them are constituents of the denotation, whereas Triphena herself is a constituent of the denotation [of the sentence 'Triphena has blue eyes']".

71. The phrase is borrowed from Griffin, "Russell's Multiple Relation Theory of Judgment", p. 222. See also his "Wittgenstein's criticism of Russell's theory of judgment", p. 135.


74. Russell's apparent optimism is expressed in his letter to O.M. "Wittgenstein came to see me last night with a refutation of the theory of judgment I used to hold. He was right, but I think the correction required is not very serious. I have to make my mind within a week as I shall soon reach judgment" (B.R. to O.M. letter # 782, pmkd. May 21, 1913, emphasis added). And Russell tried to correct his theory of judgment by introducing logical form.


76. Cf. Ibid., p. 96.

77. Ibid., 3.9.14, pp. 2e-3e.

78. OKew is a collection of Russell's 8 lectures delivered as Lowell Lectures in Boston in March and April, 1914. However, the first draft was finished by 25th Sept. 1913, cf. TK. liv.

79. The view that logical propositions are such as can be known a priori without study of the actual world is maintained in PLA. 238 and IMP. 204.

80. When Russell says that the symbol "red" cannot be understood except by seeing red things, he does not mean that "red" cannot be defined in some other way. What he means is that it will not do to say that instead of looking at red things one can understand "red" by defining "red" as "the colour with the greatest wave length". This is just a true description, which does not convey the actual meaning of "red". So in the sense of analysis one cannot define "red" (PLA. 195).
81. Here "simple" entities include both particulars and universals. In my next chapter (esp. 3.4), when I shall confine my discussion to sense-data I shall use "particulars" instead of "simple" entities.


85. Ibid. p. 103.

86. The descriptive theory of names would still be useful to handle so called *vacuous* names such as Pegasus.


95. Russell, "The Nature of Sense-data -- A Reply to Dr. Dawes Hicks", p. 81.

96. See also "The Paradox of the Liar", 1906, unpublished manuscript, R.A. file # 220.010930, F3, f. 106.
CHAPTER THREE
THE DOCTRINE OF SENSE-DATA

3.1 Why Introduce Sense-data?

Russell's notion of acquaintance is fundamental to his whole approach to the problem of perception and its relation to the external world. In KRAK (p. 206) Russell mentions that he has adopted the PA as the "fundamental epistemological" guide for the analysis of propositions. But in KRAK Russell has not provided an explicit answer to the question as to why he adopts the PA as an epistemological guide. However, the reason, which he made clear in PP, is his desire to establish some kind of secure foundation for empirical knowledge, to found our knowledge of the external world upon those things of which we have absolutely certain knowledge. The search for such a foundation on which to base empirical knowledge gives rise to Russell's theory of sense-data. He certainly thought that the sense-datum provides a rock-bottom level of certainty on which to anchor empirical knowledge. But how can we get at the sense-data?

In PP (p. 7), Russell starts off with the question: "Is there any knowledge in the world which is so certain that no reasonable man could doubt it?" This quest for certainty is as old as philosophy itself and it raises the questions of just what kind of evidence we have for our empirical knowledge and what knowledge we have right from the start. With the aim of getting at an answer to these questions Russell follows the Cartesian route of systematic doubt:1

In daily life, we assume as certain many things which, on a closer scrutiny, are found to be so full of apparent contradictions that only a great
amount of thought enables us to know what it is that we really may believe (PP. 7).

The beliefs that we take to be certain in our daily life are something like this:

... I am now sitting in a chair, at a table of a certain shape, on which I see sheets of paper with writing or print. By turning my head I see out of the window buildings and clouds and the sun. I believe that the sun is about ninety-three million miles from the earth; that it is a hot globe many times bigger than the earth; that, owing to the earth's rotation, it rises every morning, and will continue to do so for an indefinite time in the future. I believe that, if any other normal person comes into my room, he will see the same chairs and tables and books and papers as I see, ... (PP. 7-8).

But how certain is my knowledge of all these things? Can I ever attribute a definite colour or shape to my table? In the first chapter of *PP* Russell gives the following arguments to show that I cannot.

(1) To say that the table on which I am writing now is brown and oblong is a mistake. The reason is that the table appears to have very different colours in different lights. The parts that reflect the light look much brighter than the other parts, and some parts even look white because of the reflected light. Furthermore, if I move, the parts that reflect the light will be different, so that the apparent distribution of colours will change. So it seems that there is no one particular colour which is the colour of the table since it appears to have different colours from different points of view (PP. 9). Even from a given point of view the colour will seem to be different by artificial light, or to a colour blind person or to a person wearing coloured spectacles. And in the dark there will be no colour at all.

It seems evident, then, that colour "is not something which is inherent in the table", but it depends upon the table and many other factors such as, the eyesight of the observer, the way the light falls on the table, etc. When I look at the table I do not see what colour it has. I see only what colour it seems to have in a certain light. In our everyday life, when we speak of the colour of the table, what we, in
fact, mean is the colour which it will seem to have to a normal observer from a usual point of view under normal conditions of light. But this is not to deny that other colours which may appear under other conditions have just as much right to be considered real. Therefore, "we are compelled to deny that, in itself, the table has any one particular colour" \( (PP. \ 10) \).

(2) The same is true of texture. In our daily life we suppose that we see the table as smooth and even. But again physicists call into question our common knowledge. They show that if we look at it through a microscope, we see roughnesses, hills and valleys which are quite incompatible with what we see through our naked eyes. However, though we are usually inclined to accept the microscopic view, Russell points out that a more powerful microscope might reveal a different textural character of the table. This shows that we cannot trust what our senses reveal to us \( (PP. \ 10) \).

(3) The same consideration applies to the shape of the table. In our daily life we speak of the real shape of the table and other physical objects. But examination shows that the shape of a table appears to be changing as we change our position even if the shape it actually is remains unchanged. What we see from one position has one shape, what we see from another has another shape. From almost all positions the table will look as if it had two acute angles and two obtuse angles. However, opposite sides of the table will look as if they converged to a point away from the perceiver. Therefore, the "real" shape, if any, is not what we immediately see; our senses do not give us the real nature of the table, but only the appearance of it \( (PP. \ 10-1) \).

(4) Russell remarks that similar difficulties arise with regard to our sense of touch. Although it is true that the table always gives us a sensation of hardness, the sensation we get, in fact, depends upon how hard we press the table and also upon what part of the body we press it with. So Russell concludes that the various sensations we receive cannot be supposed to reveal directly any property of the table. What we directly feel, when we press the table, is a certain sensation of hardness \( (PP. \ 11) \).
All these reflections lead us to doubt that our common sense knowledge of physical objects around us is ever certain. And they lead Russell to conclude that "the real table, if there is one, is not immediately known to us at all" (PP. 11). But the question is, if our perceptual knowledge of the table is not certain, then is there anything about the table which is? To this question Russell gives a familiar answer; although we cannot be certain that the properties of the table are inherently in it, we can be certain that it presents a certain appearance to us. That is to say, the table may not be brown, or round or smooth in itself, but the fact that it appears to have those properties at a particular time is indubitable.

In this context Russell brings sense-data on stage in order to distinguish between what can and cannot be immediately experienced. "Let us give the name of 'sense-data', Russell suggests, "to the things that are immediately known in sensation" (PP. 12). In any ordinary perceptual situation though one can doubt whether one is actually perceiving the table, or that the real physical table exists at all, one cannot doubt that one is having an experience of sense-data. Whereas physical objects are such things as tables, chairs, houses, trees and the rest; sense-data are such things as visual appearances, sensations of hardness, sounds, odors, etc. Thus inquiring into the existence of physical objects Russell found that the entities that remained as the residue of this inquiry are sense-data which are to be used as the foundation of empirical knowledge. However, to maintain the independence of sense-data or what we experience from sensation or our experiencing of them Russell makes a distinction between the act of perception and the sense-data themselves:

We shall give the name 'sensation' to the experience of being immediately aware of these things [e.g. colours, sounds, smells, etc.]. Thus, whenever we see a colour, we have a sensation of the colour, but the colour itself is a sense-datum, not a sensation. The colour is that of which we are immediately aware, and the awareness itself is the sensation (PP. 12).

After exposing the problem of perception Russell introduces sense-data
to distinguish them both from physical objects and from sensations. In short, Russell's interest in sense-data is aroused by doubts and worries that afflict him when he thinks about certain facts of perception.

3.2 The Nature of Sense-data

Throughout the entire history of philosophy in general and since the 17th century in particular, sense-data have been given various names, but, in any perceptual situation, the recognition of such data has been the same. As Price writes:

... all past theories have in fact started with sense-data. The Ancients and the Schoolmen called them sensible species. Locke and Berkeley called them ideas of sensation, Hume impressions, Kant Vorstellungen. In the nineteenth century they were usually known as sensations, and people spoke of visual and auditory sensations when they meant colour-patches and noises; while many contemporary writers, following Dr. C.D. Broad, have preferred to call them sensa.

They have been defined in terms of the manner in which one becomes aware of them. And although there is wide disagreement among different philosophers as to the nature and status of sense-data, most of them would admit that the term refers to what is "immediately" or "directly" given or presented to someone's sense perception. Thus we find that at the outset of Berkeley's Three Dialogues, Philonous defines what he calls" sensible things" as "those only which are immediately perceived by sense". Locke speaks of an idea as "the immediate object of perception". C.D.Broad defines sensa as objects of which we are "directly aware" in a perceptual situation. H.H. Price defines sense-data as what are "directly present" to consciousness. G.E. Moore defines sense-data as those "things given or presented by the senses", which are "directly apprehended".

Following this tradition Russell defines sense-data as "the things we immediately perceive" (ONTF. 156) or as "things that are immediately known in sensation" (PP. 12). In RSDP Russell qualifies his PP theory that sense-data are what are presented to our senses; they are
identified as "certain patches of colour, sounds, smells, etc." (RSDP. 139). Elsewhere sense-data are called "particular facts of sense" (OKEW. 78) and "objects of sense" (OKEW. 82). Previously we have seen that Russell calls upon our familiarity with such words as "looks", "appears", "appearances", etc. in order to explain "sense-data" and "directly seen". As a matter of fact Russell uses "appearance" as a synonym for "sense-datum" (PP. 16).

There is an apparent difficulty with the technical usage of "appearance". The difficulty arises mainly when "sense-data" is used synonymously with "appearances". Dawes Hicks criticized Russell for his careless and unexplained use of "appearance" and raised the question as to whether "it is the real things themselves that appear, or whether it is the appearances that appear". In the first sense an appearance may be regarded as a way in which the reality is apprehended. In this sense, Hicks remarks, to "know a thing would be to know it in and through its appearances". In the second sense, an appearance may be regarded as itself an existing entity which arises in some way through a joint operation of a real thing upon the nervous system of the percipient. In this sense it is the appearance, not the real thing, that is immediately known. In reply to Hicks Russell writes: "I have consistently held to the second of his [Hick's] views". That is to say, he has meant only those sense-data connected with physical objects when he uses "appearance" in his writing. Russell's reply to Hicks reveals that when he uses "appearance" as a synonym for "sense-datum" he uses it in a restricted sense to cover only those sense-data that are associated in veridical perception. But Russell does not put any restriction on his use of "sense-data". He uses it to account for any perceptual situation including those which are wholly illusive or delusive, such as occur in relativity of perception, in dreams and in other hallucinatory cases.

I believe that Russell and other sense-datum philosophers have a strong case for the sense-datum theory, that we never directly perceive physical objects but only sense-data. The argument from illusion forces us to admit that in any perceptual situation what we are immediately aware of are sense-data. However, the theory has had a stormy history;
there have been many controversies about the plausibility of the theory. I have no intention of engaging in controversies in general, since my job is to interpret Russell's theory. But for the present I would like to take into account, very briefly, Austin's attack on the sense-datum theory. In his *Sense and Sensibilia* Austin develops an argument against the basic doctrine of sense-datum philosophy, that we never directly perceive physical objects but only sense-data, by attacking the classical argument from illusion. One might argue that I am here "beating the bushes" since Austin's argument is primarily directed against Ayer, Price and Warnock. However, I think that although Russell is not Austin's primary target, Austin's attack, if justified, equally affects Russell and other classical sense-datum theorists, since Russell follows the same route as do Ayer, Price and others in introducing sense-datum theory.

The argument from illusion, which is taken to be the asylum of sense-datum philosophy, according to Austin, "trades on confusion" between an illusion and a delusion. To prove this point Austin cites the following passage from Ayer's *Foundations of Empirical Knowledge*:
The argument from illusion, as it is ordinarily stated, is "based on the fact that material things may present different appearances to different observers, or to the same observer in different conditions, and that the character of these appearances is to some extent causally determined by the state of the conditions and the observer". Examples of illusory perceptions are cited as refraction (the stick which normally appears straight, looks bent when seen in water), mirages and reflections (mirror-images). Two errors, then, according to Austin, are involved in the argument from illusion:

(a) that all the cases cited in the argument are cases of *illusions*; and  
(b) that *illusion* and *delusion* are the same thing.  

An illusion, Austin holds, does not suggest that something totally unreal is conjured up whereas the term "delusion" does suggest something totally unreal, not really there at all. With reference to the latter phenomena he adds: "delusions are a much more serious matter --
something is really wrong, and what's more, wrong with the person who has them ... He needs to be cured". The main points in Austin's argument are: (1) In an illusion there is something really present, something public. Whereas (2) a delusion is something subjective and basically private. Therefore, it is unreal. Austin, on the basis of this distinction, suggests that Ayer conflates these two different notions and so draws a conclusion to the effect that what is perceived is something which is there; and that it is a sense-datum.

Austin is quite correct in pointing out the confusion of illusion and delusion in Ayer's formulation of the argument from illusion. But this does not, in any way, prove that the confusion is fatal to the sense-datum philosophy. Although I do not have a knock down argument against Austin, I think that his argument does not show the illogicality of the ground axioms of the sense-datum philosophy. His argument, no doubt, brings a clarity to the sense-datum philosophy, but it does not destroy the doctrine that what we directly perceive is a sense-datum. He does not say anything, as John Passmore rightly mentions, about the "argument from physics -- from the disparity between things as we ordinarily take them to be and things as the physicist describes them -- which many epistemologists have thought to be the most fundamental of all arguments for sense-data". All Austin's distinction shows is that one has to separate an argument from illusion from an argument from delusion. Both then, contrary to Austin's claim, can be used to support sense-datum theory. In fact, talk about argument from illusion is just a façon de parler; it historically covers, as Hirst points out, the relativity of perception, illusions proper and hallucinations and dreams.

Following his distinction between illusion and delusion Austin brings another objection against Ayer. The objection is that when Ayer uses "see" in such delusive cases as "Macbeth sees a dagger" he implies that in this sense of "see" Macbeth's statement does not entail that what he sees exists in any sense at all. To such cases Austin objects that there is no such sense of "see". In the case of a ghost, for instance, he maintains that "if I say that cousin Josephine once saw a
ghost, ... there was, in some sense, this ghost that Josephine saw.\textsuperscript{22} Austin presumably maintains that Ayer holds that the dagger which Macbeth "sees" also exists "in some sense", as a hallucinatory dagger. Here Austin is using "see" in its ordinary sense in which to say "I see a table" or "Josephine sees a ghost" entails that the table or the ghost exists. In this sense Macbeth did not see a dagger, although he thought that he did, since there was nothing to be seen. Austin's objection is that from Macbeth's mistaken claim that he sees a dagger it does not follow even that he saw a hallucinatory dagger or anything else. What Austin seems to be suggesting is that in such a hallucinatory situation what Macbeth really should say (what it would be correct for him to say) is "I seem to see a dagger".

I am not sure whether Russell is affected by Austin's objection. Russell would certainly agree with Austin that Macbeth did not see a dagger, at any rate a real physical dagger. But he must reject Austin's view that Macbeth did not thereby "see" anything at all. Russell's position is that so far as Macbeth's hallucination is concerned he certainly "saw" something which he described as a dagger; and in that case the question of what seems, and what actually is, the case does not arise (cf. infra, 3.2.1). In Macbeth's case, to say that "he sees a dagger" Russell admits only that Macbeth "sees" a sense-datum (which we may call a daggerish sense-datum) which is simply the way the hallucinatory dagger looks.\textsuperscript{23} In a case of dream or hallucination, to say that \(x\) is a sense-datum is not to imply an object of which \(x\) is a sense-datum. Rather \(x\) is simply the way the dream object or hallucinatory object looks. However, Russell consistently holds that there is no intrinsic difference between veridical perceptions and other illusive or hallucinatory perceptions considered in themselves; all immediate data have the same status. This indifference is, I suggest, tied up with Russell's (together with other sense-datum philosophers') employing a common characteristic to all sorts of perceptual awareness in terms of being "immediately" or "directly" aware. Thus following Russell, when I say that "\(x\) is a sense-datum" what I mean is that I am immediately aware of \(x\) no matter whether \(x\) is a sense-datum of something or not. Taking
immediate or direct awareness as a defining characteristic of Russell's notion of sense-data, let us see what other characteristics they have.

3.2.1 There is no error in sense-data

We have seen that familiar epistemological arguments concerning the relativity of perception lead Russell to conclude that what we immediately experience in sensation are sense-data, not physical objects. These sense-data are known indubitably. In ONTF (p. 156) Russell says that "perception, as opposed to judgment, is never in error, i.e. that, whenever we perceive anything, what we perceive exists, at least so long as we are perceiving it". As I have already mentioned, Russell uses "sense-data" in its traditional sense in which a sense-datum is the object of a type of awareness which is presupposed in any perceptual situation. The direct awareness is such that if a person S is aware of a sense-datum x, then the following are true:

(a) x exists.
(b) S cannot be mistaken about x.
(c) S cannot doubt whether x exists.
(d) S cannot fail to believe that x exists.
(e) S cannot fail to know that x exists.

All these follow from Russell's claim that sense-data are what we are directly aware of in any perceptual situation. He explicitly admits that "there is no illusion of sense" (OKEN, 42-3). Objects of sense are always real. An elliptical appearance of a round table, from a particular point of view, is itself counted as a kind of object, one which has the properties the table appears to have, and, unlike the table, cannot fail to have. In claiming the certainty and indubitability of sense-data Russell seems to follow Berkeley who says that it is a "manifest contradiction" to suppose that some one could err in respect to what he perceives immediately. The same idea appears in PP where Russell says, "even in dreams and hallucinations, there is no error involved so long as we do not go beyond the immediate object" (PP, 110, emphasis added). Error "can only arise when we regard the immediate object, i.e. the sense-datum, as the mark of some physical object" (PP.
110). In contrast to physical objects, Russell says that sense-data have "primitive certainty" (PP. 19), which in effect implies that it is logically impossible for S to doubt or be mistaken or to fail to know that what he perceives is a sense-datum (x). Russell explicitly says that "it is not possible to doubt the sense-data" (PP. 47) or "[w]hat does not go beyond our own personal sensible acquaintance must be for us the most certain" (OKBW. 74).

Russell introduces "sense-data" in connection with how a table appears or looks to him, in terms of "immediately" or "directly" seeing. The notion of "directly seeing something" is tied up with the notion of incorrigibility. In other words, we can speak of directly seeing only where it makes no sense to speak of error. Russell seems to suggest that with respect to sense-data the distinction between what seems to appear and what is the case does not arise. The common interpretation involved in saying that

\[(\alpha) \; x \text{ appears to be } \Phi, \text{ and}\]
\[\beta \quad x \text{ is } \Phi\]

and

\[(\beta_1) \; x \text{ seems to be } \Phi \text{ to } S, \text{ and}\]
\[\beta_1 \quad x \text{ is } \Phi\]

is that in \((\alpha)\) and in \((\beta)\), not in \((\alpha_1)\) and \((\beta_1)\), S is at least doubtful or hesitant that "x is \(\Phi\)". Such a difference is implied in Austin's discussion of Ayer's case of the man who looks at a star and says that he sees a silvery speck no bigger than a sixpence. Austin asks, "can the question whether the speck really is no bigger than a sixpence, or whether perhaps it is just seems to be no bigger than a sixpence, be seriously raised?"26 However, Austin seems to miss the important sense of "sense-data"; the way "sense-data" is introduced, there can be no difference in his claimed alternatives. The difference between what \(is\) and what only \(seems\) or \(looks\) is not applicable when we consider sense-data in themselves.27 As a matter of fact there cannot be any difference between \((\alpha)\) and \((\alpha_1)\), and \((\beta)\) and \((\beta_1)\). The reason is that sense-data have all the properties they seem to have. Therefore, it makes no sense
to say that sense-data could have properties they do not have or seem to have properties they do not have.

According to Russell, sense-data are the most certain elements in our empirical knowledge. "Certainty" points primarily to the fact that sense-data are immediately known without inference. For Russell to say that sense-data are immediately known is to say that their being present to a perceiver is complete evidence for beliefs concerning them. He insists that sense-data are "things immediately known to me just as they are", so much so that "I know the colour perfectly and completely when I see it, and no further knowledge of it itself is even theoretically possible" (PP. 47). The implication of this passage is that it is impossible to be immediately and "directly" (PP. 11) aware of anything which could, theoretically, appear to have a property it does not have. That is to say, being immediately and directly perceived entails being such that it can never look other than what it is. As Prichard remarks, nothing counts as being directly perceived which can "look other than what it is". Price has also made a similar point in the following passage:

When I see a tomato there is much that I can doubt. I can doubt whether it is a tomato that I am seeing, and not a cleverly painted piece of wax. I can doubt whether there is any material thing there at all... One thing however I cannot doubt: that there exists a red patch of a round and somewhat bulgy shape, standing out from a background of other colour-patches, and having a certain visual depth, and that this whole field of colour is directly present to my consciousness.

We are so certain about sense-data that it is both psychologically and epistemologically impossible to doubt that they are what they appear to be.

In PP, Russell maintains that sense-data are produced by physical objects and that they are certain since we are acquainted with them. Russell seems to realize that the notion of certainty is rather psychological and subjective. So there must be some objective criterion by which we can distinguish what is certain from what is not. In PP, the search for certainty begins "with our present experiences, and in some
sense, no doubt, knowledge is to be derived from them" (PP. 7). It is by careful analysis that we can distinguish what is certain from what is not. Exactly here lies, according to Russell, the aim of philosophy (PP. 7). Sense-data have to be certain; otherwise they cannot be used as a "solid basis from which to begin our pursuit of [empirical] knowledge" (PP. 19).

3.2.2 Sense-data are non-inferred

In OKEW, in addition to certainty, sense-data must have another characteristic (which is only implicit in PP), viz. that of being "non-inferential". Therefore, the basis of empirical knowledge must be certain as well as non-inferred. Because of this non-inferential character sense-data are "primitive" (OKEW. 75). The primitive data are the certain or least dubitable elements in empirical knowledge. However, it should be borne in mind that much of what we usually think of as primitive is not so, but is inferred. Notice, "inference" is used here not in the sense of logical inference, but in the sense of psychological inference. An example of psychologically inferred data would be, according to Russell, when we assume from the frown on a person's face[^30] that the person is puzzled or angry. Here our knowledge is logically primitive but psychologically inferred "by association of ideas or some equally extra-logical process" (OKEW. 76).

On Russell's view, the only data (primitive data) which resist all attempts to undermine them (which he calls "hardest of hard data" [OKEW. 78]) must be not only logically primitive (non-inferential) but also be psychologically primitive. The reason is:

> When we reflect upon the beliefs which are logically but not psychologically primitive, we find that, unless they can on reflection be deduced by a logical process from beliefs which are also psychologically primitive, our confidence in their truth tends to diminish the more we think about them (OKEW. 77).

This passage tends to suggest that Russell is giving more importance to the psychological priority of beliefs than to epistemological priority, in which case the whole investigation of sense-data would be psycho-
logical. But this is quite implausible. However, it seems to me that Russell is dealing with two problems: the first one is to look for the certain and non-inferred basis for our knowledge, and to show how our empirical knowledge is built on that basis; and the second one is to investigate what elements come first in our knowledge. The nature of the first problem is purely epistemological whereas that of the second is psychological. But although Russell does not mention what the relationship, if any, is between these problems, it seems to be that whatever is certain is also psychologically primitive. But if this is so, then the certainty and non-inferred quality of our belief serve as the basis of epistemological superstructure, and the psychological priority becomes only incidental quality. I think that Russell overlooks this fact when he claims that the data must be not only logically primitive, but also psychologically primitive.

3.2.3 Sense-data are not mental

Russell persistently claims that sense-data are not mental entities. However, the term "mental" is too ambiguous. It may be used in the following senses:

(1) \( x \) is mental iff. \( x \) is an act of sensation.
(2) \( x \) is mental iff. \( x \) is located in the mind of a person.
(3) \( x \) is mental iff. \( x \) is a part of or appertains to a mind.
(4) \( x \) is mental iff. \( x \) is an entity which exists only at the moment at which \( x \) is perceived.

For Russell, sense-data are not mental in the senses expressed in (1), (2) and (3). Although he relies mainly on (1), Russell uses all these three senses of "mental" to show that sense-data are not mental. Now if we adopt (4) then sense-data cease to exist when they are no longer perceived. There are various passages in PP (cf. pp. 23, 27, 38, 41) which seem to suggest that, for Russell, sense-data would not exist if they were not perceived. However, since Russell himself does not want to call this dependence "mental" (cf. PP. 38, 41), we must admit that when he says that sense-data are not mental, he surely excludes "mental" in sense (4).
According to Russell, sense-data are not mental although the acts of sensation that are directed on to them are mental. Sense-data are the things that are immediately known in sensation. Sensation is mental and consists in the subject's awareness of the sense-datum. Now since a sensation is a complex of which the subject is a constituent that makes the sensation mental. Whereas a sense-datum is the object of awareness (acquaintance) in sensation; the sensation is the experience of being aware of the object (PP. 12; RSDP. 145). Russell's view that sense-data are different from sensations is developed in the form of a repudiation of Berkeley's view that sense-data are mental. Russell suggests that Berkeley's view is due to the confusion between the thing that is perceived and the perceiving of it (cf. PP. 37-45; UCM. 124-28). Berkeley uses "idea" for both the thing that is perceived (sense-datum) and the perceiving of it (sensation). But Russell points out that "idea" in the sense of sense-datum is one thing; but "idea" in the sense of act of sensation is a different thing. The latter is mental, not the former.

Russell maintains that perceiving of the thing takes place in the mind, but the thing that is perceived *viz.* the sense-datum itself is extra mental. When I see a flash of lightning, my seeing it is mental, but no one (with the possible exception of Berkeley) would say that the flash of lightning is mental. This point is well expressed in the following passage:

What I mean may perhaps be made plainer by saying that if my body could remain in exactly the same state in which it is, although my mind had ceased to exist, precisely that object which I now see when I see the flash would exist, although of course I should not see it, since my seeing is mental (UCM. 125). Russell's argument goes not only against Berkeley but also against others who agree with Berkeley and maintain that the objects of sense depend for their being on the percipients' mind. But he also admits that the objects of perception *causally* depend for their being upon the body of the percipient, not upon the mind (UCM. 128; OKEW. 71). He argues that any alteration in our visual sensations is the result of bodily
actions., not of a mental ones. This goes against the subjectivist's view in a straight forward sense.

3.2.4 Sense-data are physical

One of the distinctive features of Russell's theory of sense-data is that they are physical entities. Sense-data are neither parts of mind nor located in the mind. Berkeley's implausible thesis seemed to Russell to be the result of a confusion between what is perceived and the perceiving of it. But while Russell clearly established the non-mental status of sense-data in PP, he did not clearly establish their physical status. Rather, he seems to assign them an intermediary status. He considers them as signs of physical objects, having relations which we suppose connect them to the physical objects which cause them (PP. 19-20). However, it is in his reply to Hicks that he first explicitly gives sense-data a purely physical status. Here he writes:

Dr. Dawes Hicks raises the question whether sense-data are in any sense "mental" ... Now the word "mental" is one which, so far as I know, has no well-defined meaning. But I hold that the sense-datum is certainly something other than the subject, something to which the subject's relation is just as "external" as to the physical object. The only point where I part company from the out-and-out realist is in holding that, for various empirical reasons of detail, it is not certain that the quality which is the sense-datum ever exists at times when it is not a sense-datum. 

This passage indicates that sense-data are physical. If not then why should Russell characterize his position as like the "out-and-out realist" unless he wants to treat sense-data as physical? By an "out-and-out realist" Russell presumably means someone who holds that to perceive a physical object is to perceive, among other things, a sense-datum, a sense-datum which might be said to be part of a physical object. This sense-datum is public or neutral as between observers and independent of our perception of it, both in the sense of existing before and after our perceiving it and also in the sense that our perceiving of it leaves it unchanged. However, one might argue that
since Russell's position is like that of an "out-and-out" realist, why then is not Russell himself an "out-and-out" realist? The reason is that whereas for an "out-and-out" realist to say that we always perceive sense-data is not to say that we perceive nothing but sense-data; rather it is to say that we perceive things only in so far as we perceive sense-data of them. But Russell, relying on the relativity of perception (argument from illusion) maintains that our perception is always restricted to sense-data and never to physical objects.

It is not until 1913 in the TK, that Russell first gives sense-data a definite physical status and calls them the "constituents of the physical world" (TK. 22, 31). In the TK, while maintaining the PP sense-data/sensations distinction, Russell admits that "what we experience [sense-datum] may itself be part of the physical world, and often is so; that the same thing may be experienced by different minds;... (TK. 31). In doing so, Russell agrees with the neutral monists:

Neutral monists have done a service to philosophy in pointing out that the same object may be experienced by two minds. This certainly applies, as a matter of fact, to all experiencing of universals and abstracts; it applies also, though I think only as a theoretic possibility, to the things of sense (TK. 34).

By mentioning that it is only a "theoretic possibility" that the same sense-datum may be experienced by two people Russell is giving sense-data a logically independent status without any relation to the perceiver. This tendency is carried to the conclusion "that the actual data in sensation, the immediate objects of sight or touch or hearing, are extra-mental, purely physical, and among the ultimate constituents of matter" (UCM. 123; cf. also SMP. 118, RSDP. 141-45; OEAW. 71). 37

Russell persistently claims that sense-data are physical. But what does he mean by "physical"? His definition of "physical" is quite unusual. He defines it as "what is dealt with by physics" (RSDP. 144). But what then is physics? According to Russell, physics "tells us something about some of the constituents of the actual world; what these
constituents are may be doubtful, but it is they that are to be called physical, whatever their nature may prove to be" (RSDP. 144). However, given Russell's claim that physics "exhibits sense-data as functions of physical objects" (RSDP. 140), it is natural to conclude that sense-data are at least part of the subject matter of physics.

Russell also uses "physical" in another sense to mean something whose existence is not logically dependent upon that of a peripient. The existence of one thing is logically dependent upon that of another iff. one is part of the other. Russell says that "the only way... in which the existence of A can be logically dependent upon the existence of B is when B is part of A" (RSDP. 145). One might claim that this passage makes it only a necessary condition, not a sufficient condition, for A's being dependent on B. But I believe that Russell also makes it a sufficient condition and that that follows from his part-whole principle which, as Griffin has pointed out, he adopted throughout his life. The part-whole principle is:

A exists iff. every part of A exists.

It follows from the part-whole principle that A cannot exist if B does not exist. So the existence of A depends on the existence of B as much as the existence of B depends on the existence of A. But "a sense-datum is an object, a particular of which the subject is aware" and it "does not contain the subject as a part, as for example beliefs and volitions do" (RSDP. 145). Now Russell claims that once sense-data are distinguished from the mental event of sensation their apparent subjectivity vanishes. The sense-data themselves are logically independent of the subject that experiences them. Therefore they can be called physical.

3.2.5 Sense-data are private

We have seen that Russell introduces the term "sense-data" in connection with saying that the table looks somehow to some one. He seems to suggest that the table's looking brown to me involves my seeing a private object. There is a good and familiar sense in which two different people may be said to perceive the same object, hear the same sound, feel the same feeling, and from this it follows that they do have


the same experiences. But it is true that even though they may experience the same object, they do not sense the same sense-data. The sense-data which they respectively sense may be qualitatively similar but they cannot be numerically the same. This is why, I suggest, Russell states that although sense-data are extra-mental, purely physical and are among the ultimate constituents of matter, it is only a "theoretic possibility" that two people can experience the same sense-data. So sense-data must be private because of the practical impossibility of observing (being acquainted with) another person's sense-data, of having a sense-datum which is numerically identical to some one else's. As Russell says:

... the sense-data are private to each separate person; what is immediately present to the sight of one is not immediately present to the sight of another: they all see things from slightly different points of view, and therefore see them slightly differently (PP. 20).

Russell also employs the same explanation in connection with both sense-data and "mental things". The privacy of "mental facts" is due to the privacy of "mental things":

All mental facts, and all facts concerning sense-data, have this same privacy: there is only one person to whom they can be self-evident in our present sense, since there is only one person who can be acquainted with the mental things or the sense-data concerned. Thus no fact about any particular existing thing can be self-evident to more than one person (PP. 137).

Facts concerning sense-data can be self-evident to only one person because no one can observe another person's sense-data. Since each sense-datum is perceived from the perceiver's particular point of view and since two different perceivers cannot simultaneously occupy exactly the same position, each person's sense-datum must be private. So although sense-data are extra-mental, purely physical and logically public (that it is logically possible that they be sensed by more than one person), they are also contingently private. But it should be pointed out here that what makes sense-data private, and in a sense subjective,
is the empirical fact that "sense-data apparently change in ways which we must attribute to ourselves rather than to the object". 42

3.2.6 Sense-data exist independently of perception

Although Russell's general view is that sense-data exist independently of perception, in PP he seems to characterize them as being not only private but also being dependent on a subject. He seems to suggest that sense-data do not exist except when they are perceived. They are not, of course, dependent on the mind for their existence, but they are dependent on the sense-organs, so that they do not exist when no sense-organ is making us aware of them. When I look at my table I see various sense-data associated with it, but all of them will cease "to exist if I shut my eyes" (PP. 27). Again, Russell explicitly mentions that "our sense-data cannot be supposed to have an existence independent of us, ... their existence would not continue if there were no seeing or hearing or touching or smelling or tasting" (PP. 38). On this view the existence of sense-data is physiologically conditioned. In this sense sense-data are the effects of two joint causes, the physical objects and the sense-organs. Thus the colour of the table is really produced by the interaction of the physical table and the organ of sight. So there will be no colour where there is no eye.

Having introduced the term "sense-datum" in connection with how a table appears to him from different points of view, Russell seems committed to admitting that sense-data are dependent on a subject. This dependence is also exhibited, at least in the case of visual sense-data, not only when I close my eyes, but also when I walk around the table, keeping my eyes focused on it all the time. At each step the table looks different, that is to say, at each step I see a different sense-datum. And as soon as a sense-datum is replaced by another, and is thus no longer perceived, it ceases to exist. Even if we approach the matter via Russell's notion of physical objects (which exist unperceived) we get the same idea that sense-data cannot exist unperceived. Consequently we find him saying that a cat (a physical object) is a series of sense-data, then it cannot exist unperceived (PP. 23).
The above conclusion, that sense-data only exist when they are perceived, seems extremely odd considering their physical and extra-mental character. However, in my opinion, Russell did not honestly want to hold this conclusion although textual evidence shows that he did. He is, in fact, a victim of conflating sense-data and sensations. Despite his explicit distinction between sense-data and sensations on page 12 of PP, he did not consistently adhere to it in the rest of PP. What Russell wanted to say, I believe, is that when he shuts his eyes his sensation or awareness (not the sense-datum) of the colour ceases, and it is quite a different matter from the statement that "colour ceases to exist if I shut my eyes". Thus this must be a careless slip, because in the same passage he recognizes this so far as hardness is concerned:

The colour ceases to exist if I shut my eyes, the sensation of hardness ceases to exist if I remove my arm from contact with the table, the sound ceases to exist if I cease to rap the table with my knuckles (PP. 27, emphasis added).

In the first instance if I close my eyes, it is the colour, not the sensation of colour, that ceases to exist. But in the second case, if I remove my arm from contact with the table, the sensation of hardness ceases to exist, not hardness (sense-datum). Now to be consistent, Russell must mean, in the first case, the sensation of colour, not the colour itself which ceases to exist when he shuts his eyes.

In Russell's later writings he consistently holds the view that sense-data can exist unperceived. Thus only three months after the publication of PP Russell explicitly says, in "On Matter", that "the existence of the sense-datum does not depend upon our perception". And again, he says, "we know that the subject can exist at times when it is not sensating the particular quality [sense-datum] in question, and we naturally assume that the quality can exist at times when the subject is not sensating it". But Russell also admits that one might call sense-data subjective only in the sense that they are causally dependent upon the sense-organs and brain processes (cf. RSDP. 143; SMP. 118; OKEW. 73). He persistently claims that the existence of sense-data is not logically dependent upon that of the perceiver. The causal dependence of
sense-data on perceivers is an empirical matter, not a logical one. Thus Russell says, as early as in "On Matter", that "[t]here is therefore no a priori reason why the objects which are at certain times sense-data, such as colours, should not continue to exist at times when they are not data to any mind". An almost identical passage appears in RSDP (p. 145): "There is therefore no a priori reason why a particular which is a sense-datum should not persist after it has ceased to be a datum, nor why other similar particulars should not exist without ever being data". So sense-data are logically independent of perception. The brown patch of colour lies in front of me. Its being there is no act of mine. I do nothing to make it appear. It exists in its own right. So the brown sense-datum is said to be independent of my perception in the sense that there is no contradiction in saying that it exists after ceasing to be my datum.

3.2.7 Sense-data are momentary

The causal dependence of sense-data upon the condition and location of the observer's body makes them not only private to the percipient but also momentary. As Russell says, when "I speak of a 'sensible object' [sense-datum], it must be understood that I do not mean such a thing as a table, which is both visible and tangible, can be seen by many people at once, and is more or less permanent. What I mean is just that patch of colour which is momentarily seen when we look at the table" (OKEN. 83). Russell is here certainly differing from the belief that what is physical must be persistent. Rather, for Russell, sense-data are momentary, fleeting, "in a state of perpetual flux" (UCM. 123; PLA. 274). In UCM, Russell explains the momentary character of sense-data with a symphonic analogy. Just as "[t]he ultimate constituents of a symphony ... are the notes, each of which lasts only for a very short time" (UCM. 124), the ultimate constituents of matter are sense-data each of which lasts for a moment.

The momentary character of sense-data also clarifies the sense of the term "physical" in Russell's system. It is ordinarily supposed that sense-data cannot be physical, since what is physical persists,
whereas sense-data are momentary and fleeting. However, I think, for Russell being physical does not conflict with being momentary and fleeting. What makes sense-data momentary and fleeting is far removed from what makes them physical. The momentary and fleeting character of sense-data, for Russell, is tied up with their being objects of awareness, not with their being ultimate constituents of matter. A simple awareness of them should not affect their actual nature. So what makes them physical is being part of the ultimate constituents of matter, i.e., being part of the subject matter of physics. Sense-data are both physical and momentary. But they are certainly not momentary in the sense of having no temporal parts, but in the sense that even if a person is able to remain in exactly the same position and attitude for a certain period of time, it is improbable that there will be no relevant change in the environment. So a person cannot sense the very sense-datum on occasions separated by more than a few moments (PLA. 201).

3.2.8 Sense-data may be complex

According to Russell sense-data (especially in sight and hearing) are generally, if not always, complex. He says:

When I see a colour or hear a noise, I have direct acquaintance with the colour or the noise. The sense-datum with which I am acquainted in these cases is generally, if not always, complex. This is particularly obvious in the case of sight. I do not mean, of course, merely that the supposed physical object is complex, but that the direct sensible object is complex and contains parts with spatial relations (KAKD. 198).

This passage shows what kind of complexity that a sense-datum has, viz. it is a spatial whole having parts. Russell considers it as a single sense-datum having complexity. When I see "this-is-to-the-left-of-that" I do not mean that I look first at this, then at the other, then form a judgment that "this is to the left of that". Rather I am forming one "datum" consisting of two basic sense-data (particulars), "this" and "that" in spatial relation. In this case a single sense-datum is referred to by a complex expression that "this-is-to-the-left-of-that". As
examples of complex sense-data Russell mentions such entities as "this-before-that", "the-yellowness-of-this", "this-above-that", "a-in-the-relation-R-to-b", etc. (KAKD. 201; PM I. 43; TK. 9). These complexes are called facts.

A complex sense-datum contains parts that are spatially related to one another. Now it might be asked whether Russell also maintains that we can be acquainted with the different constituents and the spatial relations subsisting between them? Hicks claims that Russell does and asks the question: "When I am 'acquainted with' one part of a complex as belong to the left (say) of another part, what is it that constitutes the difference between such 'acquaintance' and the judgment that the part B is to the left of part A?" Hicks' main objection is to acquaintance with a complex sense-datum. But, contrary to Hicks' claim, Russell says: "Whether it is possible to be aware of a complex without being aware of its constituents is not an easy question, but on the whole it would seem that there is no reason why it should not be possible" (KAKD. 198). Here, unlike Hicks, Russell leaves undecided whether we are also acquainted with the different constituents of a complex and the spatial relation subsisting between them. From what Russell has said ("that that there is no reason why it should not be possible"), it seems to be that he is inclined to answer the question negatively. He seems to admit that we may perhaps be aware of the complex without being aware of the parts which are their constituents.

It seems to me that even if we were acquainted with the different constituents of a complex sense-datum at the same time of our acquaintance with the complex sense-datum itself, that would not, in any way, destroy the acquaintance and imply a judgment. We can be aware of the constituents of a complex sense-datum without recognizing them as constituents and we can also be aware of the relations subsisting between them without realizing that they are the relations that hold between the constituents. Let us suppose that x and y are two terms that are related by R. In this case I may be aware of x without recognizing, at the same time that it is x. And again, I may be aware of y without recognizing that it is y, and I may be aware of R without recognizing
that $x$ is related to $y$ by the relation $R$. I suggest that Hicks is wrong in supposing that whenever I am aware of the relation "to the left of" subsisting between $x$ and $y$, I am also aware that $x$ is to the left $y$, i.e., whenever I am aware of a relation, I am also aware that it is a relation.

Russell not only accepted complex sense-data, he even included them among particulars: "Among particulars I include all existents [basic particulars], and all complexes of which one or more constituents are existents, such as this-before-that, this-above-that, the-yellowness-of-this" (KAKD. 201). This passage clearly indicates that particulars fall into two kinds, those which Russell calls "existents" and those which he calls "complexes". But in KAKD Russell did not explicitly address the question of why complexes could not be existents. However, in PP, Russell addresses the matter fully. For Russell only what is in space and in time can properly be said to exist. Since there is no place or time where we can find universals, he does not call them "existents" although they are "real" (cf. PP. 98-100). Now since in every complex there is at least one universal, and since this universal does not exist, complexes become a different sort of particulars from those which exist. However, although Russell uses "particulars" to include basic sense-data, presumably coloured patches and the like (KAKD. 198; RSDP. 141; PLA. 195), as well as complex, it is only the latter that he calls facts. In the complex particular "the-yellowness-of-this", the fact consists of an existent this standing in the exemplification relation of the property yellowness.

In his later works Russell sticks to the basic particulars of KAKD which could be known by acquaintance and assigns the complex particulars to judgment which could be known by "perception". In RSDP (pp. 140-1) Russell says, "[w]hen I speak of a 'sense-datum', I do not mean the whole of what is given in sense at one time. I mean rather such a part of the whole as might be singled out by attention: particular patches of colour, particular noises, and so on". Besides data of sense, there are what Russell calls "data of perception". The example of data of perception is "[a]n observed complex fact, such as that this patch of
red is to the left of that patch of blue" (RSDP. 141). Although the
"logical structure of data of perception differs from that of data of
sense", nevertheless Russell finds it "convenient to regard data of
perception as included among sense-data" (RSDP. 141).

3.3 The Theory of Sensibilia

Russell's theory of sensibilia is a post-PP development of his
time of sense-data. In RSDP, he introduces sensibilia by way of
sense-data. Although Russell introduces the term "sensibilia" in RSDP,
in 1914, the doctrine of "sensibilia" is found in his philosophy from
1912. Thus in "On Matter" Russell states that "matter will be composed
totally of qualities of the nature of sense-data, but not only of those
which one observer perceives; it will consist of all the sense-data
which all possible observers would perceive in perceiving the same
thing".49 In another unpublished manuscript50 and in OKBW (p. 117) the
notion of "sensibilia" is identified with "ideal" qualities or appear-
ances. These "ideal" appearances are those entities which are supposed
to correspond to "how things would appear to a spectator in a place
where, as it happens, there is no spectator" or "at times when, in fact,
they are not appearing to anyone" (OKBW. 116). Again the sensibilia
time is implicit in Russell's reply to Dawes Hicks. Russell writes, "a
quality becomes a sense datum by being given in sense, just as a woman
becomes a wife by being given in marriage".51 Now the question is: how
can a quality become a sense datum unless it already existed prior to
its being a sense datum i.e., in some sense while it is not a sense-
datum. We can even press the analogy a little further, the woman exists
before she becomes a wife. So whatever is the precise vocabulary for the
exposition, the doctrine of sensibilia is as old as Russell's "On
Matter".

During the post-PP period Russell's main concern is to give a
complete account of how the objects of physics (and also of common
sense) are to be described as functions of sense-data. Now since physics
treats objects as persisting through time, Russell introduces the notion
of "sensibilia" to provide the continuity for physical objects which sense-data, because of their momentary and private character, seem not to provide. He gives the name sensibilia to those objects which have the same physical and metaphysical status as sense-data, without necessarily being data to any mind. They "would appear from places where there happen to be no minds, and which I suppose to be real although they are no one's data" (RSDP. 150). A sensible, according to this view, becomes a sense-datum by entering into the relation of acquaintance. As Russell says:

I shall give the name sensibilia to those objects which have the same metaphysical and physical status as sense-data, without necessarily being data to any mind. Thus the relation of a sensible to a sense-datum is like that of a man to a husband: a man becomes a husband by entering into the relation of marriage, and similarly a sensible becomes a sense-datum by entering into the relation of acquaintance (RSDP.142).

Russell's definition of sensibilia has two interesting consequences. The first one is that all sense-data are sensibilia but not vice versa, since there are also unsensed sensibilia.52 On this view a sense-datum is merely a sensible that stands to a person as an object of acquaintance just as a husband is a man who stands to a woman in the relation of matrimony. Previously we have seen that sense-data have a private and momentary character, not because it is logically impossible for them to be both public and persistent, but because they are causally dependent upon the sense organs and brain processes of the percipient. But these considerations do not apply to unsensed sensibilia. As Russell puts it:

If two men are sitting in a room, two somewhat similar worlds are perceived by them; if a third man enters and sits between them, a third world, intermediate between the two previous worlds, begins to be perceived. It is true that we cannot reasonably suppose just this world to have existed before, because it is conditioned by the sense-organs, nerves, and brain of the newly arrived man; but we can reasonably suppose that some aspect of
the universe existed from that point of view, although no one was perceiving it (OKEB. 95).

This passage shows that the sets of sensibilia which constitute "some aspect of the universe" are not momentary and private, because they existed in some way before the third man enters the room. However, the sensibilia get a private and momentary character as soon as they become sense-data to some one. Notice, they become private and momentary in relation to the observer not to the object of which they are sense-data or sensibilia. The second consequence of Russell's definition of sensibilia is that they have all the "metaphysical and physical status" as sense-data have. But it is not clear what Russell means by the phrase "metaphysical and physical status". However, whatever it means, it must mean that there are some properties which both sense-data and sensibilia have in common.

Now the problem is to see whether Russell's distinction between sense-data and sensibilia, in respect of their properties, is consistent. Ayer claims that the distinction is "inconsistent" and offers the following reason in favour of his claim:

If the causal dependence of sense-data upon sentient bodies is to be sufficient to make them private and momentary, it must be an existential and not merely a qualitative dependence. But if sense-data are existentially dependent on the presence of observers, they cannot exist, in the absence of observers, as unsensed sensibilia. And if they could exist as unsensed sensibilia, there is no good reason why they should not exist subsequently as well as previously to being sensed.93

I think that Ayer misunderstands Russell's notion of sensibilia. We have already seen (cf. supra. 3.2.6) that the causal dependence of sense-data upon sense-organs and brain processes does not make them dependent upon the observer. By using the phrase "existentially dependent" (the phrase is Ayer's), Ayer, I think, instead of clarifying Russell's position, mixes up his own brand of sense-data with Russell's; on Ayer's view sense-data by definition depend for their existence on perception. But this is not Russell's view. At any rate, Russell does not think that the existence of a sensibile that in fact stands to an observer in the
relation required to make it a sense-datum logically requires that there be such a subject any more than the existence of a man who is in fact married is logically dependent on the existence of a woman whose husband he is. Russell says quite explicitly:

If -- per impossibile -- there were a complete human body with no mind inside it, all those sensibilia would exist, in relation to that body, which would be sense-data if there were a mind in the body. What the mind adds to sensibilia, in fact, is merely awareness: everything else is physical or physiological (RSDP. 143; cf. also UCM. 125).

So it becomes evident that Russell's distinction between sense-data and sensibilia is not inconsistent, or at least not inconsistent in Ayer's characterization.

By way of clarification Ayer makes another objection to Russell's theory of sensibilia. Taking Russell to understand by sensibilia what "would be presented to an ... observer who ... had the appropriate point of view", Ayer charges that "apart from the objection that the character of a perspective is supposed to depend not only on the location but also on the physical condition of the observer, and that there is no reason to assume that all hypothetical observers would be in the same physical condition". It seems to be that, as Michael Lockwood has rightly pointed out, "Ayer is laboring under a serious misapprehension" if he thinks that the existence of unsensed sensibilia is a function of how things would look to an observer who had the appropriate point of view. If that was the case then an observer could satisfy his curiosity regarding the sensibilia presented at a space which is not yet occupied by any actual observer, simply by taking up position there. But on Russell's view, this would never be possible because the observer in that case would be obliged to carry his body with him. This is what Russell is driving at when he speaks of the "causal dependence" of sensibilia "on the sense-organs, nerves and brains" (RSDP. 143). Therefore, "[w]e have not the means of ascertaining how things appear from places not surrounded by brain and nerves and sense-organs, because we cannot leave the body" (RSDP. 143).
Although Russell is quite certain of sensed sensibilia (sense-data) he remains uncommitted as to whether we can be certain of unsensed sensibilia. He accepts their existence as a metaphysical hypothesis which is justified by the principle of continuity:

We have not the means of ascertaining how things appear from places not surrounded by brain and nerves and sense-organs, because we cannot leave the body; but continuity makes it not unreasonable to suppose that they present some appearance at such places. Any such appearance would be included among sensibilia (RSDP. 143).

The straightforward interpretation of this passage is: since sense-data are occurrences in the nervous system of the observer, but sensibilia are not, the observer does not know exactly what those appearances are like at a place that is not surrounded by his own nervous system. But the principle of continuity makes it possible that they existed at a place prior to their being data to the observer. But at a place which is surrounded by the observer's nervous system, he knows what the appearances are like. It is produced as a result of the light rays striking the retina and then passing the effects in the optic nerves. This is a sense-datum (and, in fact, we have seen previously that Russell uses appearances and sense-data synonymously), which is, on Russell's view, a patch of colour (cf. PP. 46; RSDP. 141).

But there is a certain amount of ambiguity in this interpretation. As Pears asks, how could a patch of colour be absorbed into the nervous system of the observer? What Russell seems to mean is that perceiving colour is experiencing certain events in one's nerves. If so, then he must equate sense-data with both events and appearances. But is it possible for someone's nervous system to be coloured? However, the event would be what happened when a colour appeared to a person, and in that sense it might well be called the appearance of the colour. In that case Russell must distinguish between the appearance of what appears and its appearing. The appearing can surely be an event in the nervous system, but what appears is outside the nervous system. Therefore, Pears suggests that when Russell says that he does not know that appearances
at places where there are no human nervous systems are like appearances
at places where there are human nervous systems what he perhaps

...ought to have said is that, if the word
'appearance' is used in such a way that an appear-
ce can be seen, then it is unintelligible to
suggest that appearances of things in the external
world are located inside the nervous system of the
observer, so that we need not even enquire whether
appearances at places where there are no human
nervous systems are like appearances at places
where there are human nervous systems.58

Obviously the appearing, which occurs in the observer's nervous system,
cannot itself be what appears. And, I think, when the distinction bet-
ween what appears and its appearing is maintained the "purely physical"
nature of sense-data is well established. Russell says that logically it
is possible for a sense-datum to continue to exist when it is not
perceived. However, Russell's introduction of sensibilia and his
reliance on the principle of continuity suggest that sense-data do in
fact remain unchanged after becoming someone's data.

3.4 Judgments of Perception

On Russell's view sense-data may give rise to "truths of
perception" which when expressed in language are called "judgments of
perception" (PP. 113). A judgment of perception is derived from ac-
quaintance with complex objects and it makes its first appearance in
PM I (p. 43) and later appears in ONTF (pp. 156-7). Its special applica-
tion to sense-data is made clear in KARD where Russell includes "this-
before-that", "the-yellowness-of-this", etc. among complex sense-data
with which we are acquainted. The idea that we may be acquainted with
complex sense-data suggests that we may be acquainted with facts. In PP,
Russell explicitly mentions that one of the ways in which a complex fact
itself may be known is "by means of acquaintance with the complex fact
itself, which may (in a large sense) be called perception" (PP. 136; see
also TK. 9).
Since acquaintance with a complex fact involves a direct confrontation with the subject and the complex, perception has to be treated as a dyadic relation holding between the perceiver and the object perceived. Russell describes this situation as follows:

Let us consider a complex object composed of two parts a and b standing to each other in the relation R. The complex object "a-in-the-relation-R-to-b" may be capable of being perceived; when perceived, it is perceived as one object. Attention may show that it is complex, we then judge that a and b stand in the relation R. Such a judgment, being derived from perception by mere attention, may be called a "judgment of perception". This judgment of perception, considered as an actual occurrence, is a relation of four terms, namely a and b and R and the percipient. The perception, on the contrary, is a relation of two terms, namely "a-in-the-relation-R-to-b", and the percipient (PM I. 43).

This passage reveals two things viz. (a) the perceiver, say S, is directly related to the complex object by acquaintance;59 and (b) S's factual knowledge has to be expressed in a proposition. But this formulation raises a certain dilemma. As Wittgenstein comments on the analysis of perception: "To perceive a complex means to perceive that its constituents are related to one another in such and such a way";60 and if one tries to say how they are related, one's proposition will be based entirely on the perceived complex.61 However, Pears suggests that Russell can escape this dilemma by relying on the acquaintance with the complex object itself. As Russell continues:

Since an object of perception cannot be nothing, we cannot perceive "a-in-the-relation-R-to-b" unless a is in the relation R to b. Hence a judgment of perception, according to the above definition, must be true. This does not mean that, in a judgment which appears to us to be one of perception, we are sure of not being in error, since we may err in thinking that our judgment has really been derived merely by analysis of what was perceived (PM I. 43).

What Russell suggests is that when S perceives the complex datum "a-in-the-relation-R-to-b", he merely has to attend to it and analyze it
into its components in order to arrive at the judgment of perception that \(a\) stands in the relation \(R\) to \(b\). To have infallibility, Russell insists, \(S\) must confine his attention to the complex itself and make use of no other input. \(S\) only has to perceive the complex fact and analyze it into \(a\), \(R\) and \(b\) without utilizing any other information. If \(S\) follows this condition, then his judgment will be derived from what he perceives and so cannot be mistaken. But \(S\) may think that he has arrived at a judgment in this way, when in fact he has not, then he may be in error, i.e., error may arise when \(S\) misjudges his own judgment of perception.

However, Russell's \(PM\) I notion of a judgment of perception faces a serious problem. In Russell's example, "a-in-the-relation-\(R\)-to-b" is clearly a complex, but if perception is to be a dyadic relation, the complex has to be treated as a single object. But while restricted to the perceived complex, \(S\) has to attend and analyze the complex into its components to arrive at a judgment of perception. However, eventually the judgment has to end with \(S\) acquainted with \(a\), \(R\) and \(b\), because these are the constituents of the proposition that \(S\) judges as true. So as soon as a judgment is made, the complex is no longer treated as single and then perception must lose its claim as a dyadic relation and becomes a multiple relation holding between \(S\), \(a\), \(b\) and \(R\). And finally the possibility of error must infiltrate into the judgment of perception. So once we have the judgment we have the sort of thing that could significantly be said to be true or false, right or wrong although it could not be wrong. But by contrast "the perception is wrong" is nonsense.

In \(PP\), Russell seems to realize the problem involved in his \(PM\) I theory of judgment and departs from the \(PM\) I account by distinguishing between two kinds of judgment of perception. Firstly, there is the kind which simply asserts the existence of sense-data without, at the same time, analyzing them into their constituent parts. Russell calls them "self-evident" by which he means "absolute guarantee of truth" (\(PP\), 136). Secondly, there is the kind which analyzes the complex sense-datum into its constituent parts. For instance, if we perceive a round patch of red and then judge that "there is a round patch of red" the result is both a complex and a judgment. As Russell says, "[w]e see a patch of
red, and we judge 'there is such-and-such a patch of red'" (PP. 114).
Now whereas the first kind of judgment of perception involves no possi-
bility of error, the second kind may do. Russell gives the following
reason:

Suppose we first perceive the sun shining, which
is a complex fact, and thence proceed to make the
judgement 'the sun is shining'. In passing from
the perception to the judgement, it is necessary
to analyze the given complex fact: we have to
separate out 'the sun' and 'shining' as constitu-
ents of the fact. In this process it is possible
to commit an error; hence even where a fact has
the first or absolute kind of self-evidence, a
judgement believed to correspond to the fact is
not absolutely infallible, because it may not
really correspond to the fact (PP. 137-8).

The PP version is clearly a modification of the PM I version of
the judgment of perception, but still Russell's problem is not solved.
Rather, he introduces an apparently contradictory view of judgment of
perception. On the one hand, he says that judgments derived from
acquaintance with sense-data are "self-evident in a sense which ensures
infallibility" (PP. 135; see also pp. 136, 137). If asked how? the
answer will be: because of our acquaintance with the facts. On the other
hand, in the same page, we are told that "all our knowledge of truths is
infected with some degree of doubt" (PP. 135). And elsewhere Russell
explicitly mentions that in passing from what we are acquainted with
(perception) to what we judge, we must analyze the complex and in doing
so we are always liable to error. Russell's tension seems to lie in the
fact that on the one hand he thinks that given acquaintance with a fact,
the judgment we make about it must be true, infallible and without any
possibility of error. On the other hand, in saying this he is also
implying that for an assertion to be self-evident and infallible, there
must be actual correspondence between the assertion and the datum, but
it is always a matter of doubt whether in any given case this correspon-
dence does actually exist.

As a result of this tension, some significant changes of our
knowledge of complexes occurred after 1912. Russell no longer treats
sensation (acquaintance) as synonymous with perception and no longer regards perception as a dyadic relation. From now on the objects of sensation are particulars which are constituents of facts; whereas the objects of perception are facts (TK. 37). This change also leads Russell to make a distinction between a datum treated as a particular and as a fact. As Russell writes:

...sense gives acquaintance with particulars, and is thus a two-term relation in which the object can be named but not asserted, and is inherently incapable of truth or falsehood, whereas the observation of a complex fact, which may be suitably called perception, is not a two-term relation, but involves the propositional form on the object-side, and gives knowledge of a truth, not mere acquaintance with a particular (RSDP. 141).

So a particular is contrasted with a complex fact as being (a) named, not asserted; (b) the object is given to the senses, not to perceptions; and (c) single not multiple. Particulars and facts are two different things "facts are the sort of things that are asserted or denied by propositions, and are not properly entities at all in the same sense in which their constituents [particulars] are" (PLA. 270). And again, we "cannot properly name a fact" (PLA. 188; cf. also p. 270), whereas we can name a particular.

After 1912, Russell maintains that those sense-data which are particulars are known only in the relation of acquaintance. It seems that on Russell's present view, a sense-datum is not defined by its properties or relations. It is, to be sure, something which exemplifies them; but it itself is numerically distinct from all of them. He seems to be holding this view as early as in TK where he writes

When an object is in my present experience, then I am acquainted with it; it is not necessary for me to reflect upon my experience, or to observe that the object has the property of belonging to my experience, in order to be acquainted with it, but, on the contrary, the object itself is known to me without the need of any reflection on my part as to its properties or relations (TK. 39).

This passage supports the RSDP/PLA view that one can be acquainted with
particulars themselves without recognizing the properties they happen to exemplify. Indeed, Russell's notion of logically proper names as simple symbols tends to support the view that sense-data are particulars. In this sense, a symbol "a" is a logically proper name for a person S iff. "a" designates a directly and not through any description of a i.e., not through any of its properties. And this would be possible only if a could be given in acquaintance to S directly.

However, many Russell commentators\(^6\) cast doubt on whether sense-data are absolutely simple, incapable of further analysis. They claim that a patch of colour, though it looks simple, possesses a certain shape as well as a certain colour, and even it has a complex logical structure. I think that Russell does not deny this. There are instances which show that Russell himself does not think that there really are absolute simples which admit of no further analysis. Let us consider the following exchange:

Mr. Carr: You do not mean that in calling the thing complex, you have asserted that there really are simples?

Mr. Russell: No, I don't think that is necessarily implied (PLA. 202).

Now whereas Russell thinks that there may not be simples, he does not say that there may not be sense-data. It seems reasonable, then, that when he explicitly connects sense-data with particulars (cf. PLA. 274), he does not mean that they are simple in the sense of absolute simplicity (see supra, 2.3).

Coming back to the modification after 1912, Russell asserts that "the observation of complex fact", which he calls "perception", is not a two-term relation. But why this modification? The reason seems to be that Russell wants to give perception an intermediary cognitive status between acquaintance and judgment.\(^6\) This is demanded by his own system, in view of his holding the following:

1. Acquaintance (sensation) is a two-term relation between the subject and an object.

2. Some objects of acquaintance (sensation) may be complex, e.g.
"this-before-that", "the-yellowness-of-this", "a-in-the-relation-R-to-b", etc.

(3) A complex sense-datum (fact) is expressed by a proposition e.g. "this patch of red is to the left of that patch of blue".

Textual evidence shows that Russell holds all these views. But while he certainly holds (1) and (2) until 1913, he moves from (2) to (3) after 1912.

Russell came to realize that naming and asserting are two fundamentally exclusive ways in which language can signify things. He accuses Meinong of thinking that propositions are names for facts (PLA. 223) and points out that while puzzled by false propositions, Meinong is forced to say that there must be false facts, named by false propositions. Russell remarks that "the mere circumstance that there are two propositions [one true and one false] corresponding to each fact" is an absurd view (PLA. 187). Facts can be asserted but not be named:

... you cannot name then [facts] because they are not there to be named, although in another sense it is true that you cannot know the world unless you know the facts that make up the truths of the world; but the knowing of facts is a different sort of thing from the knowing of simples (PLA. 270).

Facts are not there to be named and be acquainted with whereas particulars are there to be named. So there can be acquaintance with particulars but not with facts. This makes Russell accept (3). Russell also seems to realize that holding (3) must involve modification of either (1) or (2), to make room for (3). It demands abandonment of either of them. However, Russell sticks to (1) (cf. TK. 58; RSDP. 145) but modified (2) to

(2a) Objects of acquaintance (sensation) are all particulars and all are signified by the way of being named.

This leaves complex objects or facts to propositions (for Russell, since all complexes are facts [cf. TK. 47, 79-80] and no facts can be named, no complex can be named).

After introducing perception as a mode of knowing complexes, acquaintance is mostly affected. We are no longer able to know facts
through acquaintance, which is strictly confined to knowing particulars. The objects of acquaintance can be named but can never be asserted. The reason is that a fact or a complex object "involves the propositional form on the object side". However, this seems to abolish "judgment of perception" and merge them to judgments. In PP, perception is distinguished from sensation or acquaintance as giving knowledge of truths as opposed to knowledge of things. The complex objects from which truths are obtained are given in sense. This is what he calls "judgment of perception". Now as soon as complexes are denied to acquaintance to accommodate (3) nothing remains as a judgment of perception and this seems to make judgment of perception and judgment indistinguishable. But in PLA, the following passage rules out this suggestion:

I am inclined to think that perception, as opposed to belief, does go straight to the fact and not through the proposition. When you perceive the fact you do not, of course, have error coming in, because the moment it is a fact that is your object error is excluded (PLA. 228).

This passage makes it clear that perception and judgment are not the same thing, for whereas perception admits of no error, judgment does. So it seems evident that (a) either Russell has changed his mind from RSDP to PLA or (b) in RSDP he did not want to merge perception to judgment. I suggest that (b) is true which is compatible with both PLA and to some extent with his earlier works.

In RSDP, when Russell claims that perception "is not a two-term relation" because it "involves the propositional form on the object-side" an important implicit distinction is made. Although it is true that there is nothing in the claim that perception "involves the propositional form on the object-side" which distinguishes perception from judgment, there is a subsequent claim that perception "gives knowledge of a truth". Now if the claim that perception "gives knowledge of a truth" is taken to mean that a proposition on the object side is always true, this would distinguish perception from judgment. The view that propositions expressing perception are self-evident is as old as RM. This character of perception distinguishes it both from acquaintance and
judgment and places perception somewhat in between them. In doing so perception itself becomes a judgment of perception of the first kind advocated in PP.

In Russell's epistemology there is a distinction between knowledge of things and knowledge of truths. Knowledge of things is knowledge by acquaintance or description. But acquaintance cannot admit of truth or falsehood because of the direct two-term relation between the subject and the object. On the other hand, perception gives knowledge of truths -- the truths having the quality of being self-evident and the knowledge being called intuitive. So it appears that the function of perception cannot be assigned either to acquaintance (sensation) or to judgment (of belief). If perception is regarded as a two-term relation between a subject and a fact, it will give us knowledge of things, not knowledge of truths. In that case perception would be indistinguishable from acquaintance. But since there is the "truth" involvement in perception it has to be distinguished. On the other hand, if perception is a judgment, then "self-evident" would have to be denied in which case it would be indistinguishable from judgment. However, judgment cannot give us "self-evident" truth. So perception is not judgment. Then where to place perception? It has to be allocated to an intermediary kind of knowledge which could not be filled by either acquaintance or judgment. Perception differs from acquaintance (sensation) by giving knowledge of truths, as opposed to knowledge of things, and it also differs from judgment as being a species of judgment of perception.
Notes to Chapter Three

1. In many of his philosophical writings Russell adopts the Cartesian method of doubt as a methodological principle. See PP. 18, 150-51; OKEW. 242; PLA. 181; IMT. 16; HK. 173.


However, Russell himself used the word "sense-datum" in "On the Relations of Number and Quantity", a paper read before the Aristotelian Society on April 5, 1897 (cf. The Athenaeum, # 3624, April 10, 1897, p. 483). The paper was later published in Mind, Vol. 6 (1897); the word "sense-datum" appears on page 326. In fact the word "sense-datum" was first introduced by Josiah Royce in 1885 in his The Religious Aspect of Philosophy (Boston, 1897, 7th edn.), p. 321. Roland Hall also traces this historical use of "sense-datum", but Hall misdates Royce's use of it as 1887. See Roland Hall, "The term 'Sense-datum'", Mind, Vol. 73(1964), p. 130.

3. Russell uses many different terms like "common sense object", "physical object", "material object", "object of physics", etc. to refer to all these objects. However, I shall use "physical object" to refer to all of them since Russell most frequently uses this term.

4. Price is very nearly correct when he says that all past theories have started with sense-data, but there are of course exceptions such as the theory of Thomas Reid.


Although different philosophers call them by different names, the general line of their arguments has been so standardized that they have been grouped together by Price and other modern writers
in order to form different variations of what has come to be known as "the argument from illusion". The argument from illusion forces epistemologists of this tradition to accept "sense-data" as the proper and correct answer to the question of what they immediately or directly perceive in any perceptual situation.


The theory of sense-data as a whole has been challenged with considerable opposition. J.L. Austin in *Sense and Sensibilia* (Oxford, 1962), R.J. Hirst, *The Problems of Perception* (London, New York, 1959) and others have provided a sustained attack on the sense-datum theory. Austin takes as "chief stalking-horse" in the discussion Ayer's *The Foundations of Empirical Knowledge* (Austin's argument is also directed against Price's *Perception* and Warrick's *The Berkeley Problems* [Middlesex, 1969 [reprint]]). Hirst's argument is mainly directed against Price's *Perception* (Hirst's objection is primarily against the causal theory of perception). A more recent defence of the theory is found in Frank Jackson, *Perception: A representative theory* (Cambridge, 1977).


8. Broad, *Scientific Thought*, p. 239.


15. Austin also admits this fact, cf. *ibid.*, p. 4. However, this is the only place in the whole book that Russell's name is mentioned.
18. *Sense and Sensibilia*, p. 22.
22. Austin, *Sense and Sensibilia*, p. 95n.
23. Here Russell must use all perceptual verbs *viz.* look, see, appear etc. in what Jackson calls "the phenomenal" sense as distinguished from epistemic and comparative sense. Jackson remarks, the principle that when something looks F to me, and I must see something F, is intended to cover only certain instantiations, which he calls the phenomenal use of looks F (see Jackson, *op.cit.*, p. 89. For a detailed discussion of phenomenal, epistemic and comparative senses of perceptual verbs see Jackson, *ibid.*, pp. 30-49.
24. Broad has expressed the same view when he says: "When I look at a penny from the side I am certainly aware of something; and it is certainly plausible to hold that this something is elliptical in the same plain sense in which a suitably bent piece of wire, looked at from straight above, is elliptical". See his *Scientific Thought*. p. 240.
30. Here (as in many other places), Russell is guilty of conflating sense-datum expression with physical-object expression. We are not acquainted with the face of a person any more than with the person
himself. What Russell means here is a sense-datum associated with
the frown on the person's face.

31. C.A. Fritz, Bertrand Russell's Construction of the External World

32. Russell picked up this thesis from Moore. In a paper entitled "The
Subject-Matter of Psychology", presented at the Aristotelian Socie-
ty meeting held on Dec. 6, 1909, Moore propounded the thesis that
sense-data are not mental. Russell took part in the discussion at
the end of the paper. Cf. Russell's "appointment Diary", Dec. 6,
1909; The Athenæum, # 4287, Dec. 25, 1909, p. 792.

33. Cf. Berkeley, A Treatise Concerning the Principles of Human Know-
ledge, in A New Theory of Vision and other Writings, pr. V., p. 115.
Berkeley holds this position explicitly in the 1710 edition of the
Principles.

34. On Russell's RSVD view, in this case, the object would not be
called a sense-datum, because there would be no mind to which it
could be given. Rather it would be the thing which could be sensed,
a "sensible" which could be a sense-datum only if some one sensed
it (infra, 3.3).

35. Russell, "The Nature of Sense-data -- A Reply to Dawes Hicks",
p. 78.

36. Possibly in speaking of an "out-and-out" realist Russell had Moore
in mind. Moore seems to hold such a position in his 1910 lecture on
"Sense-data". Cf. his "Sense-data" in Some Main Problems of Philo-
sophy, pp. 28-51, especially pp. 33-5. Moore's later position also
fits this characterization. Cf. his "A Defence of Common Sense" in
Philosophical Papers (London, New York, 1959 [the paper was first
published in 1925]), p. 54.

37. See also, Russell, "Letter from Bertrand Russell to the Editor of

38. Cf. Russell, "Meinong's Theory of Complexes and Assumptions (I)",
p. 213; "Meinong's Theory of Complexes and Assumptions (III)",

39. See Nicholas Griffin "Russell's Critique of Meinong's Theory of
p. 381.

40. Price also holds a similar view when he says that a sense-datum "is
private to the mind which sees it". See his Perception, p. 145,
also 274.

41. Elsewhere Russell remarks that "the sense-data of others cannot be
known without some element of inference"; we have only "the evi-
dence of [their] testimony, resting ultimately upon the analogical argument in favour of minds other than my own" (RSDP. 150).


43. Ibid., f. 35.

44. Ibid., f. 32.

45. Ibid., f. 14. Although Russell has not yet fully developed the sensibilia theory, here Russell is talking about sensibilia. From now on he reserves "sense-data" for sensed sensibilia, in which case by definition, sense-data must be sensed, but sensibilia need not be so (see infra, 3.3).

46. See his "Is There 'Knowledge by Acquaintance'?” pp. 159-78.

47. Ibid., p. 168.

48. My discussion of Russell's theory of sensibilia, in the present context, will be incomplete. Here only the nature of sensibilia will be discussed. The question as to why Russell introduces the theory and what role it plays in his epistemology will not be discussed until in chapter five (see infra, 5.3).

49. "On Matter", ff. 30-31. Cf. also ff. 14, 35. The same view is also found in "Here and There in Sensation", [1912], unpublished manuscript, R.A. file # 220.011420, f. 4.


52. D.M. Armstrong attacks the notion of unsensed sensibilia. He argues, not only that such entities do not exist but that they cannot exist. The reason is that, for Armstrong and others sense-data are mental, that is to say, the relation of sense-data to the perceiver is the same as pain to a sentient being. As pain has no independent existence apart from the agent who is in pain, likewise the sense-data are dependent for their existence on the perceiver. See his Perception and the Physical World (London, New York, 1970), pp. 35-7. This view is also held by Ayer in Russell and Moore: The Analytical Heritage, pp. 57-60.


54. Michael Lockwood has also made a similar criticism against Ayer. See his "What Was Russell's Neutral Monism", Midwest Studies in


57. Pears, *Bertrand Russell and the British Tradition in Philosophy*, p. 36


59. In this passage, although Russell does not call the relation between the percipient and the complex object "acquaintance" this is what he means. See Pears, *Bertrand Russell and the British Tradition in Philosophy*, p. 186; Questions in the Philosophy of Mind, p. 231.


4.1 Russell's Rejection of Naive Realism

Briefly stated, I take naive realism to be the simplest form of direct realism, namely, the view that physical objects, such as tables, chairs, houses, trees and the rest, are immediately and directly presented to us in sense perception and really are exactly as they appear to us. Although the position may be formulated in slightly different ways, it holds that sensible qualities are the intrinsic properties of physical objects. In PP Russell does not use the term "naive realism"; but his arguments surely go against the naive realist's position. Here are some of the passages: "the real table, if there is one, is not the same as what we immediately experience by sight or touch or hearing" (PP. 11). "Thus what we directly see and feel is merely 'appearance'" (PP. 16), not the real object. And again, "different people see the same object as of different shapes, according to their point of view" (PP. 29). Against the naive realist who asserts that physical objects are perceived, Russell maintains that what we always perceive are sense-data, "such things as colours, sounds, smells, hardnsses, roughnesses, and so on" (PP. 12). Taking the example of perceiving a table, Russell says that "we cannot say that the table is the sense-data, or even that the sense-data are directly properties of the table" (PP. 12).

Relying on perceptual relativity, Russell maintains that our direct perception is always restricted to sense-data, and does not include physical objects. He agrees with Berkeley and Hume that it is
false to say that we immediately perceive by sight anything other than light, colours and figures.\(^1\) Similarly, Moore once remarked that "[d]ouble images have convinced me that the sense-datum of which I am speaking when I say 'That's a sofa' is not identical with any part of the surface of the sofa".\(^2\) Russell, and sense-datum philosophers in general, maintain that veridical and non-veridical perceptions are phenomenologically indistinguishable. The underlying thesis is given its clearest expression in Plato's *Theaetetus*\(^3\) that any veridical perception could in principle be duplicated by an exactly similar delusive perception. So sense-data cannot directly reveal the true nature of physical objects; nor are they parts of the surfaces of physical objects.\(^4\)

One might argue that the fact that the table sometimes appears to be what it is not does not rule out the possibility that it will ever appear to the percipient as it really is. So the relativity of perception does not prove that physical objects cannot ever be directly perceived. From different points of view the table appears to be a variety of shapes. Then why not assume that one of them is the shape it really is?\(^5\) Russell must reply that even if we grant that the table may sometimes appear as it really is, what we directly perceive is always sense-data, not the table itself. When we see the round table as round, i.e., when the table looks round, what sight reveals to us is not the round table itself, but a round appearance which is not identical with part of the surface of the table. Although this may seem paradoxical, Russell takes this to be the case. Russell supplements his case with a more sophisticated argument. We see physical objects as a result of light rays falling on the objects and then striking the retina. Now, light takes time to travel. From this fact it may be argued that we do not perceive physical objects as they are at the time of perception, but at best as they were. In cases where the object is very close to the percipient, this time gap may be negligible.\(^6\) But there are instances where the object is distant. Russell cites the following instance:

...it takes about eight minutes for the sun's light to reach us; thus, when we see the sun we are seeing the sun of eight minutes ago. So far as our sense-data afford evidence as to the physical sun they afford evidence as to the physical sun of
eight minutes ago; if the physical sun had ceased to exist within the last eight minutes, that would make no difference to the sense-data which we call 'seeing the sun'. This affords a fresh illustration of the necessity of distinguishing between sense-data and physical objects (PP. 33, emphasis added; see also UCM. 131).

In the opening page of PP Russell challenges the naive realists' belief about physical objects:

In daily life, we assume as certain many things which, on a closer scrutiny, are found to be so full of apparent contradictions that only a great amount of thought enables us to know what it is that we really may believe (PP. 7).

The arguments on which Russell relies to show that there are contradictions in the naive realists' belief are of two kinds, viz. the argument from illusion and the argument from science.

4.1.1 The argument from illusion

The argument from illusion is also known as the argument from common sense and it is based on empirical observation. In PP Russell shows a contradiction between the way a physical object, say, a table, appears and the way it really is as dictated by common sense. There are instances of variations in the appearance of the table which may be due to the observer's point of view, the condition of light, the mental and physical states of the observer or the presence of some distorting medium. But, although the table looks different from different points of view, common sense keeps us believing that there is only one table which is the same for all perceivers who look at it.

The contradiction in the naive realists' position arises from the fact that there is a significant difference between the way the table appears and the way common sense conceives it to be. As Russell says:

... the sense-data are private to each separate person; what is immediately present to the sight of one is not immediately present to the sight of another: they all see things from slightly different points of view, and therefore see them slight-
ly differently. Thus, if there are to be public neutral objects, which can be in some sense known to many different people, there must be something over and above the private and particular sense-data which appear to various people (PP. 20-1).

The same view is expressed in an unpublished manuscript where Russell explicitly mentions that the difficulties of naive realism arise from such facts as the colours and shapes of objects appear different from different points of view. Hence, when to one observer a thing looks white, and to another brown, both cannot see truly. Russell seems to suggest that if naive realism is accepted then it would imply that the following statements are all true:

(1) There is only one table which is the same for any individual who looks at it.

(2) The table is as it appears to be.

(3) The table does not appear exactly alike to the same individual from different points of view or to two individuals.

I completely agree with Russell that these three statements are certainly an inconsistent triad (given, what is obvious, that the table cannot have all the properties it appears to have). If two of them are true, then the third must be false. If (1) and (2) are true, then the table must appear exactly alike to the same person from different points of view or to any two observers at the same time, which it does not. If (2) and (3) are true, then it cannot be true that there is only one table which is the same for all normal observers. And again if (1) and (3) are true, then the table is not as it appears to be. Russell finds the inconsistent triad in the naive realists' position, and so one of the three statements must be regarded as false on that theory. The argument is a reductio argument against naive realism, i.e., all three statements are true on naive realism which shows that naive realism is false. Such difficulties in common sense upset the naive realists' claim that we directly perceive physical objects. However, one might argue that the argument against naive realism is not conclusive, for it entails consequences which are unacceptable, i.e., would not be accepted even by Russell, except for the sake of argument. If one accepts
Russell's basis for rejecting naive realism, one is committed to the view that no description of a table can be any more reliable and correct than another. It is possible to suppose that two states of the same person at different times or of two different persons at the same time, do differ so fundamentally despite their phenomenal similarities. However, all these considerations are weakened when we notice that the argument from illusion acts as a reminder that there is something awkward about this and naive realism is committed to this awkward situation.

4.1.2 The argument from science

The second kind of contradiction, found in the naive realists' belief about ordinary physical objects, consists in the conflicts between scientific truths and our common sense beliefs. Russell has been influenced by the view that modern science, and in particular physics, has shown that the real world is far different from what we suppose it to be in common sense and contains no such stable and enduring objects as the naive realists suppose. The scientific account of perception is quite inconsistent with the naive realists' view of physical objects. Naive realists suggest that when we look at the table we see it and see it directly. But scientific investigation of the world shows that the nature of the table is very different from what it appears to be. Physicists, physiologists and neurologists give us reason to believe that the stable, solid, enduring, well-defined, coloured, tangible objects around us, including our own bodies, are actually vast systems of tiny clusters of energy having few, if any, of the properties that common sense tells us about. They suggest that what we see, when we look at the table, is an event occurring in the brain, and this event is linked with the physical object in a causal process. The causal process of perception is a necessary condition for any occurrence of veridical perception. In the case of visual perception the chain is:

\[
\text{physical objects} \rightarrow \text{light rays} \rightarrow \text{retina} \rightarrow \text{optic nerves} \rightarrow \text{central nervous system} \rightarrow \text{appearances}
\]

(cf. PP. 35).
Thus the appearance (of the table), which is the effect of nothing but the stimulation of certain brain processes, is far removed from the objects at the other end of the causal chain. So in visual perception we are directly aware of nothing but appearances or sense-data. This goes straight against the naive realists' claim. In a later work Russell puts the argument from science as follows: "[n]aive realism leads to physics, and physics, if true, shows that naive realism is false. Therefore naive realism, if true, is false; therefore it is false" (IMT. 15). The reason why physics is thought to falsify naive realism has to do with Russell's scientific prejudice. This prejudice serves as the background of his analysis of the difference between what the object appears to be and the qualities which it is supposed really to possess. As he says:

Common sense says: "I see a brown table." It will agree to both the statements: "I see a table" and "I see something brown." Since, according to physics, tables have no colour, we must either (a) deny physics, or (b) deny that I see a table, or (c) deny that I see something brown... I have chosen (b)... (Reply. 705).

Against naive realism Russell's arguments seem conclusive. His argument from illusion shows that anybody who claims that the "real" physical objects are directly perceptible must explain how the same person at different times and different persons at the same time have conflicting perceptions of these objects. Naive realism fails to give any consistent account of such a demand. On the other hand, the evidence from science, viz. physics, physiology and neurology, has clearly demonstrated the causal process of perception as a necessary condition for any perception to occur. From the relativity of perception and the scientific account of perception Russell concludes that we can never directly experience physical objects, but that we directly experience sense-data or appearances. Here Russell is making a much stronger claim. Refutation of naive realism is not refutation of direct realism. Although Russell's arguments are intended to refute naive realism only, they also seem to go against direct realism, since, on Russell's view, the sense-data we see are represented as cutting off our view of
physical objects outside our private experience. These sense-data are epistemologically as well as ontologically distinct from physical objects and even from the surfaces of physical objects.

4.2 The Existence and Nature of Physical Objects

In chapter three we have seen that Russell's approach to the problem of perception is similar to Descartes'. Like Descartes he tries to find certainty. By a number of arguments he then shows that the last refuge of certitude is never physical objects, but sense-data, the "things that are immediately known in sensation: such things as colours, sounds, smells, hardnesses, roughnesses, and so on" (PP. 12). We have also seen in our previous section that this goes against naive realism. Against naive realism Russell's argument is partly based upon the fact that the table may present different appearances to different observers according as they look at it from different points of view or under different lights or under different psycho-physical conditions. What Russell insists on is that whenever, from whichever direction, we look at the table, it looks somehow to us and its looking somehow to us always involves directly seeing only a sense-datum.

Having stated that whenever we look at the table we directly see only sense-data, Russell tells us that we cannot see the table. It is not that sometimes we see sense-data and sometimes we see the table, rather we invariably see sense-data. When we concentrate on it what we find is: "To the eye it is oblong, brown and shiny, to the touch it is smooth and cool and hard; when I tap it, it gives out a wooden sound" (PP. 8). All these are sense-data and are directly given in sensation. Russell maintains that sensation "cannot be supposed to reveal directly any definite property of the table" (PP. 11). So he concludes that a real table, if there is one, is not the same as what we experience through the senses, and is not immediately known to us at all. But as soon as it is concluded that the immediate objects of sensation are sense-data, a fundamental problem arises: what is their relationship to
the physical object, to the table? How is it possible to pass from sense-data to the physical object?

On Russell's view, since physical objects are not immediately perceived and since they are not objects of acquaintance, any assertion about physical objects is a theoretical inference from the sense-data we directly perceive. But before he explains how the physical object, the table, is known, Russell has to decide (α) whether there is a real table at all and if there is, (β) what sort of thing it can be (PP. 11). Russell raises these questions immediately after he asserts that the real table, if there is one, has to be inferred from sense-data. This inference is made on the basis of two interconnected subsidiary claims which presuppose the answer to (α) as yes, viz. that physical objects are the causes of sense-data and that sense-data are signs of physical objects. Thus while speaking of the various sense-data of the table Russell says that though they cannot be supposed to reveal the true properties of the table, they can "be signs of some property which perhaps causes all the sensations" (PP. 11). That is to say, the relation between the table and sense-data is a causal one in which the effects (sense-data) represent their causes (properties of the table).

In PP, while Russell does not go into details, he propounds a representative type of realism of a Lockean variety espousing a causal theory of perception according to which physical objects are, through the medium of sense-data, the causes of our perception (PP. 23, 27). Our sense-data are produced by physical objects, that is to say, it is because of the physical objects that different observers can see the "same" thing; the stability and orderliness existing among our sensations are due to the physical objects; and they explain easily the basis of human perceptual communication. As Russell says:

... it is the fact that different people have similar sense-data, and that one person in a given place at different times has similar sense-data, which makes us suppose that over and above the sense-data there is a permanent public object which underlies or causes the sense-data of various people at various times (PP. 21).

Elsewhere Russell writes that although "physical objects cannot be quite
like our sense-data" (in fact physical objects cannot be at all like sense-data), they "may be regarded as causing our sensations [sense-data]" (PP. 30). And again Russell seems to push the inference to physical objects via his claims that sense-data may be signs of physical objects. Thus he says, "what we directly see and feel is merely 'appearance' [sense-data], which we believe to be a sign of some 'reality' behind" (PP. 16). Again he asks: "Granted that we are certain of our sense-data, have we any reason for regarding them as signs of the existence of something else, which we can call the physical object?" (PP. 19-20). In other words, when we have enumerated all the sense-data which we should regard as appearances of the physical object, such as a table, is there anything left over as something which is not a sense-datum, but a real physical table of some kind?

Having posed the problem, Russell gives the following reasons to convince us that there must be such a table behind our sense-data which causes them.

(1) Our sense-data are private, so no two people can see or feel or hear the same sense-data. But when one sells the table, one does not sell one's own sense-data; yet something is sold. Again, when the sense-data cease to exist, the table does not cease to exist.

What can be bought and sold and pushed about and have a cloth laid on it, and so on, cannot be a mere collection of sense-data. If the cloth completely hides the table, we shall derive no sense-data from the table, and therefore, if the table were merely sense-data, it would have ceased to exist, and the cloth would be suspended in empty air, resting, by a miracle, in the place where the table formerly was (PP. 20).

So there is a real physical table behind our sense-data which causes them.

(2) When two people look at the table, they do not have the same sense-data since both see the table from their own points of view. Yet they can well identify the table to be the "same" table. Russell says, "[o]ne great reason why it is felt that we must secure a physical object [table] in addition to the sense-data, is that we want the same object
for different people" (PP. 20). However, when he uses "same" table he
does not mean that there is an identical table which is seen by dif-
f erent people (cf. infra, 5.4). What he intends is that they see quali-
 tatively similar sense-data caused by the same table. As he suggests,
"although different people may see the table slightly differently, still
they all see more or less similar things when they look at the table"
(PP. 21). He seems to imply that since, if challenged, different
people can agree on the description of what they see, we can say that
they are seeing the same object. Now since in perceiving the table we
only perceive sense-data and since sense-data are private, unless these
private sense-data are signs of an independently existing table, there
would not be the "same" table which different people can see.

(3) Different people have similar sense-data by which they can
identify the "same" table. And again, the same person in a given place
at a different time has similar sense-data. Therefore, Russell con-
cludes, we "suppose that over and above the sense-data there is a
permanent public object [table] which underlies or causes the sense-data
of various people at various times" (PP. 21).

Previously we have noted that Russell explicitly maintains that
whenever he perceives what he perceives immediately are sense-data, and
never physical objects. The reason is that every time he wants to
perceive physical objects he ends, much like Hume, with sense-data and
can never catch hold of the objects. That is to say, physical objects
are logically inaccessible to perception. We never actually see physical
objects regardless of how strong the impression to the contrary may be.
Now this view seems to lead to a difficulty of making sense of Russell's
assertion that there are external or public objects which are the "same"
for more than one observer. It certainly sounds odd to call an object
external or public if it is asserted that no one perceives it in any way
at all. Russell's examples of these objects are the table, the sun, the
cat, the house and so on. But what he means by them is not clear. More-
over, his calling them external or public seems to suggest that the pos-
sibility of perceiving physical objects, in some way, is not completely
ruled out. This seems to have been in his mind when he says that "when I
am seeing and touching my table", what I am acquainted with are "the sense-data that make up the appearance of my table -- its colour, shape, hardness, smoothness, etc." (PP. 46; emphasis added). This passage, at face value, indicates that we do, in fact, perceive the table, although we may not perceive it in the same sense as we perceive its sense-data. We perceive the table in so far as we perceive the sense-data "of" it.

Although Russell does not use the term "indirect perception", he might say that his perception of the table is an indirect perception in that he sees it only in the sense that he sees effects of, something produced by but distinct from, the table itself. But neither Russell nor any other representative realist is very clear about what they actually mean by "seeing" or "touching" the table. Strictly speaking, they cannot mean any more than that we always perceive sense-data and can never perceive the table. The reason is that not only does "seeing" or "touching" amount to seeing or touching a coloured shape caused by, an effect of, the table; but we "see" or "touch" the table or other objects only in so far as we see the colour, or the shape or size caused by it. Now since the sense-data are what we actually perceive when we "perceive" the table, and since we "perceive" the table in so far as we perceive sense-data "of" it, it is sense-data which explains what we perceive and not the table.

Then how to make sense of Russell's assertion that the table is a public object which can be seen or touched? I suggest that Russell uses such expressions for simplicity of expression. It is natural and highly convenient to speak of seeing or touching the table and other physical objects while we only see or touch sense-data; but such an assertion should be understood as a mere façon de parler. When Russell calls the table external or public he does not mean that the table, if there is one, can really be seen or touched. The table is external or public in the sense that it produces different but similar sense-data each of which is private to the perceiver. Thus although in a Pickwickian sense, Russell says that we can see or touch the table, strictly speaking we can never, in any way, see the table but only sense-data caused by the table.
Although in no sense do we perceive it, for various reasons Russell believes that the existence of the table is not quite unfounded. But he also insists that we cannot prove that physical objects exist over and above our sense-data. We have complete certainty about our own sense-data, but not about the physical objects. There is no logically necessary connection between the existence of our sense-data and the existence of physical objects. "No logical absurdity results from the hypothesis that the world consists of myself and my thoughts and feelings and sensations, and that everything else is merely fancy" (PP. 22). But Russell is inclined to find "in our own purely private experiences, characteristics which show, or tend to show, that there are in the world things other than ourselves and our private experiences" (PP. 22). But the procedure cannot be a logical one. What Russell tries to show is that there are good, if not conclusive, reasons for accepting the hypothesis that physical objects exist in the external world independently of our perception. The strongest of these reasons are (4) that it is the simplest hypothesis, and (5) that it is an instinctive belief. Both of these are applications of an inductive principle or of what might be called an "inference to the best explanation".

(4) One of the most important reasons for supposing the independent existence of physical objects is that our experience is most simply explained on that hypothesis. It is a simple hypothesis that "there really are objects independent of us, whose action on us causes our sensation" (PP. 23). Such a belief helps us to fill up certain gaps in our sense experience. Russell both appeals to and supports the simplicity hypothesis with an example of a moving cat. I see a cat at the corner of the room at one moment. At another moment it goes into another room out of my sight. But after a while, when it returns, I see it again. But if I say that the cat is nothing more than a series of sense-data, we cannot admit that it existed during the interval when I did not see it because at such a time the cat was not present to me as sense-data. This view seems absurd. It seems absurd to say that the cat ceased to exist when I did not see it and then "suddenly sprang into being in a new place" (PP. 23). To avoid such absurdity, Russell con-
tends, we take the natural view dictated by the principle of simplicity (a variant of an inductive principle) "that there really are objects other than ourselves and our sense-data which have an existence not dependent upon our perceiving them" (PP. 24).

Our belief in physical objects existing independently of our perception leads us to simplify and systematize our account of empirical knowledge. Such a hypothesis is the simplest one which can account for the facts. The hypothesis that there exist physical objects apart from and independent of our sense-data explains, on the one hand, the gaps in our sense-data. The moving cat example suggests that between my separate sensations of the cat sense-data, the real cat moved from one part of the room to the other. It also explains, on the other hand, the causal properties, e.g.; "if the cat consists only of sense-data, it cannot be hungry, since no hunger but my own can be a datum to me" (PP. 23). The simplest hypothesis shows that although Russell rejects naïve realism, he tries to protect the common sense view. The hypothesis seems to provide the "philosophical" justification of the common sense view that physical objects cause our sense-data. 11

(5) Russell further strengthens his view by pointing out that we *instinctively* believe that we see, touch and smell physical objects. "We find this belief ready in ourselves as soon as we begin to reflect" (PP. 24). However, Russell seems to realize that this instinctive belief cannot stand up to the arguments he has brought against it in rejecting naïve realism. So he shifts the defence to the view that sense-data are caused by and correspond to physical objects (PP. 24). As a matter of fact, an appeal to instinctive belief is partly an appeal to coherence which makes the belief more reasonable. It is more reasonable to suppose that, since we are never acquainted with physical objects but always with sense-data, these sense-data are the results of something external to ourselves and acting on our sense-organs. Russell admits that there is no logical contradiction in supposing that our instinctive beliefs are false. But he still thinks they are worthy of acceptance, since the contrary hypothesis does not seem to be coherent with the facts.
Russell finds "no good reason for rejecting" our instinctive belief that there are physical objects corresponding to and causing our sense-data. Rather it "leads to simplify and systematize" the task of explaining many phenomena. "We may therefore admit", Russell contends, "that the external world does really exist, and is not wholly dependent for its existence upon our continuing to perceive it" (PP. 24-5). However, it should be noted here that Russell does not accept instinctive belief unconditionally. Rather he admits that our instinctive beliefs can be mistaken and hence are open to doubt and investigation. So he proposes a test for sorting out mistaken and doubtful instinctive beliefs:

...by organizing our instinctive beliefs and their consequences, by considering which among them is most possible, if necessary, to modify or abandon, we can arrive, on the basis of accepting as our sole data what we instinctively believe, at an orderly systematic organization of our knowledge, in which, though the possibility of error remains, its likelihood is diminished by the interrelation of the parts and by the critical scrutiny which has preceded acquiescence (PP. 25-6).

One of Russell's instinctive beliefs is "the principle of induction" which presupposes the law of the uniformity of nature that the future will be like the past (PP. 68). But Russell agrees with Hume that such a principle cannot be logically proved to be true either deductively or by experience. So we have two options open: "we must either accept the inductive principle on the ground of its intrinsic evidence, or forgo all justification of our expectations about the future" (PP. 68). Russell accepts the first option on the ground that the general principles of science, such as the law of causality (every event must have a cause) and the beliefs of our daily life (physical objects exist independently of our perception of them) are completely dependent on such inductive principles. "All such general principles are believed because mankind have found innumerable instances of their truth and no instances of their falsehood" (PP. 69). We accept inference to physical objects from sense-data on the same footing as we accept the principle of induction. Thus although it is not by logical inference that we come
to believe in the existence of physical objects, we do in fact make such inference instinctively. And as long as our instinctive belief does not clash with others there "can never be any reason for rejecting" it (PP. 25).

Russell's final position in PP is that we have to infer the existence of physical objects, because the contrary hypothesis must lead to solipsism and to scepticism. He admits that we all have an instinctive unlearned tendency to infer the existence of an independent external world, because such an inference presents us with no difficulties but rather simplifies our outlook of life. However, I think that Russell's position is not dogmatic. Rather he puts it forth as a hypothesis. Since physical objects are not given in sensations, they are inferred from what is given in sensations, i.e., from sense-data. This instinctive belief is supported by its simplicity and intelligibility. A continuous, coherent and gap-free external world is much simpler to understand than the intermittent world of sense-data.

It seems fair enough to admit that there are physical objects in that the existence of physical objects provides the simplest hypothesis and belief in it is an instinctive belief. Now given that there are physical objects, what is their nature? As to the answer to this question Russell mainly relies on physical science. He admits that what science says about the nature of the physical objects, such as a table, is "somewhat incomplete ... and in part still very hypothetical, but yet deserving of respect so far as it goes" (PP. 27). But Russell does not say why the answer physical science gives should be deserving of respect. I think this is because of his bias in favour of science. Then, what is the nature of the table according to science? Science tells us that it is a "vast collection of electric charges in violent motion" (PP. 16). Science has reduced all the physical phenomena, which is called matter, into particles in motion (PP. 28). Now as a physical object, and therefore as an instance of matter, the table must come under the description of particles in motion. But what we know (following Russell) about the table is in terms of sense-data, not of particles. On the other hand, what the scientist knows about it is in terms of particles.
So there is a *gap* between what we know about the world and what the scientist knows about it.

Science denies that sense-data form any part of the physical world. But it does not deny that there are sense-data. Science admits that there are physical causes (presumably matter) of sense-data (*PP*. 29). These physical causes of our sense-data, unknown to our sensory faculties, exist for science in an all-embracing space equally unperceived by the senses. This space is called the "physical" space where the physical object exists. Russell then contrasts this space with "apparent" space where the sense-data of individual observers are ordered. The physical space is public whereas the apparent space is private to the peripient. We are never acquainted with the physical spaces but we *infer* that there are physical spaces on the ground that they are the spaces in which the physical objects are embedded. But how can we bridge the world of sense and the world of science? Here comes the (tentative) solution: if there is an all embracing physical space in which there are physical objects, the relative positions of physical objects in this physical space must have similar correspondence with the relative positions of sense-data in our private spaces. Russell contends that we have no difficulty in supposing this to be the case.

If we see on a road one house nearer to us than another, our other senses will bear out the view that it is nearer; for example, it will be reached sooner if we walk along the road. Other people will agree that the house which looks nearer to us is nearer; the ordnance map will take the same view; and thus everything points to a spatial relation between the houses corresponding to the relation between the sense-data which we see when we look at the houses (*PP*. 31).

The same is true about the table. When I look at it, I find that what is given in my sense-data agrees with what other people see as well as with the table. "Thus we may assume that there is a physical space in which physical objects have spatial relations corresponding to those which the corresponding sense-data have in our private spaces" (*PP*. 31).

In our everyday life we speak of perceiving public, permanent physical objects. After proper scrutiny we see that what we really
perceive are momentary private sense-data. However, Russell granted,
without having proved, that our sense-data "are really signs of the
existence of something independent of us and our perceptions" (PP. 27).
Such a belief leads us to accept the theories of physics which enable us
to control and predict some features of the physical world. We assume
that sensible objects, which we perceive as differing in colour, shape
or size have physical correlates whose nature we cannot directly know,
but which may be assumed to differ in ways that correspond to some of
the differences of our sense-data. What then is the nature of the table?
Following Locke\textsuperscript{13} Russell suggests that there is in the object some
quality which corresponds to brown when we see brown while looking at
the table. The same is true of size, shape, etc. When we see one table
as square and another round, there must be in the object something
corresponding to squareness and roundness. In the same way when we see
one object bigger than another, we suppose that there must be, between
the objects themselves, some relations which correspond to the perceived
relation "bigger than". But in all these cases the intrinsic nature of
the objects is quite inconceivable.

One might raise a problem as to whether there is something cor-
responding to ellipticity when we see a round table as elliptical. The
problem is with the philosopher, not with a person of common sense. A
common sense person does not suppose that if the round table appears
elliptical from a particular point of view, it must have something
corresponding to ellipticity. However, the essence of the philosopher's
problem is that it does not seem possible that the same numerically
identical table should have qualities which are incompatible with one
another. That is to say, the same table cannot be both round and
elliptical. Then how to account for the elliptical appearance? Russell
agrees with common sense and denies that the incompatible quality is in
the table. To resolve the apparent incompatibility, Russell would sug-
gest that both the round datum and the elliptical datum are in different
private spaces. Now since we must admit that the table must have a shape
(which we may call its public shape), its real shape must be in public
space. But we never know with certainty what shape it is, since we do
not perceive the real shape. However, we suppose that there must be some quality in the table which corresponds to roundness more than it does to ellipticity. Now since the roundness we see has at least structural correlation with the shape the table has, we can say that the table is round, not elliptical, even when it looks elliptical from a certain point of view.

We are never directly acquainted with the quality of the object which makes it look round, square, elliptical or bigger than. We can know no more than "the properties of the relations required to preserve the correspondence with sense-data, but we cannot know the nature of the terms between which the relations hold" (PP. 32). Physics shows that the only properties which we can assign to physical objects "are position in space, and the power of motion according to the laws of motion" (PP. 28). Russell seems to suggest that what we are capable of knowing about such properties amounts to no more than the spatial and temporal relations of the physical objects themselves and the relations which co-ordinate them with those features of our sense-data which they cause. These relational properties are the invariant features of the physical world which are co-ordinated with the world of sense. Russell says:

... if a regiment of men are marching along a road, the shape of the regiment will look different from different points of view, but the men will appear arranged in the same order from all points of view. Hence we regard the order as true also in physical space, whereas the shape is only supposed to correspond to the physical space so far as is required for the preservation of the order (PP. 32-3).

As O'Connor suggests this one to one matching of entities, sensory and physical, and of relations between sensible objects and inferred relations between their hypothesised physical counterparts is what Russell means by "correspondence".

As to the nature of physical objects Russell's final position is an uneasy acceptance of agnosticism. We cannot know anything about the intrinsic nature of physical objects. No arguments can prove that we can ever know what the physical object, i.e., the table, is in itself. How-
ever, Russell does not end with Kant's conclusion that we are left with a "thing-in-itself". Rather he suggests that we can know certain structural properties of physical objects. These structural properties are derived from the hypothesis that physical objects exist and the correspondences between physical objects and sense-data. What we are agnostic about are the intrinsic properties themselves which make the objects reveal their structural properties.

4.3 Knowledge by Description

We have seen that as soon as Russell introduces sense-data he cuts himself off from physical objects. Consequently he has to admit that

although the relations of physical objects have all sorts of knowable properties, derived from their correspondence with the relations of sense-data, the physical objects themselves remain unknown in their intrinsic nature, so far at least as can be discovered by means of the senses (PP. 34).

We never are directly acquainted with physical objects. Then, do we have any means of knowing about physical objects? On Russell's view, we have. Acquaintance is not a prerequisite for making a knowledge claim. We can have knowledge of physical objects by description. We know physical objects only by description, as the objects which cause our sense-data. When talking about knowledge by description Russell limits himself to definite descriptions, where one and only one thing can fit the description. He then says, "we may know that the so-and-so exists when we are not acquainted with any object which we know to be the so-and-so, and even when we are not acquainted with any object which, in fact, is the so-and-so" (PP. 54; KAKD. 202). However, before I discuss how physical objects may be known by description, I should state, briefly, what Russell's theory of descriptions is, since Russell has made use of this theory in his analysis of our knowledge of physical objects.

The fundamental principle of Russell's theory of descriptions is that definite descriptions, e.g., "the present king of France", "the
centre of mass of the solar system", "the author of Waverley", are not names for entities, although their being used as the grammatical subject of the sentences in which they occur makes them look as if they are. Russell uses the theory of descriptions as a device for the elimination of these descriptions. The theory allows him to replace a definite description in context by propositional functions, so that we can translate a sentence containing a definite description into a sentence in which such a description does not occur. Definite descriptions have the grammatical form "the φx", which Russell symbolizes as "(ι x)(φx)". "The" is always used strictly with the implication of uniqueness, i.e., that there is one and only one individual which satisfies the function represented by "(φx)" (PM I. 30). The uniqueness condition can be expressed as

\[(1) \ (y)(φx \equiv y = x)\]

(1) reads for any y, φx is true when y is identical with x, but not otherwise.

According to Russell, all definite descriptions are "incomplete symbols". An incomplete symbol is one "which is not supposed to have any meaning in isolation, but is only defined in certain contexts" (PM I. 66; cf. OD. 42-3; IMP. 170; PLA. 253). Although an incomplete symbol functions as the grammatical subject of a sentence in which it occurs, the sentence can be translated in such a way that the incomplete symbol no longer appears as the subject. We may say, roughly, that a symbol S is an incomplete symbol of a sentence p iff. S has, at least, the following characteristics:

(2) S occurs in p as a distinct element which is classified as a grammatical subject or object; and

(3) the result of a proper analysis of p yields another sentence q which contains no grammatically significant element (phrase) corresponding to S.

A definite description, say, "the author of Waverley" (which can be symbolized as "(ι x)(Wx)"), according to Russell, "is always an incomplete symbol" (PM I. 67). To show how to resolve or analyze such symbols in meaningful symbolic contexts, let us consider the sentence
(4) Scott is the author of *Waverley*.
(4) can be expressed in the form of an identity sentence,
(5) \( \text{Scott} = \text{the author of } Waverley \).
(5) can be abbreviated as
(6) \( S = ((x)(Wx)) \).
Russell gives the analysis of (6) as
(7) \( (\exists c) [(x)(Wx \equiv x = c) \& S = c] \)
(7) says that there is exactly one author of *Waverley* and that one is Scott. This sentence is not a simple identity sentence, although it is, I agree with Russell, a satisfactory paraphrase of (6). There is no part of (7) that corresponds to the occurrence of "\((x)(Wx)\)" in (6).

The theory of descriptions, as developed in OD, greatly influenced Russell's subsequent works on logic and philosophy. The theory provides a logical analysis of denoting phrases in terms of the actual constituents of the world. Russell very effectively uses the logic of descriptions in dealing with the problems of both ontology and epistemology. Two features of the theory, as developed in OD, are a result of Russell's reduction of empirical knowledge to acquaintance. The first is an indirect result of the basic knowledge relation and involves the reduction of sentences containing denoting phrases into their proper logical constituents. As Russell says:

... 'the father of Charles II was executed' becomes: 'It is not always false of \( x \) that \( x \) begat Charles II and that \( x \) was executed and that "if \( y \) begat Charles II, \( y \) is identical with \( x \)" is always true of \( y \)' (OD. 44).

This is a preliminary presentation for the second feature of the theory which is also a reduction, but a reduction which takes place with reference to the epistemological analysis of denoting expressions. As Russell says:

... when there is anything with which we do not have immediate acquaintance, but only definition by denoting phrases, then the propositions in which this thing is introduced by means of a denoting phrase do not really contain this thing as a constituent, but contain instead the constituents expressed by the several words of the
denoting phrase. Thus in every proposition that we can apprehend... all the constituents are really entities with which we have immediate acquaintance (Od. 55-6).

These two features of the theory of descriptions form "the bridge", as Ayer rightly comments,17 between Russell's work on logic and his theory of knowledge.

The theory of descriptions, applied in Russell's later philosophy, opens the door for the distinction between knowledge by acquaintance and knowledge by description. He introduces this distinction as early as 1905, in Od, (p. 41). But it is not until after 1910 that Russell fully developed this distinction. Thus in KAKD, he says that there are two types of knowledge of things as opposed to knowledge of truths: things are known either by acquaintance or by description. Knowledge by description is knowledge "concerning objects in cases where we know that there is an object answering to a definite description, although we are not acquainted with any such object" (KAKD. 202). Again Russell says that "an object is 'known by description' when we know that it is 'the so-and-so' i.e., when we know that there is one object, and no more, having a certain property; and it will generally be implied that we do not have knowledge of the same object by acquaintance" (KAKD. 202). However, knowledge by description and knowledge by acquaintance are intimately connected. What we know by description "is ultimately reducible to knowledge concerning what is known by acquaintance" (PP. 58). We have seen (supra, 2.4) that the PA demands that a sentence containing a description must be reduced into other sentence(s) in order to show that it is composed wholly of constituents with which we are acquainted.

In KAKD and PP, the theory of descriptions is projected into general epistemology so as to facilitate the grounding of knowledge of the unexperienced in experience or acquaintance. The theory is applied there with the aim of showing what we do know in those cases where the subject is merely described (KAKD. 197). Just as we can describe what we cannot name, we can have knowledge by description of what is not an object of acquaintance. Here lies the epistemological dimension of the
theory of descriptions. Let us suppose that a person $P$ makes the following statement:

(8) Bismarck was an astute diplomatist.

"Bismarck" in (8) must mean a definite description, since Russell says that most proper names are really descriptions (PP. 54). In order to understand (8) $P$ must know that there is a person "Bismarck" and that a certain definite description, such as "the first Chancellor of the German Empire" can be applied to Bismarck. So in asserting (8) $P$ must have knowledge by description of Bismarck. So (8) becomes

(9) The first Chancellor of the German Empire was an astute diplomatist.

It must be mentioned here, as Max Black has indicated,\textsuperscript{18} the theory of descriptions has a neutral as well as an epistemologically "restrictive" application to ordinary proper names. In a neutral form, the theory permits us to substitute a definite description for an ordinary proper name. In this form "the first Chancellor of the German Empire" or "the man whose name was 'Bismarck'" would be an acceptable replacement for the name "Bismarck". So in its neutral form, the theory does not restrict the kind of description that could replace an ordinary proper name. But in its epistemologically restrictive use, only a certain class of descriptions would be permitted to replace "Bismarck". This restriction is due to Russell's commitment to the PA. Since he is committed to the PA, objects known by description must, ultimately, be reducible to objects known by acquaintance. Thus "if we are to obtain a description which we know to be applicable, we shall be compelled, at some point, to bring in a reference to a particular with which we are acquainted" (KAKD. 204).

"Bismarck" is not what we shall ordinarily call a description. But considering the special technical sense of "acquaintance" we are not allowed to talk about anything which lies beyond the reach of our acquaintance. So (8) cannot be about Bismarck, although it appears grammatically to be about Bismarck. It really must be about certain sense-data and certain universals. Therefore, just as "Scott" is not the subject of (4), "Bismarck" is not the subject of (8). Now if $P$ has
actually met Bismarck then the particulars with which $P$ is acquainted may be sense-data which are caused by the body of Bismarck. But if $P$ lived after Bismarck, then the particulars will be "a testimony heard or read" (KAKD. 205). Thus, "in the case of particulars, knowledge concerning what is known by description is ultimately reducible to knowledge concerning what is known by acquaintance" (KAKD. 206; cf. PP. 58). Russell's defence for this claim is his commitment to the PA which is both epistemological and semantical (cf. supra, 2.4). $P$ cannot make a judgment about Bismarck "without knowing what it is that [$P$ is] judging or supposing about" (KAKD. 206). And each of the constituents of (8) to which $P$ is related in the relation of judging must be an object of acquaintance (PP. 58).

Let us now take the thread of our discussion back to our knowledge of the table as a physical object. Russell maintains that he has no perception of the table, that is to say, his knowledge of the physical object is not knowledge by acquaintance. What we directly know are the sense-data which make up the appearance of the table. In PP, Russell explains how it is possible that we ever come to know the table as a physical object.

My knowledge of the table as a physical object, ...
... is not direct knowledge. Such as it is, it is obtained through acquaintance with the sense-data that make up the appearance of the table. We have seen that it is possible, without absurdity, to doubt whether there is a table at all, whereas it is not possible to doubt the sense-data. My knowledge of the table is of the kind which we shall call 'knowledge by description'. The table is 'the physical object which causes such-and-such sense-data'. This describes the table by means of the sense-data. In order to know anything at all about the table, we must know truths connecting it with things with which we have acquaintance: we must know that 'such-and-such sense-data are caused by a physical object'. There is no state of mind in which we are directly aware of the table; all our knowledge of the table is really knowledge of truths, and the actual thing which is the table is not, strictly speaking, known to us at all (PP. 47).
This passage claims to establish more than one thesis.

(a) It rules out any possibility of our having knowledge by acquaintance of the table. Our knowledge of the table is not direct knowledge.

(b) All our knowledge of the table is knowledge of truths.

(c) Our knowledge of the table is not knowledge by acquaintance. It rests on assumption and inference which might conceivably be mistaken.

(d) We must know truths concerning the table and things with which we have acquaintance. We must know that "such-and-such sense-data are caused by a physical object".

But the problem is how are we to know that the table causes such and such sense-data when we are only acquainted with the sense-data? Here comes the answer:

(e) The table is the physical object which causes such and such sense-data (which we directly know) and the sense-data represent the table.

(f) Our knowledge of the table is knowledge by description.

But how is the theory of descriptions applied to the knowledge of the table? Let us suppose, again, that our P makes another statement:

(10) The table is brown.

In (10) the grammatical subject is "the table" which does not refer to an object of acquaintance. Russell's theory of descriptions suggests that if P is to have any knowledge of the table, then P must resolve the symbol "the table" which appears to be the name for a physical object into symbols which are names for sense-data with which P is acquainted. After proper analysis of (10) it will be seen that "the table" no longer appears to be a genuine subject term. The analysis would be: there is something which alone is causing such and such sense-data and that something is brown. So the apparent subject term "the table" turns out to be an existential clause:

The first result of analysis, when applied to propositions whose grammatical subject is 'the so-and-so', is to substitute a variable as subject; i.e., we obtain a proposition of the form: 'There
is *something* which alone is so-and-so, and that *something* is such-and-such*. The further analysis of propositions concerning 'the so-and-so' is thus merged in the problem of the nature of the variable, i.e., of the meanings of *some*, *any*, and *all* (Rend. 216).

Accordingly (10) should be translated as

(11) There is an entity \( x \) such that \( x \) causes certain sense-data some of which are brown.

It might be asked whether our analysis of (10) meets the requirement of Russell's argument from science, since he has said that physics has revealed that the table is not brown. I believe that it does. When physics says that the table is not brown, it is not denying that the table appears to have colour. What physics has shown is that the apparent colour of the table (brown) is what it is because of certain other facts which themselves do not refer to colour. In fact, physics does not deny the legitimacy of our talking about the table being coloured, but insists that it has to be understood as a *façon de parler*. Russell's analysis is compatible, I believe, with physics in the sense that he admits that whether the table itself looks brown is a question which cannot be answered since of the table itself \( P \) knows nothing. "[P]hysical objects themselves remain unknown in their intrinsic nature". But (11) shows that there is a way in which \( P \) can, at least, identify the table by giving a description which fits it.

Now the problem of how knowledge transcends immediate sense-data is solved. It is possible because we assume that there are certain entities with which we are not acquainted which can fit the descriptions in terms of what we do know by acquaintance. Physical objects are known by description. It is indirect knowledge, since it is obtained through acquaintance with sense-data which make up the appearances of the objects. The importance of such knowledge is obvious. It enables us to pass beyond the limit of our private sense-data. It is achieved only when we infer that there is a physical object which allows us to assert that it has caused such and such sense-data. Thus although "we can only know truths which are wholly composed of terms which we have experienced
in acquaintance, we can yet have knowledge by description of things which we have never experienced" (PP. 59).

4.4 Russell's Doubts About Inferred Physical Objects and the Emergence of Logical Constructions

We have seen that Russell holds a version of the causal theory of perception. But such a position logically leads to scepticism. As Hume raises the problem, since the senses "convey to us nothing but a single perception, and never give us the least intimation of anything beyond"; the impressions (sense-data) which we receive from them cannot be representations of anything "distinct, or independent and external."19 Now since our direct perception is restricted to sense-data, any claim to know physical objects involves passing beyond our private sense-data. But doubt can be thrown on the justifiability of our inference from sense-data to physical objects. In fact, the sceptic claims that we cannot justifiably make an inference from private sense-data to public physical objects.

The sceptic rightly claims that there is a gap between what is given in the sense experience (sense-data) and what is inferred (physical objects) from it. And any claim to justify our inferential knowledge of physical objects is to find a way of bridging or abolishing this gap. However, in the sceptic's position there are the following steps:

(1) Our knowledge of physical objects, if any, is based on sense-experience.

(2) Sense-experience gives knowledge only of sense-data.

(3) There is no valid deductive or inductive inference from sense-data to physical objects.

(4) So we have no knowledge of physical objects.

The naive realists claim that our knowledge of physical objects is not restricted to sense-data. Rather, we perceive physical objects directly; we have direct access to physical objects themselves. In short, they deny that there is any gap to be bridged.20 However, at the beginning of this chapter, we have seen that Russell denies naive rea-
lism. He is in complete agreement with Hume that our immediate data of perception do not enjoy a continued and distinct existence. When I look at my table what I actually see is not the table but something else (sense-datum) which is always "fleeting and perishing". So as a matter of empirical fact the naive realists' view, that I see the table when I look at it, is mistaken.

In *PP*, Russell happily accepts (1) and (2) of the sceptic's steps, but he rejects (3) and (4). While admitting the gap between sense-data and physical objects, Russell steps aside from scepticism and tries to bridge the gap by a process of inductive reasoning (in the sense of non-deductive reasoning, not in the sense of induction by simple enumeration). He suggests that although physical objects are not directly perceptible in the manner in which naive realists suppose, they can be known to us indirectly as the causes of sense-data. By assuming an inductive principle we are able to infer, from the existence of sense-data, physical objects that transcend and are causes of these data. The application of the inductive principle in this process of inference rests partly on the simplicity hypothesis and partly on instinctive belief.

But, just three months after the publication of *PP*, Russell changes his view about physical objects. This change arises from his coming to take a completely sceptical attitude towards beliefs which do not follow with deductive validity from any facts we perceive to be true. Russell's sceptical attitude is evident in his unpublished paper "On Matter". Before he started writing "On Matter" Russell explained to Ottoline Morrell what he was hoping to accomplish in it.

I haven't had enough courage hitherto about matter, I haven't been sceptical enough. I want to write a paper which my enemies will call "the bankruptcy of realism".

Three days later while reporting to Ottoline Morrell that he has "started writing on Matter" and has reached page 9, Russell reiterated the position he had in mind: "I will shock people, especially those who would like to agree with me -- it ["On Matter"] is altogether too sceptical".
Before considering Russell's sceptical arguments in "On Matter", let us look for any external influence behind Russell's change of position from PP. I shall examine Whitehead's criticisms of the PP manuscript and Wittgenstein's earliest criticisms of Russell's philosophical position in PP. Although in certain cases one need not be influenced by any body to change a previous position (the change may well be spontaneous), in Russell's case, I suggest, this change has something to do with the influence of Wittgenstein.

In the middle of August 1911, Russell sent a typescript of PP to Whitehead. After receiving the script Whitehead wrote to Russell:

Thanks for the typed copy of your book. May I keep it for a week or two? It is really excellent. As I read it, the extreme difficulty of condensing such a disputable subject as philosophy and the lucidity of your exposition strike me more and more.

There are some arguments in it which do not convince me... [I]n a few days I will write at length.24

On August 26 Whitehead sent a letter along with a 14 pages of critical comment on PP. It is not known what Russell wrote to Whitehead just before or after receiving the comment, for at that time Russell did not make copies of such letters and Whitehead was not a preserver of letters. But it seems evident that there is no passage in PP which looks like a response to an objection raised by Whitehead. As Victor Lowe has noted, in the published PP "all the passages that Whitehead quoted from the typescript as targets of his criticism appear unchanged".25 Whitehead's major objection to PP has to do with physical objects as entities inferred from sense-data:

Here in pages 5 [PP. 8], 6 [PP. 9] and 10 [PP. 12] you seem by a sleight of hand to take away the table which I (=the plain man) perceive. I see a 'yellow table' and I feel a "hard table" and I infer that I feel what I see. You (rather obscurely) tell me that I see yellowness and feel hardness, and infer a real table. Such inferences are quite beyond plain people like myself. I perceive objects, and want to know about the reality of the objects I perceive. You ignore this object (or
rather smuggle it away) and proceed to talk about sensations of yellowness and hardness and of an inferred object which causes them. This criticism naturally affects later chapters also.²⁶

Russell's letters to Ottoline Morrell show that by November, 1911, he had finished all his final proofs of PP,²⁷ and the book was published on January 24, 1912. He had time to revise or defend his position in the light of Whitehead's comments, but he did not do so. The possible reasons include: (a) not wanting to prolong the publication of PP, then in its final stage; (b) finding it difficult to deal with Whitehead's comments, since they required major changes; (c) thinking that Whitehead was just wrong. At any rate, for whatever reason, Russell did not take into account Whitehead's comments in PP.²⁸

Perhaps, after the publication of PP, Russell took Whitehead's comments on PP into account in writing "On Matter". I suggest that this is not the case. Firstly, there is no sign of this influence in any of his correspondence with anybody when he was thinking of "On Matter". Secondly, and more importantly, if Whitehead influenced Russell, then "On Matter" should either be in line with Whitehead's own position, which he identified as that of the plain man (presumably a common sense realist), or it should show Russell establishing his PP position more securely so as to avoid Whitehead's charges. In neither case would Russell have declared "On Matter" to be "too sceptical". In fact, Whitehead is arguing in exactly the opposite direction to the one Russell takes in "On Matter". Whitehead's comments on PP therefore have nothing directly to do with Russell's coming to take a sceptical attitude in "On Matter".

Wittgenstein's influences are a different matter. There is no explicit sign of such influence in Russell's published works, but I suggest that around late 1911 and early 1912 Russell was influenced by the dominating sceptical arguments of Wittgenstein. My main source of support for this suggestion is Russell's private correspondence, especially with Ottoline Morrell. It shows that from the time Russell met Wittgenstein, the latter became an important part of Russell's life and thought; and his criticisms affected Russell's epistemology.
Russell met Wittgenstein for the first time on October 18, 1911. Wittgenstein had come to hear Russell's lecture on logic and the philosophy of mathematics. In this first meeting Wittgenstein certainly drew Russell's full attention. That evening Russell wrote to Ottoline Morrell that while he was talking to Ogden

an unknown German appeared, speaking very little English but refusing to speak German. He turned out to be a man who had learnt engineering at Charlottenburg, but during his course had acquired, by himself, a passion for the philosophy of maths, and has now come to Cambridge on purpose to hear me... I am much interested in my German, & shall hope to see a lot of him. 29

As Clark has rightly pointed out, 30 Russell was up against something exceptional. Next day Russell reports: "My German friend threatens to be an infliction -- he came back with me after my lecture and argued till dinner-time -- obstinate and perverse, but I think not stupid". 31 Within a week or two Russell pinned down Wittgenstein's philosophical position as denying the possibility of empirical knowledge. Russell's November 2 letter to Ottoline Morrell gives his reaction: "My German engineer, I think, is a fool. He thinks nothing empirical is knowable -- I asked him to admit that there was not a rhinoceros in the room, but he wouldn't". 32 Initially Russell was certainly offended by Wittgenstein's sceptical attitude. On November 15 Russell reports to Ottoline Morrell:

My ferocious German (who is an Austrian I find) came and argued at me after my lecture. He is armour-plated against all assaults of reasoning, -- it is really rather a waste of time talking with him. 33

Around the turn of 1912, when Russell received some of Wittgenstein's written works, he began to be impressed by Wittgenstein's ingenuity: On January 23, Russell wrote to Ottoline Morrell:

Wittgenstein brought me some MS he had written in the Vacation, very good, much better than my English pupils do. I shall certainly encourage him. Perhaps he will do great things. On the other
hand I think it very likely he will get tired of philosophy. 34

As soon as Russell was impressed by Wittgenstein's ingenuity, he began to be infected by Wittgenstein's sceptical attitude. How much so is explained in his March 1, 1912 letter:

In my lecture yesterday I changed my mind in the middle. I had gone to prove that there probably is an external world, but the argument seemed to me fallacious when I began to give it, so I proved to my class that there was no reason to think anything existed except my self... This was very sad, but it doesn't seem to matter much. It made a better lecture than if it had been more pat. 35

As soon as Russell came to appreciate the sceptical attitude, he began to like Wittgenstein very much although he was a "severe critic" of Russell's lectures: "I like Wittgenstein more and more. He has the theoretical passion very strongly -- it is very rare passion and one is glad to find it ... There is very much more in him than in any of my other pupils". 36

Wittgenstein also attended Moore's lectures. Once Russell asked Moore about what he thought of Wittgenstein. Moore replied that he had a high opinion of him. 37 Russell was delighted to let Ottoline Morrell know this:

Moore thinks enormously highly of Wittgenstein's brains... [Moore] says he always feels W[ittgenstein] must be right when they disagree. He says during his lectures W[ittgenstein] always looks frightfully puzzled, but nobody else does. I am glad to be confirmed in my high opinion of W[ittgenstein]. 38

By the time Russell came to write "On Matter" Wittgenstein had become a close friend and a valued philosopher. On March 26 1912, Russell wrote to Lucy M. Donnelly:

I have now an Austrian pupil who is after my own heart -- he never believes what I say, & always has admirable reasons for his dissent; it is not barren dissent, but that of a man who has absorbed what one has to teach and gone farther. 39
Russell even came to think of Wittgenstein as his own successor.

He [Wittgenstein] is a treasure. I have got a number of new technical ideas from him, which I think are quite sound and important. I shan't feel the subject neglected by my abandoning it, as long as he takes it up.\textsuperscript{40}

Moreover, Russell himself confessed that it was Wittgenstein who had made him "more of a sceptic".\textsuperscript{41} Again, the day he started writing "On Matter" Russell wrote to Ottoline Morrell that "Wittgenstein (who has just been here) is delighted [to know that 'On Matter' is going to be 'too sceptical'], but no one else will be".\textsuperscript{42} It seems evident that Russell must have discussed with, and got support from, Wittgenstein about the possible sceptical outcome of "On Matter". Even when Russell had finished writing a substantial part of "On Matter" he was encouraged by Wittgenstein who, in Russell's judgment, "is the only man I have ever met with a real bias for philosophical scepticism; he is glad when it is proved that something can't be known".\textsuperscript{43} And it was Wittgenstein who "thinks my paper on Matter the best thing I have done" although he read only the beginning and end of it.\textsuperscript{44} Russell's correspondences with Ottoline Morrell and Lucy M. Donnelly give clear indication that Wittgenstein must have been a great influence on his developing a sceptical view in "On Matter".

"On Matter" is intended to upset any defence of our knowledge of physical objects. In \textit{PP}, the argument by which Russell tries to bridge the gap between perception and physical objects is based on an inductive principle (inference to the best explanation). By supposing that there are physical objects physical science is able to frame theories which fit the facts in all verifiable respects, and thus form a simple system many facts of which would otherwise remain isolated and chaotic. Our sense-data are all fleeting and perishing. But by supposing them caused by physical objects all of these isolated and fleeting sense-data can be brought under general laws which are simple and allow sense-data, to some extent, to be predictable. In \textit{PP} Russell employed this inductive principle to strengthen the inference from sense-data to physical objects. But he was not very happy in doing this. He completely agreed
with Hume that such a principle cannot be logically proved to be true. However in *PP*, instead of becoming a sceptic, Russell embraced the simplicity argument by accepting the principle on the ground of its intrinsic plausibility (*PP.* 68).

In "On Matter", Russell finds no satisfactory reason for inferring physical objects from sense-data. He comes to accept the futility of using the inductive principle to support the hypothesis that sense-data are signs of physical objects. The simplicity argument, he now thinks, "has absolutely no weight whatever". Russell agrees that in some situations when we have nothing to choose between two hypotheses, there may be a practical reason to accept the simpler of the two. "But this affords no reason whatever for supposing that the simpler theory is actually true". Elsewhere Russell expresses the same view that "there is no very good ground for supposing that a simple law is more likely to be true than a complicated law" (*AW.* 132).

A variant of the inductive argument, argument from confirmation, holds that if a certain hypothesis fits all relevant known facts it is at least probable that the hypothesis is true. But Russell insists that "[s]uch a contention is only valid if it is known that there are not likely to be other hypotheses which also fit the facts. In our case, this knowledge is absent". He further contends that before the inductive argument is accepted as valid, we have to settle the question: would it be possible, without assuming the existence of something behind our sense-data, to give the symbols of dynamics a definition in terms of sense-data alone? "Until this answer has been obtained", Russell claims, "the inductive argument remains suspended, possibly valid, but very likely to be invalid". Then he proceeds to show that Dynamics cannot be interpreted solely in terms of sense-data. If we assume that Dynamics is true, there must be a material world having a one-many relation to sense-data, not a one-one relation. Let us take an example of the radius vector. The radius vector is always a pure inference, since there is nothing in astronomical sense-data to correspond to the radius vector. It is purely hypothetical. "[I]f there is to be any ground whatever for supposing it to have such and such values, the ground must lie, not in
sense-data themselves, but in some kind of law by which inference is possible from sense-data to other things". Now since physical science assumes the relation of the world to our sense-data to be many-one -- not one-one, it has to assume an ever unobservable reality by which to make the inference. So it is not possible to define Dynamics only in terms of sense-data and therefore we cannot avoid a sceptical conclusion.

The argument from continuity states that if a cat appears at different places at different times it is quite reasonable to suppose that over and above the various cat sense-data there is a real cat which changes its position and exists when it is not seen. "But I doubt", Russell now contends, "if there is any real force in considerations of this kind". Russell does not give any further explanation of this objection; but he seems to think that since the principle of continuity (a variant of the simplicity hypothesis) depends on inductive argument and since inductive argument has been shown to be invalid, the continuity principle loses any real force.

No defensible reason is found in favour of the existence of physical objects. Can we then have any satisfactory account of the nature of physical objects? The answer is: we can't. In PP, Russell argues that physical objects exist in physical space. Now he realizes that this view gives rise to a difficult question as to what is meant by "space". "Real" space is not present to the senses. The one space in which common sense believes is obtained by a rough correlation of different spaces (i.e., those of sight, touch, feeling, etc). It is an inference. Moreover, it cannot contain the immediate data of the senses, but only the "things" which common sense infers from sense-data and regards as the sources of correlated sensations of sight, touch, feeling, etc. So it appears that the space of common sense is to be identified as the space in which the physical object is; other than that, the physical object is to be defined as that which is in common sense space. "Hence the attempt to define matter [collection of physical objects] as that which is in space breaks down".
In *PP*, Russell says that he cannot tell us about the qualities of physical objects. The most he can do is to offer the suggestion that there is in the physical object some quality which corresponds to brown when we see brown, some quality which corresponds to red when we see red, and so on. In "On Matter" Russell claims that even if we assume that some of our sense-data correspond to qualities independent of perception "we could know nothing as to [their] intrinsic nature".53 This was also the conclusion in *PP* (cf. p. 34), but now Russell is taking his argument one step further: we cannot even know the structural properties of things. Even if in two cases where every thing we can directly observe is exactly similar, it does not follow that there is no unobserved difference. So we can always cast doubt as to whether sense-data even correspond structurally to the reality behind them.

We have seen that in *KAKD* and *PP* knowledge by description is intended to provide the way of showing how we can have knowledge concerning things with which we are not acquainted. Russell explicitly holds that we are never acquainted with the table, Bismarck or, for that matter, any physical object. We know the table only by description as the thing which is the cause of certain sense-data. We know that a table has a certain property if we know that there exists the thing *x* which is causing a certain collection of sense-data with which we are acquainted. But the problem is how is it possible to know that a collection of sense-data has one cause or even what properties that cause has, when we can neither perceive the cause directly nor perceive directly any facts about it. This process needs our direct awareness of a sense-datum as caused by something. The hypothesis that physical objects exist as the causes of our sense-data is certainly not knowledge that they exist. In that case, belief in physical objects becomes a conjecture, plausible for reasons of economy and simplicity, but in no sense does it give us definite knowledge of objects.

It seems that immediately after the publication of *PP* Wittgenstein made Russell realize that his position in that work suffered from a serious defect of giving physical objects an ever unobservable status. Now since we have no means of identifying physical objects, we have no
reason to believe that they play any role in the production of our sense-data or even that they exist at all. Considering Russell's initial announcement to Ottoline Morrell, this could be the final conclusion of "On Matter". But the story is quite different. Having realized that the defence of physical objects in PP cannot stand up against sceptical argument, he did not join with the sceptic; rather he went in a new direction to defend physical objects from the threat of scepticism.

Russell proposed that in order to escape a sceptical conclusion we should assume "that all that could be a sense-datum to any possible observer actually exists, and that collections of such actual and possible sense-data are bound together in ways which enable us to regard them as one 'thing'". This provides him with two advantages, viz. "(1) that it avoids an unknown noumenon, since matter will consist entirely of things of the kind with which we are acquainted, (2) that it avoids rejecting our instinctive belief in the independent reality of qualities, without which it is hard to find any conclusive ground for retaining our belief in matter or the external world". This marks the beginning of Russell's constructionist theory of the external world. Even though the term "logical construction" appears here for the first time, and although he has not yet fully developed the theory, he is well aware of its possible uses: "To those who rebel against the sceptical conclusions to which we seem otherwise driven, I commend this hypothesis [that physical objects are constructed from actual and possible sense-data] as at least not obviously untrue, and as more in consonance with our instinctive beliefs than any other hypothesis which the facts permit". Thus it is in "On Matter" that the problem of matter leads to the emergence of the constructionist theory which Russell fully developed in OKEW, RSDP, UCM and in other works.

It is now clear that the seeds of Russell's constructionist theory are contained in "On Matter", that this discussion grew out of his sceptical doubts about physical objects, and that it was Wittgenstein who made him sceptical. It is interesting to notice that what Wittgenstein says in the Tractatus is a clear indication of his agreement with Russell in "On Matter" that there is no logical justification
for an induction which consists in accepting as true the simplest laws. I am not claiming that it was Wittgenstein who influenced Russell to become a constructionist. That credit Russell always gives to Whitehead. What Wittgenstein did was to make Russell realize that the way he tried to bridge the gap between perception and physical objects in *PP* was doomed to failure by the sceptic's arguments. Wittgenstein quickened the emergence of the constructionist theory in that he forced Russell to come up with the view that the sceptic's gap could be bridged in a constructionist way.

One might ask why, if Russell had been influenced by Wittgenstein during this time, he does not acknowledge this. The reason, I think, is that Wittgenstein's influence is on Russell's direction rather than his doctrine. It should be noted here that Russell's understanding of scepticism is different from that of Wittgenstein's. One very interesting feature of Wittgenstein's sceptical attitude is that he does not, as does Russell, think that scepticism is a legitimate position which needs to be refuted. In *PP* Russell clearly sees that there are certain plausible arguments which show that scepticism is logically tenable (*PP.* 22), but he tries to meet scepticism by inferring physical objects from sense-data. However, as soon as Wittgenstein came on to the scene he tried to convince Russell that any attempt to pass from sense-data to physical objects in this way is vulnerable to sceptical attack.

Where exactly does Whitehead stand in the emergence of logical construction in "On Matter"? Certainly not in the front row given that he himself did not formulate the theory by 1912, nor did he give Russell any hint of it, if he had the idea in mind, in his 14 pages of critical comment on *PP*. However, one might think that it is likely that Russell might have received the idea from the on going work of the *Principia Mathematica*, vol. IV (on geometry) which was to have been written by Whitehead alone and/or from the notes on time (and space) that Whitehead sent to him. But I suggest that this is not true. Whitehead's work on geometry and his notes on time contain no hint of the construction of physical objects. As a matter of fact there is no epistemological issue involved in Whitehead's works prior to 1914. They are concerned only
with mathematical physics and are limited to applying the logical
techniques to the problems of space and time.

I do not even think that Russell got the idea of construction
from Whitehead, by any chance, during the writing of "On Matter". Russell's "appointment Diary" shows that he had a meeting with Whitehead on 27th April, the day he started writing "On Matter", but if he had received the idea then he would not have reiterated his sceptical position to Ottoline Morrell in the letter of (postmarked) 28 April. After April 27, Russell met Whitehead on May 10 at a dinner. The structure of the paper strongly suggests that Russell did not come up with the idea of construction until after he had finished page 12 of the essay (where the term "logical construction" appears for the first time). Now since page 9 was finished on April 27 and since the paper was "nearly finished" on May 6, I think page 12 must have been written long before Russell met Whitehead at the dinner. So I suggest that Whitehead made hardly any contribution to the construction of physical objects in "On Matter".

My conclusion goes not only against the received view but also against Russell's own pronouncements. In the Preface to OKEW, Russell stated that almost all the differences between the views advocated there and in PP are due to Whitehead's teaching that "the definition of points, ... the treatment of instants and 'things' and the whole conception of the world of physics [is] a construction rather than an inference" (OKEW. 8; cf. also RSDP. 149-50; LA. 325; P. Math. xi; MPD. 108). This statement conveys several impressions one of which is that Whitehead deserves full credit for Russell's becoming a constructionist. Now given that, as I have suggested, Whitehead has hardly any contribution to the construction of physical objects in "On Matter", how should we evaluate Russell's attributing to Whitehead full credit for the changes he made from PP to OKEW? By the time Russell came to write OKEW he certainly had received help from Whitehead and used certain key ideas in OKEW that Whitehead had developed for vol. IV of the Principia. However this help was only on the application of the theory in the construction of the space and time of mathematical physics, not of
physical objects. Since the concern common to \textit{PP} and in \textit{OKEW} is the problem of physical objects and since a major part of \textit{OKEW} continues the construction of physical objects which was undertaken in "On Matter", Whitehead does not deserve the credit he was given. But why should Russell give credit for the discovery he made to Whitehead whose contribution was limited to the areas of space and time? Possibly he was trying to comfort Whitehead, who always had "the feeling that he had been plagiarized [by Russell] in 1914 [in \textit{OKEW}]",\textsuperscript{69} by paying more than he deserved.
Notes to Chapter Four


5. Such a claim is found in R.J. Hirst's The Problems of Perception, p. 47.

6. Even in these cases the same conclusion applies. As Ayer contends, "the comparative length of the interval makes no difference to the character of our experience: there would be no justification for maintaining that we saw an object of one kind when the interval was very short, and an object of an entirely different kind when it was somewhat longer". See his The Problem of Knowledge (Middlesex, 1969), p. 94.

7. "Matter: The Problem Stated", f. 1. See also "Here and There in Sensation", f. 1. A precise formulation of the difficulty in naive realism is also found in Russell's Philosophy (New York, 1927), p. 3.


9. Locke argues that some perceptions must be produced in us "by exterior causes affecting our senses". See his An Essay Concerning Human Understanding, Vol. II, Bk. IV, chapter XI, sec. 4, p. 328.
10. See also, "Here and There in Sensation", f. 7; "Matter: The Problem Stated", unpublished manuscript [1913], R.A. file # 220.011450, f. 1.

11. Here one might argue (à la Berkeley) that it is possible that the cause in question is God. But in that case Russell would argue that the God hypothesis is less satisfactory than the hypothesis that physical objects cause our sense-data.

12. One might argue that the contrary hypothesis may lead to other positions such as phenomenalism and idealism. To some extent this is true, but Russell insists that among them the simplest is solipsism (cf. MPD. 104) and scepticism. Russell might have seen the danger of both phenomenalism and idealism in that both directly lead to solipsism. Strict phenomenalism leads to idealism and a strict idealism leads to solipsism in maintaining that the only objects we can ever be aware of are our own ideas or sense-data.


15. Ibid., p. 309.

16. Russell expounds his theory of descriptions in a number of places, e.g., OD; PM I. 30-36; KAKD. 201-18; IMP. ch. 16; PLA. 241-54; MPD. 83-5.


22. B.R. to O.M. letter # 423, pmkd. April 24, 1912.


28. Even in the original Preface to *PP*, which he never changed, Russell acknowledged debts to G.E. Moore, J.M. Keynes and Gilbert Murray, but he did not mention Whitehead.


32. B.R. to O.M. letter # 241 [Nov. 2, 1911].


37. Paul Levy suggests that Russell was jealous of Wittgenstein's relation with Moore and wanted to keep his discovery of Wittgenstein to himself. See Levy's *Moore: G.E. Moore and the Cambridge Apostles* (London, 1979), p. 266. But I completely agree with Nicholas Griffin that Levy exaggerates it [Nicholas Griffin, *Russell's Idealist Apprenticeship*, unpublished book, ch. 3]. There is no sign in Russell's letters to Ottoline Morrell around this time which show such jealousy, rather they indicate the contrary.


40. B. R. to O. M. letter # 422, April 23, 1912. It is interesting to notice that Russell expressed this view only one day before he planned to write "On Matter". Cf. B.R. to O.M. letter # 423, pmkd. April 24, 1911.


tific theory and natural laws) clearly anticipates this sceptical attitude.

44. B.R. to O.M. letter # 460, pmkd. May 22, 1912.

45. "On Matter", f. 16.

46. Ibid.

47. Ibid., ff. 17-8.

48. Ibid, f. 18.

49. Ibid., f. 18a.

50. Ibid., f. 18j.

51. In the present context, in arguing for scepticism Russell is attacking the use of induction of any kind. We shall see in our next chapter that by making use of Occam's razor Russell will allow some kinds of inductive inferences (those of continuity and confirmation) to infer unsensed sensibilia and the sense-data of other people.


53. Ibid., f. 29.

54. Ibid. f. 35.

55. Ibid., f. 32.

56. Cf. ibid., ff. 12, 19.

57. Ibid., f. 35, emphasis added.


60. Cf. ibid., 6.51.

61. References to works on geometry, before April 1912, are found in the following letters from Whitehead to Russell: # 710.057384-F1, April 29, 1905; #710.057384-F2, April 30, 1905; #710.057449, Sept. 22, 1910. It is not definitely known how far the work on vol. IV of the Principia was completed before Russell came to write "On Matter". I presume not that much was done. Although in his letter

62. Prior to 1912 these notes are found in Whitehead's letters to Russell, # 710.057464, Sept. 3 [1911]; # 710.757465, Sept. 20 [1911].

63. Lowe has suggested that it is only in 1914 that Whitehead "insists on beginning with perceptual space", see Lowe's "A.N. Whitehead on his Mathematical Goals: a Letter of 1912", p.93.


68. This help came not only through Whitehead's notes on space and time that he sent to Russell from time to time, but also through Russell's reading an important paper of Whitehead on space (this paper is "La Theorie Relationniste de L'Espace [The Relational Theory of Space]" which was later published in Revue de Metaphysique et de Morale, Vol. 23(1916), pp. 423-54). On October 1st 1913, Whitehead sent this paper to Russell for his criticism. We have no evidence about what Russell's criticism of the paper was, but on January 10 1914, Whitehead sent back the rewritten version of the paper with the statement: "It has been thoroughly recast, enlarged, and a good many novel views put in. I am pleased with it... The paper as it stands -- provided it survives your criticisms -- will go nearly without change into vol. IV" (Whitehead to Russell, January 10, 1914. Russell enclosed this letter to Ottoline Morrell with his letter # 936, pmkd. January 12, 1914). In this paper Whitehead takes into account, among other things, the definition of enclosure and of point; both of which are present in OKCW.

CHAPTER FIVE

PHYSICAL OBJECTS II: LOGICAL CONSTRUCTION

5.1 What is Logical Construction?

In our previous chapter we have seen that Russell's doubt about the existence of physical objects, as inferred entities, begins in "On Matter" just three months after the publication of PP. We have also seen that this doubt finally leads Russell to a different line of defence of physical objects in which PP theory is replaced by a new one called logical construction. But Russell has not yet fully explained how this replacement is possible. In his later works he claims that the supreme maxim of scientific philosophizing is: "Wherever possible, logical constructions are to be substituted for inferred entities" (RSDP. 148, emphasis Russell's; cf. OKSW. 106). Elsewhere Russell states the same maxim as: "Wherever possible, substitute constructions out of known entities for inferences to unknown entities" (LA. 326). Whether this maxim is true of all scientific philosophizing is a debatable point, but it is true of Russell's philosophy, at least, during the period 1912-1927. Much of his philosophical activity during this period (and earlier) was devoted to putting this maxim into practice. At different times Russell takes each of the following, among others, to be logical constructions: numbers, space, time, mind, matter, and common sense physical objects. However, in this chapter I shall give an account of Russell's construction of physical objects only.

Russell never clearly defined either "logical constructions" or "inferred entities". The maxim involves a special kind of technique, the

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method of logical construction or what Morris Weitz calls logical "constructionism". So an understanding of the maxim and its use in Russell's philosophy requires an inquiry into the procedure whereby logical constructions are substituted for inferred entities. But Russell does not give any systematic account concerning his method of logical construction per se. He might have thought that the best way to understand the nature of a method is to apply it and to watch rather than formulate it in general precepts. As he says, "it is only in application that the meaning or importance of a method can be understood" (SMP. 109). Let us see whether the application of the method helps us understand the meaning of "logical constructions" and "inferred entities".

Russell's first application of the method of logical construction was confined to the philosophy of mathematics, to the definition of cardinal, ordinal and real numbers. In mathematics the method was employed to sweep away what Russell calls "the useless menagerie of metaphysical monsters with which it used to be infested" (RSODP. 148). However, since we have to understand, on Russell's view, the method of logical construction via its application, let us see how the method is applied in the definition of cardinal number.

Cardinal numbers are often defined by abstraction. To explain definition by abstraction we need the notions of equivalence relation and equivalence class. Any relation which is reflexive, symmetrical and transitive is an equivalence relation. Given an equivalence relation $R$ and $x$ as any member of the domain of $R$, the class of things bearing $R$ to $x$ will be called an equivalence class with respect to $R$. Thus a class $\alpha$ is an equivalence class and $R$ is an equivalence relation the domain of which is $\alpha$, only if every member of $\alpha$ has $R$ to every member of $\alpha$. From this, common sense supposes that all the members of $\alpha$ possess a common quality. Thus if $x$ has the same age as $y$, "it is almost certain that we shall come to regard them as all having some common quality, or as all having the same relation to some one object outside the set" (OKEW. 132). The fundamental significance of equivalence relations is that they justify the application of the principle of abstraction; i.e., objects
which are equivalent in some respect generate identical classes.\(^3\) In doing so an equivalence relation exerts an interesting effect on its domain. It generates what is usually called a partition of the set.

The cardinal numbers are generally taken as applicable to similar classes. The relation of similarity among classes is an equivalence relation. The cardinal number is defined, according to the principle of abstraction, by stipulating that each equivalence class has one cardinal number, and that distinct classes have the same cardinal number iff. they are similar. But Russell rejects this definition on the ground that the principle of abstraction does not ensure that the members of an equivalence class have exactly one property in common rather than a set of properties (\textit{P. Math.} 114-5). So the principle of abstraction does not justify those instances of definition by abstraction in which the defined objects are alleged to be such members.

Instead of defining the cardinal number of any given class \(\alpha\) as the property common and peculiar to all the members of the class, Russell defines it as the class of all those classes similar to \(\alpha\) (cf. \textit{IMP.} 18; \textit{P. Math.} 115; \textit{RSDP.} 149). Let us use "Nc" to stand for a cardinal number of any class which has it. Thus we have

\[
\text{Nc '}\alpha\prime = \text{df. } \hat{\beta} (\beta \sim \alpha) (\textit{PM II. 4}).
\]

Let us suppose that the cardinal number \(\alpha\) is 1. To say that the cardinal number \(\alpha\) is 1 is to say that there is an object \(x\) such that for any object \(y\), \(y\) is a member of \(\alpha\) iff. \(y\) is identical with \(x\). This can be symbolized as

\[
(\text{Nc '}\alpha = 1) = \text{df. } (\exists x)(y)[(y \in \alpha) \equiv (y = x)].
\]

Although Russell admits that the definition of cardinal numbers as equivalence classes "must appear, at first sight, a wholly indefensible paradox" (\textit{P. Math.} 115), it gives him at least two advantages, \textit{viz.} (a) it avoids the dubious assumption that each class has just one common property; and (b) it also avoids the assumption that this common property, which is a metaphysical entity, exists (\textit{IMP.} 18). So instead of inferring the existence of cardinal numbers, Russell shows how they
can be regarded as logical constructions out of equivalence classes. As to its advantage Russell writes in RSDP:

By defining the cardinal number of a given collection as the class of all equally numerous collections, we avoid the necessity of this metaphysical postulate, and thereby remove a needless element of doubt from the philosophy of arithmetic (RSDP. 149).

Russell applies the principle of abstraction for avoiding needless postulation in mathematics. After the construction is done, we avoid any commitment to unnecessary abstractions. This is why the principle of abstraction, Russell remarks, "might equally well be called 'the principle which dispenses with abstraction'" (OKEW. 51). It also "clears away incredible accumulations of metaphysical lumber" (OKEW. 51). So the principle of abstraction serves as an instrument for effecting metaphysical economy.

In his constructionist period Russell often refers to his mathematical works and claims that the method which is "so fruitful in the philosophy of mathematics, will be found equally applicable in the philosophy of physics" and common sense (RSDP. 149). Presumably he believes that his treatment of numbers in P. Math suffices to elucidate the method in all other cases of construction. But it does not suffice to give a definition of such terms as "logical constructions" and "inferred entities" -- terms in which Russell's maxim of scientific philosophizing is expressed. So before we use the method of logical construction, in the context of physical objects, the meaning of these terms has to be explicated.

Let us begin with the term "logical construction". The term is highly misleading. This is partly because he uses the notion in a wide variety of ways. Russell sometimes seems to use "logical construction" and "definition" interchangeably. Thus in IMP (p. 73) he remarks that the "definition of real numbers is an example of 'construction'". And again, he says, "[m]y first applications of the method of logical construction were in pure mathematics: the definitions of cardinals, ordinals, and real numbers, ..." (Reply. 692; see also RSDP. 149). These
remarks give the impression that the method of logical construction is a method of definition. The use of "logical construction" and "definition" interchangeably makes the theory look as if he wants to confine construction to the linguistic level.

The linguistic version is also clearly revealed in the general characterization of the method of logical construction:

Given a set of propositions nominally dealing with the supposed inferred entities, we observe the properties which are required of the supposed entities in order to make these propositions true. By dint of a little logical ingenuity, we then construct some logical function of less hypothetical entities which has the requisite properties. This constructed function we substitute for the supposed inferred entities, and thereby obtain a new and less doubtful interpretation of the body of propositions in question (RSDP. 149).

This passage suggests the following steps in construction:

(1) We have a set of propositions putatively about some inferred entities.
(2) We must discover the properties which the entities must have in order to make these propositions true.
(3) We then try to construct a class of less hypothetical entities such that
(3a) their status is not open to doubt; and
(3b) the constructed class has the properties required to make the propositions true.

The general characterization of the method seems to suggest that construction is simply definition which embodies an interpretation of language. In this sense

\( x \) is a logical construction out of \( p, q \) and \( r = \text{df.} \) all statements about \( x \) can be translated into statements about \( p, q, \) and \( r. \)

This seems to be in Ernest Nagel's mind when he gives a general outline of what Russell means by substitution of logical constructions for inferred entities as follows:

Let "\( S_i \)" be a statement, employed in some definite context \( T_1 \), which contains explicitly the expres-
sion "C," where this expression symbolizes some entity C; that is to say, "S," would normally be supposed to be about C. Under what circumstances is C (the entity, not the expression "C") to be regarded as a "logical construction" or "logical fiction?" Suppose there exist a set of entities \( a_1, a_2, a_3 \ldots \), and a set of relations \( R_1, R_2, \ldots \); suppose, further, that a statement "S_2" can be formed which contains mention of these entities and relations but does not contain the expression "C;" and suppose, finally, that in the context \( T_1 \) the statement "S_2" is logically equivalent to "S_1." If these conditions are satisfied, C is a logical construction out of the specified entities and relations.\(^5\)

The linguistic version is mainly used to eliminate incomplete symbols and this is shown by Nagel's schema very well. In that schema, a set of symbols for non-inferred entities should be substituted for a set of symbols standing for inferred entities. Not only Nagel but all other philosophers who, in some way, accept the theory of logical construction or try to make the meaning of logical construction clear define it in terms of incomplete symbols.\(^6\) They agree with Wisdom that to say "pennies are logical constructions" is to say something about words.\(^7\) Thus Moore defines logical construction as "classes are logical constructions = 'is a class' is an incomplete symbol."\(^8\) Moore defines incomplete symbols as "S ... is an incomplete symbol" = "S ... does occur in expressions which express propositions, and, in the case of every such expression, S never stands for any constituent of the proposition expressed." Df.\(^9\)

There is no denying the fact that Russell sometimes defines logical constructions in terms of incomplete symbols. He explicitly mentions that classes are "like descriptions, logical fictions or (as we say) 'incomplete symbols'" (IMP. 182; see also PLA. 253, 262). But as a whole "logical construction" is not to be used as the equivalent of "incomplete symbol", because it generates a confusion between a symbol and what the symbol is about. However, Russell himself, to some extent, is responsible for this confusion. He often conflates an expression with the thing expressed. He sometimes seems to suggest that the following expressions are synonymous: "logical constructions", "incomplete sym-
bols", "descriptions", "logical fictions", "symbolic fictions", "logical functions", etc. Here are some of the passages:

There are a great many other sorts of incomplete symbols besides descriptions. These are classes, ... and relations taken in extension, and so on. Such aggregations of symbols are really the same thing as what I call 'logical fictions', and they embrace practically all the familiar objects of daily life: tables, chairs, Piccadilly, Socrates, and so on. Most of them are either classes, or series, or series of classes. In any case they are all incomplete symbols, i.e., they are aggregations that only have a meaning in use and do not have any meaning in themselves (PLA. 253).

And again,

... classes ... are incomplete symbols in the same sense in which descriptions are ... (PLA. 262).

The confusion here about incomplete symbols lies in the distinction between what Russell says and what he really means. In these passages Russell does not mean that all those things viz. tables, chairs, Piccadilly, Socrates, classes etc. are incomplete symbols. What he really means is that the symbols "tables", "chairs", "Piccadilly" and "Socrates" and symbols for classes are incomplete symbols. However in the same page from which we quote our second passage, Russell is careful to say that "the symbol for a class [not the class itself] is an incomplete symbol" (PLA. 262). What Russell means by "logical constructions" is entirely different from what he means by "incomplete symbols". By "logical constructions" Russell means the construction of things (i.e., of any kind) out of known (less hypothetical) entities. For Russell, tables, chairs, Piccadilly, Socrates, etc. are logical fictions or logical constructions out of sense-data.

Although at times Russell talks in such a way that he seems to imply that logical constructions have something to do with defining incomplete symbols, this is not the whole story about construction. The schema Nagel has given constitutes only a part of what Russell actually means by logical construction. There is another, and perhaps more important, part of logical construction without which construction would
be a mere logical exercise of eliminating certain kinds of symbols in our language. It consists (in the case of constructing physical objects) in constructing objects of common sense and physics out of sense-data. An attempt to show that physical objects are logical constructions out of sense-data is not the same as an attempt to show that they are defined in terms of sense-data. Constructing physical objects out of sense-data is what I call Russell's epistemological version of the method of logical construction.

The epistemological version of logical construction may be better explained after we see what problem Russell's logical construction is designed to solve. It is designed to replace inferred entities. Russell's FA specifies which entities are inferred and which are not. In the present context, Russell is using "inferred entities" in a restricted sense. Firstly, by "inferred entities" he does not mean deductively inferred entities; for on Russell's view if we can deduce the existence of certain entities from some known principles and known entities, then their status would be as justifiable as what they are deduced from. In that case we will not need any replacement for inferred entities. Secondly, by "inferred entities" Russell does not mean entities which are inferred "in accordance with the recognized canons of scientific method" (Reply. 708). In these cases we can have some direct acquaintance with entities of a certain sort and by virtue of our knowledge of these we can infer with absolute probability that particular unobserved entities of the same sort exist, e.g. as inferring and predicting the nature and behavior of unknown particles of matter. And thirdly, by "inferred entities" Russell does not mean entities which are inferred by, what Ayer calls, "horizontal inference". The principle involved in this type of inference is that to infer an entity one must infer one which is like the one with which he started (see infra. 5.3). The kind of inferred entities Russell had in mind is that of which no instances could ever be known directly, that is to say, no instances of them could ever be made available to direct acquaintance.

By an inferred entity Russell means any object which is not known by acquaintance but has been inferred from what is known by
acquaintance. In *PP*, physical objects, including other persons, were held to be inferred entities. That is to say, chairs, tables, and other persons, for example, are not themselves objects of acquaintance but are inferred entities. It is certain that when Russell says that physical objects are inferred entities, he does not mean that they are inferred in any of the three senses specified above. The inferred entities that he wants to dispense with are the entities postulated by "vertical inferences". The product of such inferences are always *metaphysical* entities. In Russell's epistemology, we are acquainted only with sense-data and never with physical objects. The theory of logical construction is an attempt to show how we can dispense with the inferred physical objects which are not known by acquaintance.

The epistemological version of logical construction is intended to construct "matter as it appears in physics and things as they appear in sensation" (*OKEW*. 106). Russell expresses this by saying that he is constructing the world of physics out of the world of sense (*RSDP*. 140). When the method is applied to the objects of common sense and physics, the relationship that Russell shows between sense-data and physical objects is more than linguistic. As Russell states:

More generally, a "thing" will be defined [to make the subsequent claim in this passage consistent Russell must use "defined" in a non-linguistic sense] as a certain series of aspects [aspects are notational variants of sense-data], namely those which would commonly be said to be of the thing. To say that a certain aspect is an aspect of a certain thing will merely mean that it is one of those which, taken serially, are the thing (*OKEW*. 112).

Russell seems to conceive of aspects or appearances as constituents of physical objects in a somewhat analogous way as individual atoms make up a molecule. In this sense a logical construction is more a result than a method. This reading is clearly reflected in his final definition of physical objects as "those series of appearances whose matter obeys the laws of physics" (*RSDP*. 164; see also *OKEW*. 115-6). If construction is purely linguistic then what is it that obeys the laws of physics? So it seems quite reasonable for Russell not to "agree with [Nagel]" (Reply.
706). In reply to Nagel's schema Russell says, "it is 'things' that are being defined, and it is an empirical fact ... that there are series obeying the laws of physics and having some of the properties we expect of 'things'" (Reply. 706).

Now it becomes clear that Russell has two tendencies in defining logical construction. Firstly, he thinks that the construction is a definition as to how we should interpret language. And secondly, and most importantly, he also suggests that he is offering a "real" definition which analyzes the essence of the "thing" in question. But Russell does not maintain a distinction between the linguistic and the epistemological versions of logical construction. Rather he seems to run them together. In its linguistic version logical construction is defined in terms of incomplete symbols and in that sense the claims of Nagel, Wisdom and others would be right; that is, that to say pennies are logical constructions is to say something about words. And in that case the realities or unrealities to which language refers do not arise. But in its epistemological version when Russell says that a thing, say a penny, is a logical construction he is giving a "real" analysis of the penny in terms of its appearances. But it should be noted here that the linguistic version of logical construction is not unrelated to the epistemological version.

Now the question is: how to maintain a relation between the linguistic and the epistemological versions of logical construction? What is the bridging point? The bridge is, I believe, Russell's PA. In our chapter two we have seen that in Russell's philosophy the PA serves two functions; one is epistemological and the other is semantical. In its epistemological function the PA shows that all empirical knowledge must ultimately be based on acquaintance, and in its semantical function it shows that only those words have meaning for us whose meanings (referents), in the last residue of analysis, we have direct acquaintance with. Russell believes that these two functions of the PA run hand in hand. The upshot is that Russell seems to be committed to the view that his logical construction must replace inferred entities on both linguistic and epistemological levels. He seems to feel that it does
not make any significant difference whether we analyze the logical construction of things directly in terms of what we are acquainted with, *viz.* sense-data or in terms of symbols whose meanings we are acquainted with. In the latter sense, the word which is supposed to stand for an inferred entity is regarded as an incomplete symbol and is defined by symbols whose meanings are sense-data.

The construction is "logical" in the sense that it is through the use of logical techniques that the function of construction is formulated. There is no denying the fact that Russell's philosophy has a strong *bias* for logic. He assigns to logic the most central place in philosophy. In *OKR* (p. 42) he describes logic as the "essence of philosophy", and elsewhere philosophy is said to be "indistinguishable" from logic (SM. 108). Logic "becomes the central study in philosophy", because it provides "the method of research" (OKR. 243). Russell's constructionist programme is an attempt to apply logic in philosophy. This is a major development which was absent in *PP*. Russell admits in the Preface to *OKR* that "the positive and detailed solution of the problem by means of mathematical constructions based upon sensible objects as data has only been rendered possible by the growth of mathematical logic" (OKR. 8).

At times Russell replaced "logical constructions" by the expressions "logical fictions" (PLA. 253; IMP. 45; AV. 306), and "symbolic fictions" (UCM. 124). As Stebbing points out, this is an unfortunate choice of words. These replacements prove more obscure than the original. They tend to give the impression that in calling an object a "fiction" Russell is really maintaining that it is imaginary or fictitious. But this is far from true. When he says that a physical object, such as a table, is replaced by a logical construction he is not claiming that the table itself, if there is one, is a fiction or nonexistent. Rather, he seems to suggest that whenever we use the word "table" we should understand that it stands for a construction out of sets of sense-data.

When Russell uses "logical construction" and "logical fiction" synonymously, what he wants to show is that an object is analyzable
exclusively in terms of what is known to be real. Such a construction does not involve any metaphysical entity to which its ordinary analysis is always found to refer. As he says:

...you can construct a logical fiction having the same formal properties, or rather having formally analogous formal properties to those of the supposed metaphysical entity and itself composed of empirically given things, and that logical fiction can be substituted for your supposed metaphysical entity and will fulfil all the scientific purposes that anybody can desire (PLA. 272).

Here Russell is substituting "logical fiction" for "logical construction" and "metaphysical entity" for "inferred entity". Whereas a logical construction or logical fiction can be known, an inferred entity or metaphysical entity cannot be known. Russell seems to equate "logical construction" with "logical fictions" and "known entities"; and "inferred entities" with "metaphysical entities" and "unknown entities". This equation is clearly reflected in the same maxim given in IA: "Wherever possible, substitute constructions out of known entities for inferences to unknown entities" (IA. 326). On Russell's view a logical construction or a logical fiction is known because the constituents out of which it is constructed are known. Let us consider his example of a desk: "What I can know is that there are a certain series of appearances linked together, and the series of those appearances I shall define as being a desk. In that way the desk is reduced to being a logical fiction, because a series is a logical fiction" (PLA. 273). At any rate, whatever he calls it, logical construction is nothing but the class of appearances which have been artificially grouped together as appearances of a physical object.  

From the above discussion, let us draw the salient features of logical construction (as they are applicable to the construction of physical objects).

(6) Logical construction is designed to replace inferred, metaphysical or unknown entities.

(7) Russell confines logical construction to two versions, viz. linguistic and epistemological.
(8) In its linguistic version logical construction is a definition. It has something to do with defining symbols, to be more precise, incomplete symbols. In this sense, $x$ is a logical construction = df. every statement in which $x$ occurs can be translated into statements which contain neither $x$ nor any synonym of $x$.

(9) In its epistemological version logical construction is a construction out of certain known elements. In the specific case of a physical object ($x$), to say that $x$ is a logical construction out of $p$, $q$ and $r$ is to say that it has at least these properties we expect $x$ to have.

(10) The linguistic version of logical construction is linked with the epistemological version through the PA.

(11) The epistemological version of logical construction fits Russell's main objective.

(12) "Logical construction" refers to both a method and a result.

(13) As a method "construction" (of physical objects) refers to "nothing but a certain grouping of certain 'sensibilia'" (RSDP, 161).

(14) As a result "construction" refers to nothing but a certain series of appearances which have been artificially grouped together as appearances of the "same" thing.

(15) The construction is "logical" in the sense that it needs certain logical techniques to group the elements.

(16) Logical construction is sometimes used in such a way as to suggest that it is a kind of "thing". But the kind of thing that Russell considers is not just any kind of thing. It is something complex having neat logical properties and built up out of elements.
5.2 Why Replace Inferred Entities by Logical Constructions?

The aim of logical construction is to replace inferred or postulated entities. On Russell's own admission, the application of the method of logical construction was "dictated by dislike of postulation where it can be avoided" (Reply. 692). Russell dislikes it for epistemological reasons. As I have already pointed out in the previous section, Russell uses "inferred entities" in a much restricted sense. Physical objects, according to Russell's PP view, are entities of this sort, viz. entities with which we are neither acquainted in direct perception nor entities which we can validly infer from sense-data with which we are acquainted. Secondly, there are no recognizable "canons of scientific method" for inferring physical objects from sense-data (Reply. 708). And finally, being different kind of entities (metaphysical), they cannot be inferred from sense-data in horizontal inferences. Therefore, physical objects qua particular entities are inferred or postulated entities.

Since physical objects cannot be given in direct perception, their existence can only be inferred from what is given in direct perception. But as we have seen in our last chapter, the moment this kind of inference enters, our belief in physical objects (qua inferred entities) becomes questionable, since on Russell's own admission in PP "we can never prove the existence of things other than ourselves and our experiences" (PP. 22). However, although in PP Russell maintains that we never directly perceive physical objects and therefore never know them "by acquaintance", we can know them "by description" as the entities which cause our sense-data. But knowledge of physical objects by description involves inference of the kind in which we pass from sense-data to a physical substratum which in Locke's sense is a "something I know not what" and this makes the theory unacceptable on epistemological grounds.

Inference to physical objects involves a substratum in the following way. We assume that sense-data are caused by certain qualities (properties and accidents) and these qualities "inhere" in the physical object. That is to say the entity we call the physical object (or
physical substratum) "supports" its qualities. But this inference cannot stand against sceptical attack, since we never perceive qualities which are causes of our sense-data, nor a fortiori, the physical substratum which supports them. Now what Russell's theory of logical construction is designed to show is that we can give a satisfactory account of the fact that there are physical objects around us without at the same time inferring substrata whose existence we can never know. On Russell's view logical construction can do this by allowing only entities with which we are acquainted or which can be justifiably assumed from them. But the substratum theory allows entities with which we are never acquainted nor can ever justifiably assume.

In the specific case of the construction of the physical world Russell is mainly concerned with the epistemological problem. The problem concerns the justification of the belief in the existence of ordinary physical objects and the beliefs comprising physical sciences, especially physics. The motive is to explain how objects of physics and common sense are knowable. The problem arises from the fact that we usually suppose that our knowledge of physical objects, such as chairs, tables and the rest (even those of physics, such as molecules, atoms, etc.), is completely empirical, based on data experienced in sense-perceptions, and is verifiable. But what does observation actually reveal to us? "Nothing ... except immediate data of sense, certain patches of colour, sounds, tastes, smells, etc., with certain spatio-temporal relations" (RSDP. 139). At the same time physics says that the "contents of the physical world are prima facie very different from these: molecules have no colour, atoms make no noise, electrons have no taste, and corpuscles do not even smell" (RSDP. 139).

In addition to this, there is a huge gap between the supposed physical object and the immediate data of the senses. Then how can the objects of physics and common sense be verified by the sense-data we directly experience? Russell thinks that the epistemological structure of common sense and physics cannot be put on a sound basis unless there is a way to bridge the gap between objects as they appear in sensations and as they are taken by common sense and physics. If the claims of
physics and common sense to be empirical are to be justified then some-
how or other we have to bridge the gulf between physical objects and
sense-perceptions; that is to say, there must be some correlation
between physical objects and the immediate data of the senses. But how
is this correlation to be known? It seems that the negative result of
Hume's philosophy is enough to upset any hope of finding such a cor-
relation. The reason is that "only one term of the correlation, namely,
the sensible term, is ever found" (RSDP. 139). The upshot is that any
claim of common sense and physics is "utterly and for ever unverifiable"
(RSDP. 139).

The above negative result may be avoided in two ways: (a) either
the objects of physics must be reinterpreted as "function[s] of sense-
data", as logical constructions out of sense-data, or else (b) there is
some known a priori principle which assures us, for example, that our
sense-data have causes other than themselves, (RSDP. 139-40). The same
alternatives are found in Russell's earliest constructionist work where
he states:

...there are only two alternatives in regard to
matter, if we are to have any reason to believe in
matter. (1) It may happen that a piece of matter
is a mere logical construction from certain sense-
data, for example a combination of visual, tac-
tile, and other sense-data associated together by
some experienced relation. (2) It may happen that
we know some a priori principle by which, from
sense-data, we can infer the existence of entities
of a sort with which we are not acquainted, but
which we know to possess the kind of properties
that physics assigns to matter.18

To adopt (b) is to invoke a causal theory of perception. Russell finds
that he has to reject this option on the ground that, if adopted,
"physics ceases to be empirical or based upon experiment and observation
alone" (RSDP. 140).19 Russell's aim is to show the viability of (a)
which is an attempt to show, in principle, how everything that is to be
said about physical objects can be said about appropriate classes of
sense-data. So the process of construction is the reverse of the process
of physics i.e., instead of giving sense-data in terms of physical
objects we "give physical objects in terms of sense-data" (RSDP. 140; cf. OKEW. 84-5). Russell also expresses this suggestion in one of his unpublished manuscripts where he describes matter "as a function of sense-data". For this purpose, he concludes, "the absolute and ultimate reality of sense-data must be our starting point, and nothing of physics must be supposed known ab initio". Russell realizes that "[t]he problem of matter arises largely through the conflict of logical and epistemological premisses. The sense-data, which are epistemological premisses, are logically late and unimportant, as the science of physics is now developed. Our problem must be to make them also logically early".

The reverse function of sense-data works as follows: let us consider the case of seeing a brown table. Physics says that the table itself is composed of colourless atoms. When these atoms vibrate at a certain frequency they produce electromagnetic waves. These waves, when they interact with an appropriately functioning sense-organ, make us see the table (which is colourless) as brown. In such a case, it is supposed that our sensation of brown and the brown sense-datum which we see are considered as functions of the atoms (physical objects). But the problem with this, as we already have seen, is that such physical theory is never verifiable in the strict sense, since its objects (atoms, molecules, etc.) are incapable of being immediately perceived. So Russell now suggests that in order to ensure that physics is verifiable, we must start from sense-data and construct physical objects in terms of them. This is to make sense-data both logically and epistemologically prior elements in any empirical investigation.

It should be noted here that Russell is not challenging the findings of modern physics. What he is looking for is an empirical ground for the reconciliation of the conflict between physics and epistemology and a way to make physics possible on empirical grounds. Not only Russell but also Whitehead, who persuaded Russell that "one could do physics without supposing points and instants" (MPD. 12), was impressed by the apparent incompatibility of the world of physics and the world of sense perception. Both of them took it as their major task
to specify exactly the *logical* and *epistemological* relation between them. As Whitehead writes:

... we imagine that we have immediate experience of a world of perfectly defined objects implicated in perfectly defined events which, as known to us by the direct deliverance of our senses, happen at exact instants of time, in a space formed by exact points, without parts and without magnitude: the neat trim, tidy, exact world which is the goal of scientific thought.

My contention is, that this world is a world of ideas, and that its internal relations are relations between abstract concepts, and that the elucidation of the precise connection between this world and the feelings of actual experience is the fundamental question of scientific philosophy.²³

It is the aim of logical construction to elucidate the connection between the world revealed to us in sense experience and the world described by physics. The connection has to be conceived after the manner of the connection established between logic and mathematics in the *Principia Mathematica*. Just as the concepts of mathematics are to be definable in terms of the concepts of logic, in the same way, the concepts of physics are to be definable in terms of the concepts found in immediate sense-experience.

In advocating the substitution of logical constructions for inferred entities Russell is inspired by two principles, *viz.* the principle of abstraction (which we have already discussed in 5.1) and Occam's Razor (*TK*. 21; *OBKEW*. 112; RSDP. 148).²⁴ Both of these are principles for a reduction in ontological commitment and epistemological obligation. Occam's razor is a principle of *theoretical economy*. The razor is embodied in the formula: *entities are not be multiplied without necessity*. It captures the essence of Occam's recommendation that one should minimize the number of entities involved in any explanation. Russell's own version of Occam's razor is: "[w]herever possible, logical constructions are to be substituted for inferred entities" which he calls "the supreme methodological maxim in philosophizing" (*TK*. 21; *OBKEW*. 112; RSDP. 148). However, it is by carrying the procedures pro-
posed in his own version that Russell can hope to secure the economy recommended by Occam's razor.

The razor states a sound methodological principle. It suggests that "in dealing with any subject-matter, find out what entities are undeniably involved, and state everything in terms of these entities" (OKEW, 112). During the constructionist period Russell found that although postulation of inferred entities is an easy step, nevertheless, it is a "doubtful step" (IA. 326; cf. RSDP. 149) and therefore infects with doubt our knowledge of the entities in question. In IMP (p. 71), Russell says that "[t]he method of 'postulating' what we want has many advantages; they are the same as the advantages of theft over honest toil". In a logical or mathematical context the razor advises the minimum of undefined terms and the avoidance of any ad hoc axioms.

Russell applies the razor in his epistemology with two motives, as E.R. Eames has rightly pointed out:25

(1) The first is to ground all knowledge in some empirical basis, so that none is without justification. Since objects of physics and common sense are never given in sense-experience, but are always inferred, they are postulated entities whose existence is always problematic. The entities whose existence is always certain are sense-data. To infer physical objects behind sense-data, as their causes, is to admit something without sufficient justification. The substitution is to make physical science possible upon empirical grounds. Now, whereas inferred entities are supposed without sufficient warrant but logical construction is apodeictically certain, the substitution is not only a consequence of Occam's razor but also a corollary of the "quest for certainty" in empirical knowledge. Russell hopes that the construction can perform all the desirable functions of inferred entities and at the same time can avoid uncertainties implicit in inferred entities.

(2) The second motive is to use no more in the way of support than is necessary to achieve the results of any inquiry. The reason is that, as Sainsbury states,26 the more you stick your neck out the more chance of its being chopped off. "[Y]ou run less risk of error the fewer entities you assume" (PLA. 222). If we follow this we can diminish the
risk of error in our pursuit of empirical knowledge. The construction of physical objects is an instance of Russell's use of Occam's razor to achieve ontological economy in our talk about the world. As he says: "by the principle of Occam's razor, if the class of appearances will fulfil the purposes for the sake of which the thing was invented by the pre-historic metaphysicians to whom common sense is due, economy demands that we should identify the thing with the class of its appearances" (RSDP. 148; see also OKEV. 112).

In short, it is for epistemological reasons that Russell holds that the ordinary way of conceiving physical objects is philosophically inadequate, since it involves an ontological commitment to substratum theory. But it must be borne in mind that the use of logical construction does not mean that Russell is denying the existence of the supposedly inferred entities for which he substitutes a logical construction. Rather, Russell refrains from asserting either the existence or non-existence of these entities. So far as epistemological motivation is concerned, whether the thing in question exists or not is irrelevant. What it achieves is that Russell has made it quite explicit that our ordinary beliefs about physical objects involve inferences to unknown substrata, that these inferences are unnecessary, and that it is possible to entertain beliefs about these objects without, at the same time, assuming some unknown entities as the ground of the inference.

5.3 Elements of Construction

According to Russell, if the objects of physics and common sense are to be verifiable, then the contents of the physical world, as conceived by physics and common sense, must be logical constructions out of the ultimate empirical entities. So before the construction begins Russell has to determine what are these ultimate empirical entities which are to be used as elements for constructions. Russell's PA specifies which entities are ultimate empirical entities. In _PP_, (which is not a constructionist work) Russell employs the Cartesian method of doubt to disclose the ultimate wholly empirical entities of common sense
objects. It is interesting to notice that PP itself opens with the question "Is there any knowledge in the world which is so certain that no reasonable man could doubt it?" As Morris Weitz has rightly pointed out,\(^{27}\) this quest for certainty is also the distinctive inquiry of constructionism. So the elements out of which physical objects have to be constructed must be indubitably certain. Russell states this position in the following passage:

> The things we have got to take as premisses in any kind of work of analysis are the things which appear to us undeniable — to us here and now, as we are — and I think on the whole that the sort of method adopted by Descartes is right: that you should set to work to doubt things and retain only what you cannot doubt because of its clearness and distinctness,... (PLA. 181)

The main advantage of the Cartesian method of doubt lies in its competence to reveal the ultimate wholly empirical entities. They are such entities as sense-data, the objects of acquaintance. For Russell what is wholly empirical is also wholly certain.

During his constructionist period Russell uses the Cartesian principle as an adjunct of his "supreme maxim". In this period, Russell completely accepts his PP views of sense-data and gives sense-data the most privileged status in his construction since they are "the hardest of hard data" he can discover in experience (OKEW. 78). They are "all that we directly and primitively know of the external world" (RSDP. 141). And what is more, sense-data are regarded as indubitable on their own account and do not have to depend on anything else. Russell regards "their existence as the ultimate certainty on which all knowledge of what exists must be based".\(^{28}\) As he says, "the only justification possible [of physics] must be one which exhibits matter as a logical construction from sense-data" (OKEW. 106).

In RSDP, where his aim is the same as OKEW, Russell thinks that ideally a "complete application of the method [of logical construction] which substitutes constructions for inferences would exhibit matter wholly in terms of sense-data, and even, we may add, of the sense-data of a single person" (RSDP. 150). This view is nearest to the ideal of
solipsism. But in his own later admission he "became persuaded that this is an impossible programme and that physical objects cannot be interpreted as structures composed of elements actually experienced" by one person (MPD. 105). Sense-data, being particulars and actually experienced, fail to fill those gaps where there is no observer. Both physics and common sense demand more continuity and stability than the fleeting and momentary sense-data of a single person can give. Physical objects are believed to exist for long periods during which they are not observed. Now if they are interpreted as being composed of only sense-data, then, since sense-data are momentary and fleeting, they must cease to exist when not observed and those in the distant forest of the Amazon (which have never been observed) must never have existed. Worse than this, the furniture, books and other things in my office must apparently come into and go out of existence as I look at them or leave the office and no longer see them. To avoid this intolerable result Russell "gave up the attempt to construct 'matter' out of experienced data alone, and contented [himself] with a picture of the world which fitted physics and perception harmoniously into a single whole" (MPD. 105). So in order to ensure the continued existence of physical objects, he admitted two sorts of inferences (a) to the sense-data of other people, and (b) to unsensed sensibilia, both of which are necessary if Russell is to escape the charge of solipsism (cf. RSDP. 150-1). They can fill the gaps where there is no observer.

As soon as Russell admits the sense-data of other people and unsensed sensibilia as valid elements of constructions, he is admitting entities which are not wholly empirical, as are sense-data. Now since the Cartesian method of doubt is able only to furnish entities which are wholly empirical, Russell needs another method to furnish other people's sense-data and unsensed sensibilia. Let us call this method the "method of hypothesis". The method of hypothesis is justified by two principles, viz. by the principle of analogy (in the case of sense-data of other people) and by the principle of continuity (in the case of unsensed sensibilia). The new method reveals entities, not wholly empirical, but nevertheless essential for constructions. But it must be noted
here that as soon as the method of hypothesis is added to furnish the elements of constructions, the certainty of the logical construction is weakened, since other people's sense-data and unsensed sensibilia do not have the same epistemological status as my sense-data do. But the degree of weakening of certainty does not, in any way, go so far as to its liquidation. After all unsensed sensibilia are at least less doubtful than the thing that calls for construction.

As we have discussed in detail (cf. supra, 3.3), Russell gives "the name sensibilia to those objects which have the same metaphysical and physical status as sense-data, without necessarily being data to any mind" (RSDP. 142). Thus all sense-data are sensibilia, but not vice versa. There are unsensed sensibilia which are potential sense-data. The only difference between a sensed sensibile (sense-datum) and an unsensed sensibile is that whereas the former is a term in an acquaintance relation with a subject the latter is not. So when a sense-datum ceases to be a datum to a subject it merely changes its epistemological status, not its ontological status. This implies that unsensed sensibilia are not only possible elements in construction, but also actual or real elements. They differ from Mill's permanent possibilities of sensation in that they have real, not merely possible, existence.

There seem to be some apparent difficulties in admitting unsensed sensibilia as being on the same level as sense-data. One of the apparent difficulties leads Fritz to claim that if unsensed sensibilia are supposed to resemble sense-data, and sense-data are dependent upon the body of the observer, it would seem that the particular sense-datum perceived cannot exist until the observer is there to perceive it. Fritz further contends: "[t]he main difficulty, to my mind, with this view is that the notion of an unperceived sense-datum is a contradiction in terms". I think that Fritz completely misunderstands Russell. Russell never says that sense-data and unsensed sensibilia are epistemologically alike. What he says is that their ontological status is the same. Where-
terms, does not apply to Russell, since the phrase is Fritz's not Russell's. Rather, to avoid difficulty like Fritz's, Russell introduces the expression "sensibilia" in the construction and "unsensed sensibilia" is not a contradiction in terms.

The problem with Fritz (as with Ayer, cf. supra, 3.3) is that he makes sense-data logically dependent upon the observer. But, as we have seen, Russell explicitly denies this. To say that sense-data are dependent on sense-organs for their existence, is to say that they are related to the latter by way of what Russell calls logical dependence, that is, when the former are parts of the latter. But for Russell sense-data do not stand in this type of relation to the subject. A sense-datum is just an object of awareness to the subject; the sense-organs are external to it and therefore cannot form part of it. So the sense-organs have nothing to do with the existence of the datum which depends on them for its being a datum, not for its existence. Now if this argument is sound, then it leads to the conclusion that sense-data are intrinsically objective; their relation to the subject is purely accidental. This implies that they existed (as unsensed sensibilia) before they become data to the subject and continue to exist when they cease to be data as unsensed sensibilia.

There is another seeming difficulty in introducing sensibilia. Russell's method of construction demands that both physics and common sense physical objects should be interpreted as logical constructions out of actual empirical, noninferred entities. The only relevant noninferred entities are actual sense-data. So how can Russell allow himself sensibilia which are inferred entities? Does not this contradict the "supreme maxim"? However, Russell's constructionist policy does not abolish all inferred entities, but only, as Stebbing points out,33 risky and unnecessary inferred entities. I believe that this fact was paramount in Russell's mind when he prefixed the phrase "wherever possible" to his maxim of philosophizing. He surely does not intend to abolish all inference whatsoever. All his "somewhat elaborate constructions are designed to reduce inferred entities to a minimum" (Reply, 708)
So the postulation of unsensed sensibilia in constructions does not contradict Russell's "supreme maxim" of scientific philosophizing, since the "wherever possible" clause implies that if it is not possible to replace inferred entities by constructions then we are forced to admit inferred entities. However, if we are forced to depend upon inferred entities, two guiding principles should be kept in mind:

(1) The inferences should always be made perfectly explicit and should be formulated in the most general manner possible.

(2) The inferred entities should be similar to those the existence of which is given, rather than, like Kantian things-in-themselves, those which are wholly remote from sense-data (RSDP. 150).

Such principles justify the inference of unsensed sensibilia, since we find them indispensable.

Russell's dependence on inferred unsensed sensibilia has been objected to by many philosophers on the ground that if Russell is to admit them, he might better admit physical objects as he conceived them in PP. After all, they claim, the notion of unsensed sensibilia brings the concept of sensibilia too close to the concept of physical objects. But, I think, these philosophers are mistaken. The reason is that whereas the inference to physical objects from sense-data, in PP, is a vertical inference, the inference to sensibilia from sense-data is a horizontal inference. As we have noted earlier, for Russell, horizontal types of inference are more secure than vertical inferences, since they consist in inferring the same sort of entities as those with which we start. In this sense the conclusions of horizontal inferences are "verifiable" empirically. By contrast, the conclusions of vertical inferences can never be empirically known since they consist in inferring a completely different sort of entity from that with which we start, i.e., sense-data.

So the inference to unsensed sensibilia is not on the same level as the inference to physical objects. The status of unsensed sensibilia and that of physical objects are not the same. If they were, then why should Russell wish to replace physical objects by logical
constructions out of sensibilia? The difference between inferred physical objects and unsensed sensibilia also becomes clear from Russell's assertion that all sensibilia have the same metaphysical and physical status as sense-data. While physical objects are by nature unobservable, unsensed sensibilia just happen to pass unobserved. But they are capable of being observed should there be an observer to do the job.

There might be a question as to whether inference to unsensed sensibilia violates the spirit of Occam's razor that entities are not to be multiplied beyond necessity. It is true that after the introduction of unsensed sensibilia the effect of constructions of physical objects is to increase rather than diminish the number of entities. As Broad comments, Russell's own theory does not succeed in using truly the maxim of Occam's razor, since it needs more entities than does the straightforward belief in physical objects. In a sense, Broad is right that Russell's construction needs more entities; but it is not true that it violates the spirit of Occam's razor. The razor, as Russell understands it and as Sainsbury has mentioned, surely means that kinds of entities are not to be multiplied beyond necessity. The motive is to avoid entities of a type about which nothing is known. Russell takes unsensed sensibilia as the "same" kinds of entities as sense-data. And in this sense, they are more secure than inferred physical objects about which nothing is known.

In UCM, Russell tends to drop the term "sense-data", although he mentions it. The primitive empirical entities become "particulars" (UCM. 124) which conveniently include sense-data. But as to their status, in relation to the mind, he is indifferent. They "are extramental, purely physical, and among the ultimate constituents of matter" (UCM. 123). It is not quite clear whether the statement that particulars are among the ultimate constituents of the physical world is equivalent to the inclusion of unsensed sensibilia as members of this class, or whether it simply means that particulars (of which a subject is aware at a moment) are the only constituents of physical objects. If he follows the latter, he cannot avoid solipsism. But he must avoid solipsism, since at the beginning of UCM he identified his position with the
realism of Alexander and Nunn (cf. UCM. 120). So he must include unsensed sensibilia among the ultimate constituents of physical objects.

When, in UCM, Russell calls "particulars" the ultimate constituents of matter, he must include both the sensed and the unsensed sensibilia of RSDP. But there is an apparent difficulty. The difficulty arises when Russell conceives of the particulars on the analogy of notes in a symphony (UCM. 124). Just as the ultimate constituents of a symphony are the notes which are momentary and fleeting, the ultimate constituents of physical objects are also fleeting and momentary. But this symphonic analogy seems to undermine the "extra-mental, purely physical and among the ultimate constituents of matter" character of particulars. However, I quite agree with Michael Bradie\textsuperscript{37} that when he gives the symphonic analogy (where all the notes are heard) Russell must be thinking of sense-data i.e., sensed sensibilia. The momentary and fleeting character of sense-data is tied up with their being data to some person, not with their being ultimate constituents. Their ontological status, which is shared by unsensed sensibilia, remains unchanged.

Russell initially declared that ideally physical objects should be shown to be logical constructions out of actual sense-data of one person, and "establish physics upon a solipsistic basis" (RSDP. 150; cf. OKEW. 88-9, 106). But he has never pushed constructions thus far; rather he had to infer the sense-data of other people and unsensed sensibilia. But he seems to have realized that the introduction of other people's sense-data and unsensed sensibilia is an embarrassment to the whole programme of defining physical objects as functions of sense-data. Russell hardly argues for the inference to other people's sense-data and, to some extent, admits its weakness. However, he allows it purely on pragmatic grounds: "those -- and I fear they are the majority -- in whom the human affections are stronger than the desire for logical economy, will, no doubt, not share my desire to render solipsism scientifically satisfactory" (RSDP. 150-1). But he seems to be a little relaxed in allowing unsensed sensibilia since, he uses them "only in the light of a hypothetical scaffolding, to be used while the edifice of physics is being raised, though possibly capable of being removed as soon as the
edifice is completed" (RSDP. 151). This sounds as though we use unsensed sensibilia in our initial construction of the physical objects; we do so with the hope that future constructions will not need to make use of them. But how this removal could be carried out is only hinted at towards the end of RSDP. It could probably be done "by invoking the history of a 'thing' to eke out the inferences derivable from its momentary appearance" (RSDP. 170). But this is never carried out.

I think that Russell cannot maintain what he calls a "complete application" of his method of logical construction, because somehow or other he has to let unsensed sensibilia into his philosophy. Since he talks about the verifiability of physics (RSDP. 139; OKEW. 88, 116), unsensed sensibilia are of great importance. Verification of physics consists in the enumeration of the laws of physics, so we should be able to calculate, via the principle of continuity, how things will appear where there is, in fact, no observer, or how they will look at a time when no one is observing them. Unsensed sensibilia provide the continuity and constancy of reference about physical objects. So unsensed sensibilia can never be removed. They become, after all, an essential part of the construction.

5.4 Constructions of Physical Objects

Following Occam's razor and the principle which dispenses with abstraction Russell proceeds to construct physical objects out of sensibilia. Before we see how he does this let us consider what he means by "perspective", for it is a very important notion in the construction. Imagine that ten people are sitting in a room. Russell contends that "[n]o two of these people have exactly the same sense-data" (RSDP. 147). Even "[w]hen we say that two people see the same thing, we always find that, owing to difference of point of view, there are differences, however slight, between their immediate sensible objects" (OKEW. 94-5). What each person sees is slightly different from what every other person sees. The reason why they cannot see the "same" thing at the same time is that two persons cannot perceive a thing from the
same point of view holding the same position with identical psycho-
physical conditions. We might, therefore, say that each person perceives
physical objects from his own point of view. These various points of
view are called by Russell "perspectives".

The number of perspectives, for Russell, may be infinite; there
may be infinitely many points of view from which one could look upon the
world (OKEW. 95). Initially we may define a perspective as the sum total
of all the data present to one sense of a perceiver at one time, e.g.
all the sense-data that I am now seeing (while I am looking at the
table) constitute a perspective. Russell calls this perspective a
"private world" or a "perceived perspective". However, this cannot be a
satisfactory definition, since Russell wishes to define "perspective"
without introducing the percipient and thereby include unperceived
perspectives also. He allows for the possibility that there are perspec-
tives of which no percipient is aware. "Thus a 'private world' is",
Russell says, "a perceived 'perspective' but there may be any number of
unperceived perspectives" (OKEW. 95; see also RSDP. 152). So as a
satisfactory definition, a perspective may be considered as all the
sensibilia in one sense modality of which a percipient could be aware at
one time.

In constructing physical objects Russell also admits other
people's perspectives. Let us suppose that a table is perceived by two
persons S₁ and S₂. Their perceptions of the table are different,
although they may be simultaneous. It is true that S₁ and S₂ never see
or feel exactly the same thing at the same time. That is to say, their
sensibilia of the table are not identical. There are always greater or
lesser degrees of differences between their sensibilia. However, when we
say that S₁ and S₂ perceive the "same" table we do not mean that their
sensibilia of the table are identical, but that they have similar sensi-
bilia. The argument from analogy supports the contention that S₁ and S₂
can have similar sensibilia to our own. Now as soon as we admit other
people's sense-data, we have no difficulty in admitting their perspec-
tives.
Let us see how Russell constructs what he calls a "momentary" physical object. A momentary physical object, e.g., a table, is not, according to Russell, a single existing object but a collection of different classes of momentary sensibilia or appearances which are regarded as the appearances of the table (RSDP. 148). But Russell realizes that this cannot be taken as a satisfactory construction of the momentary table, since to construct the table as the class of its appearances is circular. He has to decide on what basis we can collect this class of appearances without employing the notion of the physical table. Why do we consider one class of appearances as being the "table" rather than some other class of appearances? He has to determine "by what principles shall we select certain data from the chaos, and call them all appearances of the same thing?" (OKEW. 113). This Russell wants to do by applying the principles of similarity and continuity among sensibilia in different perspectives.

A perspective which has many of its data similar to and apparently continuous with the corresponding data in another perspective is said to be "near" that perspective. Now two perspectives, whether of the same person at different places and times, or of different persons at the same time, are never exactly alike but are very often similar. When differences between sensibilia in two different perspectives are negligible, they are said to be "similar". It must be noted here that since the relation between the data of one perspective and those of another will not be exactly similar, transitivity must fail (e.g., A is similar to B and B is similar to C but A may not be similar to C) and therefore similarity cannot be an equivalence relation.

During the constructionist period Russell did not realize that similarity has to be taken loosely (as it must). However, in his later works, especially in A. Matter, he slightly modified the doctrine of the similarity relation (cf. A. Matter, 281-2). In this modification exact similarity (the equivalence relation) is replaced by what he calls "partial similarity", which is like similarity except that the relevant correspondence is not one-one but many-one. Russell now declares that
"exact similarity is transitive" but the "partial similarity" need not be transitive (A. Matter. 282).40

Taking similarity in the sense of "partial similarity", a person will have different but similar perspectives simply by changing his bodily state and position. Moving around the table he will have a sequence of perspectives containing similar and continuous appearances of the table. Now he can correlate these changing appearances into a continuous series of similar appearances. Admitting the testimony of other persons and admitting that they have similar arrangements of sensibilia when they move around the table, we find that they have also a sequence of perspectives containing similar sensibilia of the table. As Russell says:

When we speak of different people seeing "the same thing", what we know is that there is a certain orderly correlation among their sense-data. If A appears to occupy a certain position relatively to me, the "thing" θ will be described by him as a certain appearance, which is a function (according to perspective) of an appearance which I perceive and also call that of the thing θ.41

Russell allows communication between perceiverse so as to compare the arrangements of sensibilia in their respective perspectives. The perception of the table by different observers may be different, but they are also sufficiently alike to admit of descriptions in the same ways. It is this resemblance which the different perspectives exhibit that affords the clue to the definition of the table.

When we consider all the sensibilia that are normally taken to come from the same object, we see that they will be more or less similar depending upon the nearness of the different perspectives in which they occur. The group of these similar sensibilia constitute the momentary object.

We can now define the momentary common-sense "thing," as opposed to its momentary appearances. By the similarity of neighbouring perspectives, many objects in one can be correlated with objects in the other, namely with the similar objects. Given an object in one perspective, from the system of all the objects correlated with it
in all the perspectives; that system may be identified with the momentary common-sense "thing." Thus an aspect of a "thing" is a member of the system of aspects which is the "thing" at that moment. ... All the aspects of a thing are real, whereas the thing is a merely logical construction (OKEW. 96).

There is an *apparent* difficulty in this passage. At face value the passage seems to suggest that objects of common sense are not *real* but "mere" logical constructions. But, in fact, this is not what Russell wants to mean. I quite agree with Michael Bradie⁴² that here Russell has used "real" in a special *technical* sense which is only applicable to sense-data. In this sense

\[ x \text{ is real iff. } x \text{ is an element of the basic inventory of the world.} \]

By calling physical object a "mere" logical construction Russell does not want to say that it is unreal or fictitious.⁴³ He says:

> The world we have constructed can, with a certain amount of trouble, be used to interpret the crude facts of sense, the facts of physics, and the facts of physiology. It is therefore a world which *may* be actual. It fits the facts, and there is no empirical evidence against it; it also is free from logical impossibilities. But have we any good reason to suppose that it is real? (OKEW. 101).

In the next few pages Russell goes on to show that we have no good reason not to think that the constructed objects are real.

Although Russell thinks that we can never know, for certain, the "objects" but always only the sensibilia and the perspectives which are constituted by a group of sensibilia, he makes use of correlation among similar sensibilia of different perspectives. This correlation gives him the basis upon which he constructs physical objects without going beyond these groups of sensibilia and at the same time it retains all the functions usually associated with "physical objects". After establishing correlations between similar and continuous sensibilia in different perspectives the construction of a momentary physical object is complete. Russell writes:
The 'thing' of common sense may in fact be identified with the whole class of its appearances -- where, however, we must include among appearances not only those which are actual sense-data, but also those 'sensibilia', if any, which, on grounds of continuity and resemblance, are to be regarded as belonging to the same system of appearances, although there happen to be no observers to whom they are data (RSDP. 147).

So far we have been concerned mainly with Russell's construction of momentary physical objects. But the construction has to be extended to permanent physical objects considered as "same" objects, allowing them to change through time. But before we see how Russell constructs permanent physical objects, let us see what he means by the "same" object. Russell contends that when he uses the word "same" in the context of physical objects, he does not use it in the sense of "identical". That is to say Russell does not take the extreme line of equating similarity with the equivalence relation. Russell begins by asking (α) "What do I mean by saying that this desk that I am looking at now is the same as the one I was looking at a week ago?" (PIA. 272). Russell contends that the first simple and ordinary answer would be:

1. it is the same desk;
2. it is actually identical with the one I was looking at a week ago; and
3. there is a perfect identity in substance in what I was looking at a week ago and what I am looking at now (PIA. 272).

But Russell realizes that if we accept (1) to (3), we are assuming a "metaphysical identity of substance" for which there is no empirical evidence. To avoid this Russell suggests an alternative answer:

4. To say that I am looking at the same desk again is not to say that I am looking at something which is identical with what I was looking at a week ago. Rather, it is to say that what I am looking at now and what I was looking at a week ago are appearances belonging to "a certain series of appearances linked together, and the series of those appearances I shall define as being a desk" (PIA. 273).

Now to make (4) consistent with the original question Russell translates
(α) into (α₁): "What is the empirical reason that makes you call a number of appearances, appearances of the same desk?" (PLA. 273).

Russell does not need to postulate a perfect identity in order to say that "it is the same desk I saw a week ago". To speak of seeing the same thing or the same desk on successive occasions does not involve using a concept of identity, for it is not to speak of there being a single entity which persists through time. Rather, in saying that "it is the same desk I saw a week ago" what I actually mean is that on successive occasions I have seen different but related appearances belonging to a certain series which constitutes the thing. So it seems that in Russell's system he only needs a relative or partial identity.

Russell suggests that the common notion that physical objects persist is an unnecessary supposition or what he also calls "a piece of audacious metaphysical theorizing" (OKEN. 107) which arises from observation of the phenomena in change. We see, for instance, that ice changes to water and it is then assumed that there is something permanent and unchanging which underlies this change. Russell believes that the notion of there being something permanent has, to some extent, been confirmed by the success of theories about the conservation of energy. But on Russell's view this is a mere prejudice that something persists first and then come the successful theories. As he writes:

Philosophical writers on physics sometimes speak as though the conservation of something or other were essential to the possibility of science, but this, I believe, is an entirely erroneous opinion. If the a priori belief in permanence had not existed, the same laws which are now formulated in terms of this belief might just as well have been formulated without it. Why should we suppose that, when ice melts, the water which replaces it is the same thing in a new form?... What we really know is that, under certain conditions of temperature, the appearance we call ice is replaced by the appearance we call water. We can give laws according to which the one appearance will be succeeded by the other, but there is no reason except prejudice for regarding both as appearances of the same substance (OKEN. 110).45

To give an explanation of permanent physical objects we do not need some
unchanging substratum (in the Lockeian sense) underlying the series of changing appearances through which the object persists. This view is also expressed in one of Russell's earliest constructionist works 46 where he states that "[p]ermanent 'things' are only approximate -- suggested by the relative permanence of tables and chairs and trees. They are not what is metaphysically requisite". Keeping this in mind, let us see how Russell constructs permanent physical objects.

Let us consider some wall-paper in a room. Over a period of time it will present a series of changing appearances. Its colour will gradually fade away. Now common sense takes the wall-paper as one thing, which, in some sense, remains the same throughout the passage of time and the changes which it undergoes. "But", Russell insists:

what do we really know about it? We know that under suitable circumstances -- i.e. when we are, as is said, "in the room" -- we perceive certain colours in a certain pattern: not always precisely the same colours, but sufficiently similar to feel familiar. If we can state the laws according to which the colour varies, we can state all that is empirically verifiable; the assumption that there is a constant entity, the wall-paper, which "has" these various colours at various times, is a piece of gratuitous metaphysics (OKEW. 111-12).

Now Russell maintains that if what we believe is to be empirically verifiable, and at the same time if we are to follow Occam's razor, the only satisfactory procedure is to identify the permanent physical object with the series of its appearances.

To say that a certain aspect is an aspect of a certain thing will merely mean that it is one of those which, taken serially, are the thing. Everything will then proceed as before: whatever was verifiable is unchanged, but our language is so interpreted as to avoid an unnecessary metaphysical assumption of permanence (OKEW. 112).

Therefore the permanent physical object is to be identified with some series of its appearances. But there is an obvious difficulty in defining the permanent physical object as the series of its appearances. It lies in the fact that it seems prima facie unlikely that the definition
can escape the charge of circularity. If Russell cannot remove the circularity from his construction of physical objects, then his whole programme of replacing inferred entities by logical constructions collapses. But how to do this? It can be done if it is possible to specify, without mentioning the physical object, the set of appearances which would be called the appearances of the thing. Russell realizes that to have a satisfactory definition of a permanent physical object, we need a criterion for grouping together the appropriate sensibilia -- a criterion which will not involve the notion of "being appearances of the same thing" (OREW. 113).

To avoid circularity, Russell initially uses, as we have noted earlier, two rough and approximate criteria viz. similarity of sensibilia and continuity among the members of a series of sensibilia (OREW. 113-6; RSDP. 162-4). But he soon realizes that they do not provide him with much help unless the physical objects are mentioned. Mere similarity or resemblance will not do, "for two different things may have any degree of likeness up to exact similarity" (OREW. 113), for example identical twins. Again, two things may be quite dissimilar but both may be the same thing, for instance, the candle and the melted wax.

Russell further contends that continuity is not a sufficient condition for identifying a permanent physical object. An appearance may be continuous, and yet be of two different things; for example, caterpillar and chrysalis. There are even instances of continuous change which are cases of the change of one thing into another. As he says:

> It is true that in many cases, such as rocks, mountains, tables, chairs, etc., where the appearances change slowly, continuity is sufficient, but in other cases, such as the parts of an approximately homogeneous fluid, it fails us utterly. We can travel by sensibly continuous gradations from any one drop of sea at any one time to any other drop at any other time (RSDP. 163).

Continuity is not even necessary for the permanent physical objects. Two appearances may be discontinuous and yet belong to the same thing. An example of this would be a volcanic island which appears, disappears and then appears again.
Neither similarity of sensibilia nor continuity among the members of a series of sensibilia nor even their conjunction is sufficient to generate a group of sensibilia to be the one permanent physical object. Although both of them contribute to the construction of a permanent physical object, neither is a necessary nor a sufficient condition of permanence. "The utmost we can say is that discontinuity during uninterrupted observation is as a rule a mark of difference between things, though even this cannot be said in such cases as sudden explosions" (OKEW. 114). So there is a need to discover a further condition which when added to these two would constitute a permanent physical object. This condition is the "conformity with the laws of dynamics [laws of physics]" (RSDP. 163). Russell says:

Now physics has found it empirically possible to collect sense-data [here Russell must mean sensibilia] into series, each series being regarded as belonging to one 'thing', and behaving, with regard to the laws of physics, in a way in which series not belonging to one thing would in general not behave (RSDP. 164).

Russell seems to suggest that if any given sensibile is to belong to one thing and to one thing only, then it must be the case that there cannot be alternative ways of grouping sensibilia such that the resulting groups obey the laws of physics. This is certainly too strong a requirement and Russell, of course, feels that "[i]t would be very difficult to prove that this is the case" (RSDP. 164). However, he passes this point simply by assuming that "there is only one way" of grouping sensibilia. Therefore, "[p]hysical things are those series of appearances whose matter obeys the laws of physics" (RSDP. 164, emphasis Russell's; see also OKEW. 115-16).\textsuperscript{48}

Thus Russell supplements the definition of "physical objects" by adding the laws of physics to the principles of similarity and continuity. A physical object is identified through its similar sensibilia's continuity of character and conformity to the laws of physics. These are the principles according to which our sensibilia are grouped together as belonging to "one thing". How the laws of physics operate in the construction of a physical object can be illustrated by an example of a
penny. Let us place a penny at x location and ask three persons $S_1$, $S_2$ and $S_3$ to observe it from increasingly greater distances. Russell suggests that if we know how the penny appears to these three actual observers, we can calculate by the laws of physics, how it would appear at a place where there is, in fact, no observer. Now we can fill the gaps between the three observers with unsensed sensibilia. In this way when we accommodate any number of calculated sensibilia to a group, we say that the group belongs to a single thing, the penny. Russell seems to suggest that, since such grouping results in correct predictions, the principles are verified by empirical facts. So Russell's present position is that to construct a permanent physical object from sensibilia the sensibilia have to fulfil the following conditions:

(a) The sensibilia are sufficiently similar.

(b) They are continuous before, during and after the observation.

(c) They obey the laws of physics.

Now the question is: what does Russell mean by the laws of physics? They are nothing other than the laws of causality. As Russell says, in the "very general sense, the laws of dynamics [physics] are causal laws, and so are the laws correlating the simultaneous appearances of one 'thing' to different senses" (OKIN. 115; see also Reply. 701-2). However, it should be noted here that when Russell uses the term "causal laws" he does not mean traditional notions of causation which go beyond the evidence provided either by observation or by science in making unjustified metaphysical assumptions. He no longer regards causality as a relation which holds between sense-data and an unknown physical entity. Rather he accepts the advanced scientific notion of causal laws (in line with, for example, quantum and relativity theory) which do not look for causal entities. "[T]he reason why physics has ceased to look for causes is that", Russell says, "in fact, there are no such things. The law of causality [traditionally conceived], I believe, like much that passes muster among philosophers, is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm" (ONC. 171). By "causal laws" Russell means "any laws which connect events at different times, or even, as a limiting case, events
at the same time provided the connection is not [just] logically
demonstrable" (OKEW. 115). Here by "connect" Russell means both "which
allows inference to" and "the grouping of" certain events or sensibilia.
Elsewhere Russell explicitly mentions that "the different particulars
that belong to one physical object are to be collected together by
continuity and inherent laws of correlation, not by their supposed cau-
sal connection with an unknown assumed existent called a piece of
matter" (MW. 101).\textsuperscript{49} The reason why such laws have to be added to the
principles of similarity and continuity is derived from the empirical
success of physics using such laws for correct prediction of various
physical phenomena.

One might wonder why, since Russell accepts the laws of physics,
he does not accept the existence of the physical object as a scientific
hypothesis? After all, simplicity would have been an extra advantage of
this option. Some non-constructionists, such as Mackie,\textsuperscript{50} would certain-
ly prefer to regard the existence of physical objects as a scientific
hypothesis. Mackie writes that "the real existence of material things
outside us is a well-confirmed outline hypothesis, ... it explains the
experiences we have better than any alternative hypothesis would, in
particular better than the minimal hypothesis that there are just these
experiences and nothing else".\textsuperscript{51} This option is attractive to Mackie
only because the rival theory \textit{viz.} phenomenalism, fails to give a
coherent, gap-free interpretation of physical objects. Whether Mackie's
view is a better one than the constructionist view is a matter of dis-
pute and I am not going to engage myself in it here. But, I think,
Russell would certainly claim, for a variety of reasons, that it is not.
Firstly, Mackie's position is the one which Russell previously held
(cf. supra, 4.2)\textsuperscript{52} and later, in "On Matter", rejected realizing that
it is vulnerable to sceptical attack (cf. supra, 4.4). Secondly, Russell
may not like to call the existence of physical objects scientific
hypotheses, because whereas a scientific hypothesis is by definition
verifiable, the existence of physical objects remains unverifiable (in the
strict sense) for all time given that we can only perceive sense-data
and never physical objects. Thirdly, the position Mackie holds (which
Russell also holds in *PP* ultimately leads to substratum theory which cannot fulfil the strict epistemological requirements (cf. supra, 5.2). It allows entities with which we are never acquainted and which we can never justifiably infer. Fourthly, and finally, for Russell, constructionism does not claim that there are just "experiences and nothing else" and thereby does not commit itself to phenomenalism (see infra, 5.5).

In our previous chapter we have seen that Russell's constructionist theory grew out of a sceptical doubt about physical objects. Russell certainly realized that the sceptical challenge of bridging the gap between sense-data and physical objects cut much deeper than Mackie's "well-confirmed" external world hypothesis. As a matter of fact if we restrict our perception to sense-data we can never confirm (as the sceptic indicates) the hypothesis. In this situation Russell would prefer the constructionist view over the Mackiean or his *PP* view for an epistemological reason. Whereas the simplicity hypothesis cannot fulfil the strict epistemological requirements, the constructionist view tries to fulfil these requirements by allowing only those entities into construction with which we are directly acquainted or which can be justifiably inferred (in line with the laws of physics) from the entities with which we are acquainted.

Having completed the construction of physical objects, Russell proceeds to construct "matter". But it should be noted here that neither in his pre-constructionist works nor in his constructionist works is Russell very much concerned with distinguishing, too closely, matter and physical objects. It seems that he uses "matter" in two different senses in two different periods. In the pre-constructionist period (especially in *PP*) "matter" is being used as a general term which covers all physical objects. But in the constructionist period it is used as a technical term in line with the physicist's use of it.53 So the definition of physical objects can hardly be taken as the definition of the "matter" of physics. As Russell says:

We define the 'physical thing' as the class of its appearances, but this can hardly be taken as a definition of matter. We want to be able to
express the fact that the appearance of a thing in a given perspective is causally affected by the matter between the thing and the perspective. We have found a meaning for 'between a thing and a perspective' but we want matter to be something other than the whole class of appearances of a thing, in order to state the influence of matter on appearances. (RSDP. 157).

Matter must therefore be something different from the whole class of appearances of an object. So Russell still needs to construct matter even having already constructed physical objects.

Initially Russell gives the following definition of matter: "The matter of a given thing is the limit of its appearances as their distance from the thing diminishes" (RSDP. 157; see also AM. 106-7). But Russell is not quite happy in defining the matter of a thing as "the limit of its appearances", because there is no way of determining whether they have such a limit. Now since "empirically there is no such limit to be obtained from sense-data", Russell declares that "[t]he definition will have to be eked out by constructions and definitions" (RSDP. 157).

Physicists maintain that the matter of a physical object is more real than its appearances. The reason is that, as they claim, "the appearances at very small distances are less affected by causes [intervening factors, e.g., smoke, mist, coloured spectacles, etc.] other than the thing itself" (RSDP. 158; see also OKB. 85). But Russell suggests that the physicists' belief can be interpreted as follows: "[t]he appearance of a thing in a given perspective is a function [not an effect] of the matter composing the thing and of the intervening matter" (RSDP. 157). But the "matter" of a given thing is to be constructed out of those appearances only (a) which are not at great distance from the thing and (b) which are not seriously affected by the intervening matter.

Russell admits that our empirical knowledge of matter is more or less restricted, for the limit is not empirically determinable. What we know about matter is only "approximate because we cannot get to know the appearances of the thing from small distances, and cannot accurately
infer the limit of these appearances" (RSDP. 158). The limit is "inferred approximately by means of the appearances we can observe" (RSDP. 158) as the unsensed sensibilia are inferred from the actual sense-data.

5.5 Russell's Rejection of Phenomenalism

We have seen that, according to Russell, physical objects are logical constructions out of sensibilia. Thus to say that tables, chairs, houses and the rest are logical constructions out of sensibilia is to say that they can be defined as functions of sensibilia without making any reference to physical objects as inferred entities. It may seem, then, that one of the philosophical consequences of such constructions is phenomenalism, the doctrine that physical objects are logical constructions out of actual and possible sense-data. Many commentators have suggested that during the constructionist period Russell abandoned his realist theory of perception for a version of phenomenalism. Their claim is that in his constructionism Russell presents a phenomenalistic reduction of physical objects. But Russell explicitly denies that he ever did so. I think that Russell is right. He never accepts the phenomenalist view of the external world, although his view is significantly close to phenomenalism.

In this section I argue that Russell always held a realist position despite the fact that he constructs physical objects out of sensibilia. I would like to defend this view by way of showing that Russell's constructionism does not involve an acceptance of phenomenalism. This approach will have at least two advantages, viz. that the same argument, on the one hand, will reject the charge that Russell commits himself to phenomenalism and, on the other hand, will also secure his realism. However, before I proceed let us see, briefly, what "phenomenalism" means. Phenomenalism is a philosophical theory of perception according to which, in its strict sense, all our knowledge, beliefs and conjectures about physical objects begin and end with sense-data, and that sense-data are mental. The theory abandons entirely the notion of external physical objects as entities of a different sort from
sense-data. It tries to reduce physical objects solely to a collection of actual sense-data. It holds "that there are only percepts" (A. Matter. 209). I take phenomenalism to be a form of anti-realism. Whereas a realist holds that physical objects are able to exist and retain some, if not all, of the properties which we perceive them as having, even when unperceived. A phenomenalist denies this. He denies the existence of a physical world lying behind the world of experience. There is no reality apart from sense-data; there is nothing left over for us to infer from them. So phenomenalism is not only a form of anti-realism, but also a form of idealism for holding the theses that (a) physical objects are reduced to nothing more than sense-data, and that (b) sense-data are mental.

There may be several versions of phenomenalism of which I take the following three to be the main ones:

(1) According to the first version, physical objects are defined as "logical constructions out of sense-data".57 They are nothing over and above sense-data themselves. On this view sense-data are actual mental entities. So to approach phenomenalism is to reduce physical objects to actual sense-data.

(2) A second version of phenomenalism holds that physical objects are nothing but a collection of actual and possible sense-data. Historically, this version of phenomenalism is generally traced back to J.S. Mill who regarded matter as consisting of "groups of permanent possibilities of sensation"58 In a similar vein, Armstrong defines it as the theory that "the physical world is nothing more than sense-impressions, actual and possible".59

(3) The third version of phenomenalism is the most recent and may be called linguistic phenomenalism. This type of phenomenalism tends to show that what is meant by talk about physical objects can be expressed solely in terms of actual and possible sense-data. On such a view no physical object is different from the class of actual and possible sense-data; therefore, defenders of phenomenalism claim that statements about the former can be translated (without any loss of meaning) into statements about the latter.60 As Ayer states, "every empirical state-
ment about a physical object, whether it seems to refer to a scientific entity or to an object of the more familiar kind that we normally claim to perceive, is reducible to a statement, or set of statements, which refer exclusively to sense-data".61

During his constructionist period Russell, in various places, talks as if he were maintaining a phenomenalist position. Here are some of the passages:

The "matter" of the physicist and the "thing" of common sense will ... be collections of constituents of the nature of sense-data, some actually perceived some not.62

...in so far as physics and common sense is verifiable, it must be capable of interpretation in terms of actual sense-data alone (OKBW. 88-9).

... the one thing seen at different times by the same or different people must be a construction, being in fact nothing but a certain grouping of certain 'sensibilia' (RSDP. 161).

... the table which is neutral as between different observers (actual and possible) is the set of all those particulars which would naturally be called 'aspects' of the table from different points of view. ... [T]hese particulars together with... others as are unperceived, jointly are the table; and ... a similar definition applies to all physical objects (AM. 98-9).

There is no denying the fact that all the above passages have an obvious phenomenalist flavour. But I believe that in these passages Russell is not advocating phenomenalism because to accept phenomenalism is to accept, to some extent, idealism. Since in phenomenalism physical objects are reduced to sense-data (actual and possible) and since sense-data are mental, it cannot escape the fragmentary metaphysical world view that a Berkeleyan type of idealism (and a certain version of solipsism) entails. So Russell cannot have any truck with phenomenalism, and he explicitly denies that he ever really accepted phenomenalism.

Russell's first explicit denial of phenomenalism (which I believe goes mostly unnoticed) occurred on April 12, 1915, in a meeting of the Aristotelian Society in which C.D. Broad presented a paper entitled
"Phenomenalism". Broad characterizes Russell's constructionism as phenomenalism and criticizes the theory. By "phenomenalism" Broad means "a philosophical theory which claims to be able in some sense to dispense with at least one of the three [i.e., sensations, sense-data, and physical objects], viz. physical objects". A phenomenalist, according to Broad, "proposes to substitute for physical objects classes of which sense-data are particular individuals". Broad then applies this theory to Russell: "[t]his is as far as some phenomenologists, e.g., Mr. Russell, are at present prepared to go". However, at the end of Broad's paper, Russell publicly declared that his theory of constructionism did not commit him to phenomenalism. As reported in The Athenæum, "Mr. Bertrand Russell, replying in the discussion, said that 'phenomenalism' was not the term he himself used to denote his theory". So it seems quite obvious that during the very period in which he propounded constructionism, Russell had in mind that his theory was quite different from phenomenalism.

The reason why Russell's theory is quite different from phenomenalism is that the constructionist policy does not commit him to denying the realist view that there are physical objects existing unperceived. When he maintains that an object, say O, is a logical construction out of x, y and z (sensibilia) he is not necessarily committed to denying the existence of O as a non-empirical entity distinct from x, y and z. All he is doing is avoiding having to postulate the existence of such an entity for which we do not have any empirical evidence. Russell frequently insists that he is not denying that there is something over and above the constructed physical object: "I want to make it clear that I am not denying the existence of anything; I am only refusing to affirm it. I refuse to affirm the existence of anything for which there is no evidence, but I equally refuse to deny the existence of anything against which there is no evidence" (PIA. 273-4). The fact that Russell does not deny the existence of physical objects should be sufficient to justify the claim both that he is not a phenomenalist (à la Broad's definition, for example) and that he is a realist. This is why, I think, Russell's
response to Broad's charge that Russell is a phenomenalist is quite justified.

Seven years later Russell reiterated his denial that he ever really accepted phenomenalism.

I have never called myself a phenomenalist, but I have no doubt sometimes expressed myself as though this were my view. In fact, however, I am not a phenomenalist. For practical purposes, I accept the truth of physics, and depart from phenomenalism so far as may be necessary for upholding the truth of physics. I do not, of course, hold that physics is certainly true, but only that it has a better chance of being true than philosophy has. Having accepted the truth of physics, I try to discover the minimum of assumptions required for its truth, and to come as near to phenomenalism as I can. But I do not in the least accept the phenomenalist philosophy as necessarily right, nor do I think that its supporters always realize what a radical destruction of ordinary beliefs it involves. 68

Accepting the "truth of physics" means, for Russell, accepting physical theory interpreted in a realist manner, which, in turn, means interpreting physical theory as referring to unobservable things and events. 69 Russell accepts the truth of physics without any question. He holds that common sense accepts the truth of physics over the speculations of philosophy. As to the relative truth value of physics and philosophical systems he says:

Philosophers may say: What justification have you for accepting the truth of physics. I reply: Merely a common-sense basis. If you ask anyone who is neither a philosopher nor a physicist, he will say that physics has a much better chance of being true than has the system of this or that philosopher. To set up a philosophy against physics is rash; philosophers who have done so have always ended in disaster (Reply. 700).

Russell takes common sense beliefs as a necessary foundation on which the structure of science is built. The views which are advanced by physics are to be accepted as true and these views provide part of the data on which philosophical speculation is based. I think that Russell's
rejection of phenomenalism is rooted in his strong adherence to a *realist* interpretation of physics.\textsuperscript{70} As he says, "an honest acceptance of physics demands recognition of unobserved occurrences" (Reply. 701).

The general acceptability of science implies that there are unperceived events. Although there is evidence that Russell wished to construct physical objects with only observed sense-data, on his later admission, he considered this as an "intellectual game" (Reply. 701). However, this "intellectual game" led Stace to comment:

Always his [Russell's] philosophy wavers unhappily between phenomenalism and scientific realism. In the end the scientific realism always wins... From the position of scientific realism Russell has from time to time held out fluttering and ineffectual hands towards phenomenalism. But he has never embraced it. His traffic with phenomenalism has been no more than a mild and insincere flirtation.\textsuperscript{71}

Since Russell had a prejudice in favour of physics during his constructionist period (cf. *MPD*. 130) and since physics requires unobservable physical objects and events, Russell introduced the theory of sensibilia. The theory of sensibilia suggests that sensibilia continue to exist when they are not in the relation of acquaintance. Russell uses these unsensed sensibilia to justify the *reality* of unperceived objects and events. The introduction of the unsensed sensibilia helps him escape the charges of both solipsism and phenomenalism, since unsensed sensibilia have no place in a consistent phenomenalism. Admitting that sensibilia can exist unperceived, Russell reinforces his belief that objects of physics and common sense exist as constructions of unsensed sensibilia. This goes against phenomenalism in a straightforward sense. Thus Anthony Quinton has remarked: "in the theory of knowledge he [Russell] has really been much more concerned to save the reality, the independence from mind, of perceived fact than to establish the rigorously empirical credentials of his conception of the external world".\textsuperscript{72}

Now one might claim that Russell's construction of physical objects commits him to phenomenalism, at least, in the sense expressed in the second version of phenomenalism. When a phenomenalist says that
physical objects are permanent possibilities of sensation, it sounds close to Russell's construction of physical objects out of sensed and unsensed sensibilia. Permanent possibilities of sensation seem to imply that if we were to be at the right place at the right time we would have an experience of such and such sort or, in other words, the physical objects would seem to us to be in such and such a way. But I think that this claim is suspect on a very important ground; whereas for a phenomenalist, the permanent possibilities of sensation have only a possible existence (since there is no extra-mental support for them), for Russell unsensed sensibilia are actual (real). Since Russell accepts the truths of physics, his position is distinguished from the phenomenalist's by the fact that unsensed sensibilia are actual constituents of physical objects.

As soon as Russell admits the reality of unsensed sensibilia and includes them in construction his realism is completely secured. I think that even the spirit of Russell's pre-constructionist realism is found in his introduction of the theory of sensibilia. This conclusion is fully borne out by the internal textual evidence. Thus any claim that Russell is not a realist but a phenomenalist would break down, I believe, against such assertions as that if a man comes newly to occupy a position in a room "we can reasonably suppose that some aspect [unsensed sensibile] of the universe existed from that point of view, though no one was perceiving it" (Okew. 95). And again, Russell asserts, "[i]t is open to us to believe that the ideal elements [unsensed sensibilia] exist, and there can be no reason for disbelieving this", although "we cannot know it" (Okew. 117). These passages match Russell's undisputed realism in PP where he says that "every principle of simplicity urges us to adopt the natural view, that there really are objects other than ourselves and our sense-data which have an existence not dependent upon our perceiving them" (PP. 24). It is not surprising, then, that in UCM Russell explicitly identifies his position as "realistic" (see UCM. 120).

We have yet to show that Russell's constructionism does not involve an acceptance of phenomenalism in the third sense. We have seen
that Russell does not deny that there are external physical objects over and above sense-data. But sometimes he confines himself to a linguistic level which holds that to say that physical objects are logical constructions out of sense-data is to say that statements about them can be translated into statements about sense-data. And if we can do this we will have at least "extruded" the inferred physical objects "from the world of what there is" (PIA. 273). Here one might claim that Russell is doing exactly what a (linguistic) phenomenalist would do, viz. translating statements about physical objects into statements about sense-data. Thus Sainsbury claims, "[i]n Russell's phenomenistic phase, from 1914 to the middle 1920s, he can easily be read as claiming that physical objects are pure translational constructions out of sense-data".73 There is no denying the fact that Russell sometimes takes construction on a linguistic level (cf. supra, 5.1). However, even if we take Russell's linguistic version as his final position about construction, still, I suggest, he can easily escape phenomenalism. For a strict phenomenalist, say Berkeley, sense-data are mental, but for Russell they are physical. When the phenomenalists say that physical object statements are to be translated into statements about sense-data, they must mean that physical object statements are to be translated into statements about mental sense-data. But in Russell's case they must be translated into statements about physical sensibilia.

Even during the constructionist period Russell, I suggest, need not have abandoned the causal theory of perception. By a "causal theory of perception" we usually mean a scientific theory of perception of the external world. On this view perception is a causal network in which physical objects are causal stimuli, emitting light waves etc. which travel through space and strike the retina etc. and become a sense-datum in the brain. Each of these steps is causally connected to the previous step (cf. supra, 4.1.2). In his pre-constructionist period, Russell accepted a version of this causal theory (i.e., a Lockean variety) to justify the existence of the ever unknown physical objects (things-in-themselves) of vertical inference. But later, due to Wittgenstein's criticisms (cf. supra. 4.4), he realized that such an account of physical
objects is open to grave doubt and ultimately rests upon a principle for which no empirical justification could be given. So he prefers to construct (rather than to infer) physical objects out of sense-data. In doing so Russell puts the burden of justification on construction rather than on the causal theory of vertical inference. The constructed "thing" takes the place of the inferred "thing-in-itself", which was regarded, in pre-constructionist works, as the cause of sense-data. Now after the construction is completed, there is no need to posit such a cause in order to give an account of the reality we talk about. But, from the fact that such a cause is not posited, it does not follow that it is denied. Russell must not be interpreted as denying that our sense-data have external causes. That is to say, he should not be interpreted as denying the scientific account of perception.

I think that Russell's view that physical objects are logical constructions is not incompatible with his realist view holding a causal theory of perception. Nothing in Russell's construction of physical objects indicates a rejection of the causal theory of perception. But what Russell is mainly concerned with is an interpretation and verification of the objects of common sense and physics on the basis of sense-data, and not on the basis of the causal origin of the sense-data. The origin is there whether it is inferred or not which, from an ontological point of view, is the end of the causal chain. "This explains why", as Eames rightly suggested, "in spite of what appears to be a phenomenalist method of constructing the objects of science and of common sense from sensed particulars, the causal theory of perception is brought in as a required assumption".75

It might also be argued that Russell's horizontal theory of perception itself is a version of causal theory which involves an acceptance of causal laws. This version of causal theory is evident when he insists that the "inferences from perceptions to physical facts depend always upon causal laws" (OKEW, 129). Russell explicitly holds that the construction of things consists of "those series of aspects which obey the laws of physics" (OKEW, 115-6; see also RSDP, 164). Physics has been built upon the assumption that there are unobserved objects or events
the effects of whose behavior has been found to be consistent in such and such circumstances. Thus there is something objective which is a prerequisite assumption for the establishment of laws of physics. Now what could these laws of physics be other than causal laws which allow "us to infer the existence of one thing (or event) from the existence of one or more others" (OKBW. 216; cf. Reply. 701-2). Russell's notion of matter also clearly reveals his assumption about a causal connection between things and their appearances. "The whole causal efficacy of a thing resides in its matter" (RSBP. 158; see also 170), so appearances are causally affected by matter.

In light of the above discussion it becomes clear that (a) Russell's constructionist programme does not commit him to phenomenalism and (b) it is quite compatible with his realism holding a causal theory of perception. But one might wonder why if Russell should hold a realist theory of perception, by not denying the independently existing physical objects (which he does not), then why should he avoid affirming their existence? The answer would be, that he is playing an intelligent epistemological game. Since he is mainly concerned to show the general grounds for what we claim to know, with the constructionist technique he can talk about physical objects without having to assert that such objects exist as the causes of our sensibilia. The whole constructionist programme is designed not to deny the inferred entities, but to avoid any risk of error in our pursuit of empirical knowledge: "you have anyhow the successive appearances, and if you can get on without assuming the metaphysical and constant desk, you have a smaller risk of error than you had before" (PLA. 280). But unlike a phenomenalist Russell is not denying the substantial desk. There may be a metaphysical substance behind the desk's empirical manifestations (PLA. 272).

Russell's avoidance of affirming the existence of physical objects, beyond sense-data, is motivated, I believe, not only by Occam's razor, but also by Hume's view with which he has most in common. Since our direct experience is never of anything beyond sense-data (or what Hume calls sense-impressions) any belief in actual objects outside sense-data must rest upon an inference which, Russell agrees with Hume,
can never be satisfactorily justified. But since Hume, as Russell understands him, was unwilling to abandon empiricism, he embraced scepticism as the only remaining rational option (although Hume rejects scepticism on psychological grounds). Russell admits that there are difficulties in explaining how we acquire knowledge which is not based on direct experience, but he also admits that "the view that we have no such knowledge is utterly untenable" (MPD. 132). Recognizing the limitations of empiricism Russell, unlike Hume, rejects scepticism and finds his job to be one of reconstruction. Ayer states Russell's motive:

A position of complete skepticism is not practically tenable: we cannot divest ourselves of what Hume called our natural beliefs; but we may be able to reformulate these beliefs in such a way as to increase their security without too seriously impoverishing their content.

So relying upon the Humean sceptical arguments, Russell rejects the view of objects in the external world as inferred entities, all our talk of which may be wrong; instead he substitutes a method of treating them as constructed wholly of elements which, in the final analysis, are reducible to sensibilia.
Notes to Chapter Five


2. My treatment of Russell's analysis of cardinal number will be brief, and carried out only to the extent that it exemplifies the method of logical construction.


4. W.V.O. Quine notes that the principle of abstraction does not enable us to dispense with abstract entities since it allows classes which themselves are fully as abstract as the entities dispensed with. See his Mathematical Logic (Cambridge, 1958), p. 120; "On universals", Journal of Symbolic Logic, Vol. 12 (1947), p. 79. However, since Russell is mainly concerned with reducing abstract entities to minimum, he certainly has some advantage in constructing numbers out of classes given that, as Ayer points out (cf. his Russell and Moore: The Analytical Heritage, p. 20), classes are not as mysterious as numbers (cf. IMP. 18).


8. Q., Wisdom, ibid., p. 193. Wisdom quotes this passage from his lecture notes.


10. See Ayer, Bertrand Russell, pp. 34, 77. Presumably all horizontal inferences are included in the recognized canons of scientific method, but not vice versa since the latter include more than horizontal inferences.
11. This has also been suggested by M.B. McMahon. See his Bertrand Russell’s Two Ontologies, p. 145.

12. For the discussion of how the linguistic, epistemological (and also ontological) levels of Russell's philosophy are linked see William Lycan, "Logical Atomism and Ontological Atoms", Synthese, Vol. 46 (1981), pp. 207-29.


16. This definition does not give "logical construction" full generality; it suggests the kind of construction Russell presented in relation to the objects of physics and common sense. However, since I am concerned only with the construction of physical objects, it serves my purpose.

17. One might then ask why not bring the same charge against canons of scientific method; after all the inferences validated by scientific method fall short of proof as well. However, Russell might reply that although the latter fall short of proof, still they are empirically verifiable, since the entities asserted by the conclusions of the canons of scientific method are empirical. By contrast the inferences to physical objects involve entities which, being metaphysical, are never empirically verifiable.


19. In HK Russell is forced to adopt a version of this approach. See HK. 308-18; 489-90.


21. Ibid.

22. Ibid., f. 4. See also "On Matter", f. 13.


24. Russell mentions Occam's razor ("Entia non multiplicanda praeter necessitatem") as early as in "On Matter" (f. 19). However, when he revised this paper on Oct. 16, 1912 (cf. B.R. to O.M. # 606, pmkd. Oct. 16, 1912), Russell crossed out a few pages (which mainly deal with the metaphysical problems of matter) including the razor. Most
probably he was not, at this stage of construction, quite sure of the use of Occam's recommendation.


27. See his "Analysis and the Unity of Russell's Philosophy", p. 106

28. Russell, "The Nature of Sense-data -- A Reply to Dawes Hicks", p. 79. See also RSDP. 141.

29. The term is borrowed from Morris Weitz, op. cit., p. 105.


32. Ibid., p. 166; see also R.J. Hirst, The Problems of Perception, p. 77.


37. Michael Bradie, "Russell's Scientific Realism" (a paper presented at the Russell Conference '84 in Toronto), typescript, p. 27.

38. The complete discussion of perspective will be given in the next chapter in connection with the construction of space.

39. There is an apparent confusion in Russell's use of the term "appearance". One might be inclined to think (cf. Hirst, The Problems of Perception, p. 77) that an appearance must appear to an observer. But, for Russell, this is not the case. An appearance does not have to "appear" to an observer in order to qualify as a member of the class which is the momentary object (cf. RSDP. 147; AM. 101).

40. In HK Russell approaches the problem in the 'causal lines' according to which "[i]t is frequently possible to form a series of events such that, from one or two members of the series something
can be inferred as to all the other members" (HK. 508, emphasis Russell's).

41. "Matter. 2 Problems, (1) Space (2) Things", f. 5. See also "Here and There is Sensation", f. 7.

42. See his "Russell's Scientific Realism", p. 13.

43. Russell's contrast between real and fictitious would now-a-days be expressed as a distinction between observational entities and theoretical entities. As a good empiricist Russell treats the former as certainly real, the only objects for whose existence we have direct empirical evidence.

44. The question of the permanence of physical objects can only be dealt with, completely, after time itself has been constructed. However, here we assume that the construction of time is completed. See Russell's "On the Order in Time", Logic and Knowledge, pp. 347-63.

45. It should be noted that what Russell wants to emphasize here is not the view about the origin of scientific concepts. Rather his contention is that the laws of physics could be stated without the assumption of something permanent underlying the series of appearances.


47. See Ayer, Bertrand Russell, p. 80.

48. Also "Philosophy of Matter [etc]", unpublished manuscript, 1912, R.A. file # 220.011350 (folios not numbered).

49. By the phrase "laws of correlation" Russell is referring to what he calls "laws of physics" or "laws of dynamics" in OKEW and RSDP.


51. Ibid., p. 64.

52. Mackie even defends his position by citing chapter II ("The Existence of Matter") of Russell's PP.

53. It is not clear how Russell understands the physicist's use of "matter". However, what he says on various occasions suggests that he understands the physicist's use of "matter" in the same sense as he understands the metaphysician's use of "thing-in-itself" (cf. OKEW. 83; RSDP. 158).


58. Mill, op. cit., chapter II.


63. This paper is published in PAS, Vol. 15(1914-15), 227-51.

64. Ibid., p. 227.


70. E.R. Eames has developed a similar view in her Bertrand Russell's Theory of Knowledge. cf. chapters V & VI.


74. For such a view see M.H. Salmon, "On Russell's brief but notorious flirtation with phenomenalism", p. 18; Bradie, *op. cit.*, p. 12.


76. Whereas Hume thought that sense-impressions were mental entities, Russell maintains that sense-data are not mental, but physical entities.

CHAPTER SIX

CONSTRUCTION OF SPACE AND TIME

6.1 Construction of Space

In our previous chapter we have seen that in constructing physical objects Russell claims to have given an account of the objects of physics and common sense in terms of sensibilia. Now one of the main requirements of both physics and common sense is that their objects should exist in a public space, that is to say, existence in a public space is a defining characteristic of physical objects. So Russell must give some account of space and the meaning of existing or location in public space. Public space is contrasted with private spaces which are, roughly, defined as the spaces of separate senses and in which sensedata are apparently located (see infra, 6.1.1).

We have noted earlier that, in PP, Russell introduces the discussion of space to give an account of the nature and existence of physical objects (cf. supra, 4.2). In PP, the various cases of the relativity of perception force Russell to conclude that those objects which are immediately known to us are sense-data, and that these sensedata are signs of physical objects. But when he held that sense-data are signs of physical objects, he conceived of physical objects as inferred entities which occupy space. In our preceding chapter we have seen that instead of inferring physical objects from sense-data, Russell, in his post-PP works, constructs them from sense-data. In PP Russell held that physical or public space, containing physical objects conceived as inferred entities, was likewise inferred from private spaces. Now Russell is also concerned to show that public space is a logical construction
out of the private spaces of sense-data. This constructional view is developed in \textit{OKEW}, RSDP, UCM and some unpublished manuscripts written during 1912 and 1913. The main concern of this section is to give an account of Russell's construction of space. However, for the most part, I shall not be engaged in discussing Russell's rather complex mathematical construction of points in space. I shall confine myself to that discussion only in so far as it is concerned with the relation of perception to physical objects.

6.1.1 Private Space

Before we approach Russell's construction of a public space or the space of physics and common sense, we have to consider what Russell means by private space. In \textit{PP}, there is a passage which anticipates the theory developed in his constructionist works. In \textit{PP}, Russell distinguishes between an all embracing "real" space of physics and the "apparent" spaces of perception. These apparent spaces are called private spaces where sense-data are apparently located.\textsuperscript{1} Russell says

The real space is public, the apparent space is private to the peripient. In different people's private spaces the same object seems to have different shapes; thus the real space, in which it has its real shape, must be different from the private spaces (\textit{PP}. 29-30).

But Russell gives a more worked out theory of private space in his constructionist works than he gave in \textit{PP}. An individual's private space, according to Russell's post-\textit{PP} view, is constructed from the correlation between the spaces of his different senses.

On Russell's view each of our heterogeneous senses has its own space. However, for the sake of simplicity of exposition, Russell confines himself "to the sense of sight, ignoring minds which are devoid of this sense" (\textit{OKEW}. 94). Let us consider our momentary visual field. Our visual field, for Russell, consists of patches of colour having shapes and spatial relations. These spatial relations consist of three primary
relations (viz. right and left, up and down, and far and near) which lead us to arrange our visual field as a three-dimensional manifold.

Although the senses of touch, hearing etc. are ignored, for convenience, they can also be correlated with the space of sight in the private space. As Russell says:

The one space into which [all] ... kinds of sensations fit is an intellectual construction, not a datum. And besides touch and sight, there are other kinds of sensation which give other, though less important spaces: these also have to be fitted into the one space by means of experienced correlations (OKEW. 118).

When we simultaneously obtain a tangible and visual sensation we are inclined to associate them with one place. However, the correlation of the various spaces of separate senses into one private space is not optional, rather, in certain cases, it is a requirement. "Sometimes, namely in the case of transparent things, we find that there is a tangible object in a touch-place without there being any visible object in the corresponding sight-place" (OKEW. 88). Again, if on pressing the eyeball, we see two tables, then there are two visual tables. But "we may discover by touch that there is only one tactile table. This makes us declare the two visual tables an illusion, because usually one visual object corresponds to one tactile object" (OKEW. 93-4). So although "the manner of correlation of touch and sight is unusual", the correlation generates one private space which embraces all our sense-data. Now we may define a private space as the class of spaces of separate senses.

Corresponding to our private space there is what Russell calls a "private world" which is a view of the universe actually perceived by one individual (OKEW. 95; RSDP. 151; UCM. 132-3). Each individual's own private world determines his own space, a space private to that individual and which is never "shared" by another individual. Russell seems to suggest that since it does not appear that two men ever both perceive at the same time any one sensible object; when they are said to see the same thing or hear the same noise, there will always be some difference, however slight, between the actual shapes seen or the actual sounds heard.
If this is so, and if, as is generally assumed, position in space is purely relative, it follows that the space of one man's objects and the space of another man's objects have no place in common, that they are in fact different spaces, and not merely different parts of one space. I mean by this that such immediate spatial relations as are perceived to hold between the different parts of the sensible space perceived by one man, do not hold between parts of sensible spaces perceived by different men. There are therefore a multitude of three-dimensional spaces in the world (UCM. 132).

Elsewhere Russell explains this situation thus:

What we call the different appearances of the same thing to different observers are each in a space private to the observer concerned. No place in the private world of one observer is identical with a place in the private world of another observer (RSDP. 147).

Consequently, there are indefinitely large number of private spaces in the world, "there are all those perceived by observers, and presumably also those which are not perceived, merely because no observer is suitably situated for perceiving them" (UCM. 132-3). "[T]here are an infinite number of such worlds which are in fact unperceived" (OKGW. 95). So to avoid the view that all the spaces associated with these worlds are real only when they are being perceived, Russell introduces the term "perspective" to stand for a point of view without assuming a peripient (RSDP. 152; cf. also OKGW. 95; UCM. 133). This perspective has an actual or potential private space. The perspective which contains an actual private space is called a private world; that is to say, private world is linked with an actual observer. So, on Russell's account there are some potential private spaces without a corresponding private world, i.e., those which are not perceived.

Each perspective is a point in space from which appearances (sense-data) of physical objects may be viewed. A single perspective can contain but one aspect (in a given sense modality) of a given object. Each perspective, whether perceived or unperceived, has its own private space. Each one is a three-dimensional world in which various data have spatial relations to one another. It constitutes a private space in the
sense that no "place in the private world of one observer is identical
with a place in the private world of another observer" (RSDP. 147). This
follows, according to Russell, from the fact that no two perspectives
have any element in common, "for places can only be constituted by the
things in or around them" (OKBV. 95).

6.1.2 Perspective Space

In addition to private spaces of perspectives, there is also,
according to Russell, the space in which the perspectives themselves are
located. This space is what Russell calls "perspective space". A persp-
ective space is quite different from a private space, and each private
space is different from every other one. Each private space is a point
or constituent spatial unit in perspective space. Now since there are
many points of view possible in the world, the perspective space can be
thought of as the space of "points of view" (OKBV. 97). What Russell
suggests is that a "perspective" of the world would be the point of view
a person would have if he occupied that position in it. In addition to
this, although there are many perspectives possible, there is only one
"perspective space". It is this space which, according to Russell, is
ordinarily referred to in speaking of spatial relations between physical
objects; this is the public space in which physicists are interested.

Now Russell proceeds to construct perspective space out of the
private spaces of perspectives. He maintains that perspective space can
be constructed in a manner similar to the construction of physical
objects in that space. A physical object can be constructed because of
the similarity and continuity of sensibilia. In the same way, the con-
struction of a public or perspective space is possible on the basis of
the similarity and continuity of the correlated neighbouring perspec-
tives and the sensibilia composing them. Two perspectives which are very
similar are said to be "near" in space. It is possible, Russell thinks,
to correlate one perspective and the sensibilia which constitute it with
another perspective and its sensibilia according as they are "near" to
or "far" from each other in space. When we find that the similarity
between a great many sensibilia of one perspective and a great many of
the sensibilia of another perspective "is very great, we say the points
of view of the two perspectives are near together in space" (OKEW. 96).

The series of similar perspectives will be compact since,
between any two perspectives, no matter how similar, there is a third
perspective. Russell explicitly mentions that

[b]etween two perceived perspectives which are
similar, we can imagine a whole series of other
perspectives, some at least unperceived, and such
that between any two, however similar, there are
others still more similar (OKEW. 96).

When we are able to relate the position of many of the sensibilia in one
perspective with many in another, we can treat the whole perspective as
an element and speak of it as being to the "left" or to the "right" or
"in front of" the other perspective. "In this way", Russell suggests,
"the space which consists of relations between perspectives can be
rendered continuous and (if we choose) three-dimensional" (OKEW. 96).
That is to say, the sensibilia of each perspective are ordered in a
three-dimensional space. Neighbouring perspectives present a similarity
and continuity of three-dimensional spatial relations. Therefore, one
can say that the space of one perspective appears continuous with the
neighbouring space of another perspective.

It should be noted here that the space in which perspectives are
correlated according as they are "near" to or "far" from one another is
quite different from the space inside perspectives themselves. Since the
space of different perspectives is always private to those perspectives,
the space in which different perspectives are correlated is a different
sort of space. This space is "a relation between the perspectives, and
is not in ... [any] of them; no one can perceive it, and if it is to be
known it can be only by inference" (OKEW. 96). It is not clear what
Russell means by the last part of the above statement ("if it is to be
known it can be only by inference"). But whatever he means, he cannot
mean that the perspective space can be known by inference, for that will
destroy the spirit of constructing space and will get him back to his PP
view. And in that case it would not be possible to "bridge" the gulf
between perception and physics which he is aiming at. I think that the use of "inference" in the present context is an unfortunate mistake.

Perspective space is the system of private spaces themselves which are ordered by means of qualitative similarity of sensibilia which form a continuous series of aspects of the "same" thing. Now since perspective space is the only space of which perspectives themselves are elements, we must show the correlation of these perspectives with the all-embracing perspective space. To show how this correlation is possible let us consider Russell's example of a penny which presents different appearances in different perspectives. In some perspectives the penny appears (to a person with normal functioning sense-organs) circular, in others elliptical. In some perspectives the penny appears bigger, in others smaller. Now we may arrange the perspectives in which the penny appears into groups according as the appearances of the penny are circular, as they are elliptical, as they are bigger, or as they are smaller. All these perspectives, according to Russell, can again be arranged in a three-dimensional order.

Let us consider all the appearances in which the penny looks round and arrange the circular perspectives in order according to their various sizes. We can then form a continuous series of perspectives including both those perceived and those calculated, but not perceived, by ordering them according as the apparent size of the penny changes. To demonstrate this we may remove the original penny to a place further away and imagine the series indefinitely prolonged. In a similar way, other series of perspectives can be formed out of another group of perspectives in which the penny is seen end on. All these perspectives will again be ordered on a plane in terms of their varying sizes. By utilizing this procedure, all the visual appearances of the penny can be arranged in a three-dimensional spatial order. Now treating all these various perspectives as elements or points we construct a new space. This constructed space is called an all-embracing "perspective space", since it contains all the perspectives as its elements.
6.1.3 Location of Physical Objects in Perspective Space

After the construction of perspective space is completed the physical object, which Russell identified with a class of sensibilia, has to be located in this space. To illustrate the location of a physical object in perspective space let us return to Russell’s penny example and consider the following figure:

![Diagram of penny perspectives]

Fig. 1

Let us suppose that Fig. 1 represents a penny located at the center of a space. The penny presents various perspectives of it from different points of view. In some perspectives it will appear bigger and in others smaller, in some perspectives it will appear round, and in others elliptical, and so on. Now since none of the perspectives is identical
with any other, no member of each perspective is identical with any other member. However, in some group of perspectives the members will have similar shapes. In Fig. 1 $\alpha$ and $\beta$ represent two such groups which are formed by arranging similar shapes of various perspectives including both those that are perceived (e.g. A, B and D, E) and those that are not perceived but hypothetically calculated\(^6\) (dots represent some of them). In group $\alpha$ the penny appears to be round from any position (e.g. A and B) and in group $\beta$ it appears to be elliptical from any position (D and E). However, although $\alpha$ and $\beta$ are formed by the members of perspectives having similar shapes, these members have different sizes; the perspectives that contain bigger appearances of the penny (B and E), we say are nearer to the penny than those which contain a smaller appearances of the penny (A and D).

Let us now draw straight lines from positions A and D towards the penny. Groups $\alpha$ and $\beta$ now represents two lines. On line $\alpha$ and $\beta$ the members will look bigger as we get nearer to the penny. These two lines ($\alpha$ and $\beta$) will meet at a certain place (or point) C in perspective space. Now since perspective space is a construction out of spaces within various perspectives, the place C, where $\alpha$ and $\beta$ intersect in perspective space, will be like a spatial "point" in it, which will be nothing other than a perspective. It is at C which is "defined as the place (in perspective space) where the [penny] is" *(ORKEW. 98; see also RSDP. 162; A. Matter. 205).* The place C in perspective space is identical with the place where the penny is in the space of common sense and physics. However, although it is easy in theory to arrive at C, "the place where the penny is", it is not so easy in practice. In practice there is a limit beyond which we cannot go "because, so far as experience goes, the penny ceases to present any appearance after we have come so near to it that it touches the eye" *(ORKEW. 98).* This is certainly a limitation on arriving at C. In fact the lines will break in the region of C (when we get too close to the penny). And this shows that there is no way of proving that all lines of perspectives will meet at a single point. However, admitting this limitation, Russell might say
that because of this practical problem we should draw the line from a
distance and assume a hypothetical perspective closest to C.

From the above observation it appears that, for Russell, the
penny appearance is seen to occupy two places in perspective space. It
occupies a place in private space (which is a spatial point in perspec-
tive space) wherever a sensibile of it appears, or the place wherever
the penny is said to have an effect; and at the same time it occupies a
place in perspective space which is a construction from all the sensibi-
lias of the penny appearing in different perspectives. As Russell says:

It will be observed that two places in perspective
space are associated with every aspect [sensibile]
of a thing: namely, the place where the thing is,
and the place which is the perspective of which
the aspect in question forms part. Every aspect of
a thing is a member of two different classes of
aspects, namely: (1) the various aspects of the
thing, of which at most one appears in any given
perspective; (2) the perspective of which the
given aspect is a member, i.e. that in which the
thing has the given aspect. ... We may distinguish
the two places as that at which, and that from
which, the aspect appears. The "place at which" is
the place of the thing to which the aspect
belongs; the "place from which" is the place of
the perspective to which the aspect belongs (OE 100; see also RSDP. 162-3; AW. 130)

Every sensibile is a member of two classes of sensibilia, viz. the class
constructing the penny to which it belongs and the class constructing a
perspective to which it also belongs. Accordingly, two places in perspec-
tive space are associated with every sensibile. There is the place at
which it appears is the place where the penny is of which it is a mem-
ber; and there is the place from which a sensibile of the penny appears
is the place of the perspective of which the sensibile is a member. The
place at which and the place from which a sensibile appears account for
the duality of our perception of the penny. The penny, or any other
object, always appears at a certain place or distance from us, and yet
our awareness of it is where we are.

By introducing the "place at which" and the "place from which"
Russell claims to have shown that each sensibile has two locations in
perspective space. This claim is evident even in Russell's earliest constructionist attempt:

A sense-datum is not in a place simpliciter, but is in a place from another place. Put

\[ A(s,x,y) \iff s \text{ appears in place } x \text{ from place } y. \]

Thus \( s \) is what we call the sensible appearance of an object in \( x \) when viewed from \( y \).

The distinction between these two places enables Russell to define "here" as the place in perspective space which is occupied by our private world, a place which in perspective space "may be part of the place where our head is" (\textit{OPB}, 100). The place here in public space is the perspective that we perceive at the time we say "the penny is here". If it is far from "here" it means that the perspective that defines the place where the penny is in perspective space is far in perspective space from the perspective that is composed of our present sensibilia. Now since our present perspective is located in part of the place in perspective space that our head occupies, our present sensibilia can be said to be "inside our head", in our brains.

At face value Russell's assertion that sensibilia are located in our brains seems to give rise to an implausible consequence for common sense. Taking Russell's own later example, when a physiologist examines the brain of another person, we usually say that the physiologist is observing the other person's brain. But since Russell's \textit{at} and \textit{from} schema suggests that whatever each person perceives are really sense-data located in that person's brain, the physiologist is observing sensibilia which are within that physiologist's brain.

It is natural to suppose that what the physiologist sees is in the brain he is observing. But if we are speaking of physical space, what the physiologist sees is in his own brain.\(^6\)

"This example," Fritz says, "has caused considerable surprised comment, since it is a strange result judged by more common sense theories".\(^1\)

Common sense tends to show that Russell's assertion that sensibilia are "in" the brain of the physiologist is untenable.
Although Russell's assertion that sensibilia are located in our brains, together with his "physiologist's observing his own brain" example, generate considerably difficulty, there is an intelligible analysis for Russell.\textsuperscript{12} When Russell says that our sensibilia are located in our brains, he is not using the preposition "in" in the sense as when we say, for example, "this match is in the matchbox".\textsuperscript{13} Russell himself explicitly clarifies his point, "I do not think that my visual percepts are a 'portion' of my brain" (Reply. 705). What he actually means is that the sensibilia (which are physical and are outside \textit{in} the physical objects) have \textit{effects} in our brains and thereby produce certain events. These events are what happen when the sensibilia of the physical objects appear to us (cf. \textit{supra}, 3.3). In saying that the sensibilia of which we are aware are inside our brains, Russell means that the perspective \textit{from} which our sensibilia \textit{appear} is inside our heads. Now our heads are momentary things located in perspective space in the same way as the penny is. To say that sense-data are inside our brains is to say that they appear from those perspectives which are the places in perspective space at which our heads are located.\textsuperscript{14} In this sense the location of the appearing (not of what appears) in perspective (physical) space is in our heads. So the physiologist is, in fact, observing other people's brains which have only an \textit{effect} in his own brain.

\textbf{6.1.4 Six-dimensionality of Space}

We have seen that perspective space, which is the space of physics and common sense and has three dimensions, is constructed out of private spaces which also have three dimensions. So the universe, Russell claims, is a universe of six dimensions. But the main difficulty in Russell's formulation is to see how perspective space is \textit{correlated} with private space so as to generate a six-dimensional space. Apparently, what he seems to have in mind is that since each sensibile occupies two places \textit{viz.} the place \textit{at} which (public space) it appears, and the place \textit{from} which (private space) it appears, and since each of these two
places is a three-dimensional space, to account for these places he thinks he requires a six-dimensional space.

Russell himself hardly argues for a six-dimensional space. The only reason, if it is a reason, he gives in RSDP for introducing a six-dimensional space is that "it is a three-dimensional series of perspectives, each of which is itself three-dimensional" giving a overall constructed space of six dimensions (RSDP. 154). In UCM, Russell seems to be a little bit more specific in this matter. Here he suggests that given any appearance of an object in a perspective, three co-ordinates are required to assign the position of the perspective in perspective space, giving an overall constructed space of six dimensions with six co-ordinates. To quote Russell:

Since each of the spaces [private and perspective] is itself three-dimensional, the whole world of particulars [sensibilia] is thus arranged in a six-dimensional space, that is to say, six co-ordinates will be required to assign completely the position of any given particular, namely, three to assign its position in its own space and three more to assign the position of its space among the other spaces (UCM. 133).

Russell's use of "co-ordinates" and "dimensions" sounds scientific in spirit. But it is not at all clear what he means by the assertion that "six co-ordinates will be required to assign completely the position of any given particular". What he seems to have in mind may be made clear from the example of a three-dimensional space of the physicist. For a physicist dimensionality refers to number of degrees of freedom. A point confined inside a three-dimensional object may move in three mutually perpendicular independent directions. So the space of the object, the physicist claims, is three-dimensional.

To locate a point in a three-dimensional space, three concurrent mutually perpendicular lines, which are usually called axes, are used. The axes are often called the x axis, y axis and z axis.
As is shown in Fig. 2, the reference lines x and y define a two-dimensional plane. The reference line z introduces the third dimension. The point 0 is at the intersection of all three axes, which is called the origin of the reference frame. From the origin 0, we can determine the position of any object in space. However, it should be noted here that the origin is arbitrarily selected.

For simplicity of exposition let us suppose that our physical object is a cubic solid object, not a penny. From the arbitrary reference point 0 we can fix its position in three-dimensional space.
Let us consider Fig. 3:

From the reference point 0, we can show the position of the cubic object in public space. The point C is one of the places where the object is. C has three co-ordinates $<5.5, 2.5, 2>$ associated with x, y and z axes. These three co-ordinates determine the position of the object in public space. Now let us suppose that a real observer is situated at 0, the point from which the appearance of the object is to be apprehended. In addition to the three usual co-ordinates Russell thinks that he must assign three more co-ordinates to locate the point of a sensibile in private space.

One of the major defences of Russell's claim for a six-dimensional space is that he assigns three dimensions to locate a sensibile in a private space. But this is possible only if we can apply spatial
terminology i.e., "measurement", "movement", "points of view", etc. to private space. But, as W.D. Joske has pointed out, Russell's private space is a space in which no possible measurement could be applied. This is because the slightest change in the point of view or the slightest movement of the observer's body means that he is no longer aware of the same private space or the same sensible object. So we can never approach an object in private space, and as a result we can never measure exactly the distance between an object and ourselves. As a matter of truth, we can never fix the position of a sensible object in our private space, as explained above, although we might assign three co-ordinates with reference to some other reference frame.

Russell might claim, since he says that private spaces are "ordered by means of their similarities" (OKEW. 97) and since he uses "similarity" in a loose sense (cf. supra. 5.4), that his talk about the dimensionality of private space does not allow itself to be criticized by pointing to slightest change in the observers' position. However, even if we admit this he still has to show the position of our private spaces among other spaces. Now if we suppose that he can assign a position from a given origin, it will still not generate a six-dimensional space. The reason is that our first three co-ordinates will not be commensurable with the second three, as the two sets would be measured from different origins. Therefore, the supposed six co-ordinates could not assign "completely the position of any given particular" in the way that a co-ordinate set is usually supposed to do. Moreover, when one talks of six-dimensional space, the assignment of co-ordinates would be done only in a single space, not in two different spaces.

Russell talks of two different spaces, i.e., private spaces (those of sense-data) and physical or perspective space (that of physics). But it is not clear how these two kinds of space are related to form a six-dimensional space. The main weakness of his theory lies in his vague and incoherent notion of correlation between three-dimensional private space and three-dimensional perspective space. There is a dilemma involved in Russell's position. If the correlation is not coherent (which it is not), then we cannot correlate the private space and the
perspective space; and if it is possible to correlate them then there is no need to introduce six-dimensional space. Russell fails to realize that in this case 0 and its co-ordinates \(0,0,0\) and C and its co-
ordinates \((5.5, 2.5, 2)\) will be in the same three-dimensional space.

At any rate, Russell's notion of a six-dimensional space is an unfortunate one. Even if Russell could show the plausibility of six-
dimensional space he still has to make clear whether this compound six-
dimensional space is supposed to be public or private. What he says in RSDP and UCM seems to imply that it is "a mixture of both, the private
spaces being organized in a three-dimensional public space". However, if we take it as a mixture of both three-dimensional private space and three-dimensional perspective space, Russell will be again in trouble to show how this six-dimensional space is related to the public space of physics. Even it might also be asked what actually do we need to locate in such a six-dimensional space? Certainly not the apparent position of private sense-data since they are located in private spaces nor physical objects since they are located in public space nor sense-data since they are also located in public space.

Now it appears that Russell's attempt to construct an all-
embracing six-dimensional space is a failure. But given that the theory is a failure, the question is: is there anything good to say about the motive for introducing a six-dimensional space? Does the theory have a positive impact on Russell's own philosophy? Ayer charges Russell's whole constructionist plan with circularity. However he at the same time praises the theory, on different occasions, as "highly ingenious". But Ayer never explains where lies the ingenuity of the theory. O'Connors, on the other hand, has traded on Ayer and asks "what does it profit a theory to be ingenious, if it is not even coherent?" and consequently he shows the incoherence of the theory in full. I agree, to some extent, with both Ayer and O'Connor. I agree with O'Connor that Russell's theory is incoherent, but I also agree with Ayer that Russell's theory is an ingenious (if not highly ingenious) attempt to solve certain problems of perception. With this six-dimensional character of space, I believe, Russell intended to give an intelligible picture of the world from the
view point of both physics and perception. This is why, even 45 years after its discovery, Russell was pleased with the theory. As he says:

There were several novelties in the theory as to our knowledge of the external world which burst upon me on New Year's Day, 1914. The most important of these was the theory that space has six-dimensions and not only three (MPD. 105).

Russell himself must have seen some novelty in a six-dimensional space. But what is it? We have seen that, for Russell, sense-data are physical entities. We have also seen that they are private to each perceiver. Now with the discovery of the six-dimensional character of space, Russell might have thought that the difficulty of regarding sense-data as parts of physical objects is overcome, and the way is made clear for the construction of physical objects from sense-data.

Russell surely realizes that there is an ambiguity in the word "place" in relation to sense-data. As we have seen, each sense-datum is associated with two places viz. the place at which it is located and the place from which it is being perceived. Assignment of these two places to a sense-datum has a great impact on Russell's theory of perception. It accounts for why physical objects appear to have different shapes or different spatial relations to other things when perceived from different points of view. The perceptual relativity of our senses shows that the appearance of an object varies with the points of view, position, location and distance of the observer. A table may appear round from a particular point of view but from a different point of view it may appear elliptical. As Russell says:

As we walk round the table, its aspect [appearance or sense-datum] changes; but it is thought impossible to maintain either that the table changes, or that its various aspects can all "really" exist in the same place. If we press one eyeball, we shall see two tables; but it is thought preposterous to maintain that there are "really" two tables (OKEW. 93).

This shows that the same table, or any physical object, may appear to have different qualities from different points of view; but the same table cannot be both round and elliptical. Then which one of these two
appearances is correct and which one is erroneous? What account should we give of this situation? When one has an elliptical appearance, even when one admits that the table is round, certainly one has a perceptual experience. Then how can we characterize this perceptual experience? Russell's answer is that this difficulty disappears when we realize that although the table cannot be both round and elliptical it can appear to have both these qualities from two different points of view. The incompatible qualities of the table are not in the same place (place at which it appears), but in different places, viz. the different places from which these shapes are perceived (RSDP. 146; OKBN. 93). This consideration is a straightforward defence of Russell's realism that "there can be something more real than objects of senses [sense-data]" (OKBN. 93).

To give an account of perceptual relativity Russell might have thought that only after discovering six-dimensional space, could he assign to each sense-datum these two places. Prior to the discovery that a sense-datum could be associated in two places, it seemed impossible that data which are essentially private could provide any dependable information about physical objects. I think that Russell is right in assigning two places to sensibilia. But I do not think that this gives him any good reason to postulate a six-dimensional space. In fact, I think, he does not require a six-dimensional space to assign sense-data to two places. The place at which (physical space) and the place from which (private space) both belong to the same three-dimensional perspective space. Russell's distinction between the "place from which" a sensible appears in private space and the "place at which" it appears makes it reasonably clear what he is trying to get out of it. And, in fact, this distinction avoids certain confusion, such as the same table's appearing round and elliptical from different points of view, in our perception. But Russell fails to realize that the privacy of space does not increase the dimensionality in space. Moreover, I think that Russell simply associates these two places in one all-embracing place and then adds their dimensions.
6.2 Construction of Time

In the preceding section I have mentioned that one of the defining characteristics of physical objects, for both physics and common sense, is that they exist in space. Another characteristic of physical objects is that they exist in time. However, it should be noted here that talk about objects existing in time is merely a façon de parler, what we actually mean is events occurring in time; but again events can occur only where there are objects. Now what is time? In everyday conversation no one with minimal linguistic competencies fails to grasp the meaning of utterances which make implicit or explicit reference to time. But the matter becomes confused and perplexing when we ask what it is that we are talking about when we talk about time, and in what way physical objects exist in time. The reason is that we do not have any direct experience of time. What we immediately experience are events which have always some finite duration, however short. "We cannot point to a time itself, but only to some event occurring at the time" (OEWE, 122).

So the notion of time is abstract. But however abstract it might be, Russell has to arrive at such a notion of time at which events can be located, just as he has given physical objects position in space.

Since Russell has to show not only that things (events) exist in time, but also the order in which they exist, he uses the common vocabulary which includes terms for various temporal relations such as being "earlier" or "later" than, being "simultaneous" with and so on. Russell writes:

Immediate experience provides us with two time-relations among events: they may be simultaneous, or one may be earlier and the other later. These two are both part of the crude data; it is not the case that only the events are given, and their time-order is added by our subjective activity. The time-order, within certain limits, is as much given as the events (OEWE, 121-2).^{22}

Now since it is events which we can directly know, they must be the starting point from which we set to arrive at the notion of time. Out of the above two time-relations we construct our own private times.
There is no limit of private times. The sum total of all events that can be arranged in a temporal order of earlier, simultaneous or later constitutes a "biography". Thus the biography in which a given event occurs is defined as the "sum total of all the particulars [events] that are ... either simultaneous with or before or after a given particular" (UCM. 135; see also RSDP. 159; AW. 128). But just as there are perspectives which are not perceived, so also are there biographies which are not lived by anybody. A biography that is not lived by anybody is called an "official" biography (UCM. 135). In Russell's view, all the mutually exclusive biographies make up the history of the world.

Now we have to correlate the times of different biographies so as to arrive at an all-embracing objective time and thereby fix an objective physical date. But how is this correlation possible? From a prima facie consideration, it would seem that events in two exclusive biographies could be correlated by the relation of "simultaneity".

Two events $E_1$ and $E_2$ are simultaneous iff. there is a certain period of time in which both are occurring entirely. Russell proposes that the correlation of the times in two different biographies is achieved by beginning with the principle that "the appearances of a given (momentary) thing in two different perspectives belonging to different biographies are to be taken as simultaneous" (RSDP. 160). However, although it sounds plausible from a common sense point of view, Russell realizes that it generates difficulties associated particularly with sound and light which prevents us from regarding two events in two different biographies as simultaneous. As he writes:

Suppose $A$ shouts to $B$, and $B$ replies as soon as he hears $A$'s shout. Then between $A$'s hearing of his own shout and his hearing of $B$'s there is an interval; thus if we made $A$'s and $B$'s hearing of the same shout exactly simultaneous with each other, we should have events exactly simultaneous with a given event but not with each other. To obviate this, we assume a 'velocity of sound'. That is, we assume that the time when $B$ hears $A$'s shout is half-way between the time when $A$ hears his own shout and the time when he hears $B$'s. In this way the correlation is affected (RSDP. 160; see also OKEW. 128).
The same mutatis mutandis is true of light. It should be noted here that Russell is not doubting that time relations hold between A's shouting and B's hearing. What he is doubting is that this time relation is strictly instantaneous. Given this fact the idea of constructing time out of simultaneous biographies has to be modified so as to account for the velocities of sound and light.23

Russell's sound example shows that when two events in two different biographies are so correlated "as to belong to a momentary 'state' of a thing", we cannot regard them as simultaneous and as having the same physical time. Let us suppose that we fix a date in physical time t₁ with A's shout. Due to the velocity of sound it may be heard in one biography at private time t₂ and in another at t₃. It shows that we can have two events simultaneous with a given event, but not with each other. And it only shows which events are simultaneous within the separate private times, but cannot give an all-embracing time. "Thus two correlated appearances [events] in different worlds [biographies] are not necessarily to be regarded as occurring at the same date in physical time, though they will be parts of one momentary state of a thing" (OKEW. 128). This shows that the attempted correlation fails because "simultaneity" relation is transitive. Russell quite realizes these problems, and suggests that they are "dealt with by the theory of relativity,24 and show that it is impossible validly to construct one all-embracing time having any physical significance" (OKEW. 128).

Russell finds that it is not possible to construct an all-embracing time to fix an absolute date. Now since we cannot point to an absolute time over and above events which occur in time, Russell suggests:

There is therefore no reason in experience to suppose that there are times as opposed to events: the events, ordered by the relations of simultaneity and succession, are all that experience provides (OKEW. 122).

In making this suggestion, I believe, Russell was surely influenced and encouraged by the findings of Einstein's theory of relativity. Although
in Britain Einstein's theory was "fully appreciated only after 1919 when a British expedition provided a crucial experimental confirmation that Relativity and not Absolute Space and Time ruled the world",\footnote{25} Russell surely had sufficient understanding of the theory during the period he wrote \textit{OKEW}. We find references to the theory of relativity in almost all his constructionist works around 1914 and 1915 (cf. \textit{OKEW}. [first edition], 89, 104, 242 \textit{OKEW}. second edition, 96, 109, 246]; RSDP. 159; UCM. 135; SMP. 114). Even, as Wiener reports\footnote{26} in 1913 Russell taught Einstein's theory of relativity in connection with the sense-datum theory. It is also interesting to notice that Russell's sound example, which remains unchanged in both editions of \textit{OKEW} and in RSDP, is very much similar to Einstein's light example.\footnote{27} The theory of relativity denies, so does Russell, the existence of an objective (absolute) time. The theory shows that there cannot be first time and then the things (events) to put in it, rather that we always measure temporality of one thing with another, not with time.

Russell rejects the notion of an absolute, all-embracing time not only because we can never observe it, but because, he thinks, the demands of physics and common sense can be met by showing that their objects are temporally related to one another without assuming it. He believes that it is possible to provide the required objectivity of time by fixing dates determined by events and their temporal relations. And this programme, to some extent, conforms to the spirit of the theory of relativity. To carry out this programme, Russell shows that all talk about time can be treated as talk about a certain class of events constituting an \textit{instant}. It is after constructing instant out of experienced events that we can objectively (publicly) fix a date.

\subsection*{6.2.1 Construction of Instant}

Russell's construction of the instant out of events has much in common with his construction of physical objects, space, etc., and it also exemplifies the spirit of constructionism. We usually think of time as consisting of instants; but instants are understood as entities
having no temporal extension. Experience provides us with no such thing as instants or instantaneous events. All that our experience provides us with is a knowledge of events which "do not last merely for a mathematical instant, but always for some finite time, however short" (OKEW. 121). Whereas we have experience of events which have some non-zero duration, we do not have direct experience of timeless instants. Consequently, Russell calls instants "superfluous metaphysical entities" (OKEW. 122). Time, then, as a system of metaphysical instants, seems more problematic than events which we consider as being in time.

So the assumption that there are instants seems incapable of empirical verification. Consequently, instants "must be either inferred [from events] or constructed [out of events]" (OKEW. 121). Russell adopts the second option and tries to show that instants can be constructed out of events which we experience (OKEW. 123-8). In a similar way Whitehead also shows that instants are constructed out of experienced events. Whitehead says:

There is no such thing as nature at an instant posited by sense-awareness. What sense awareness delivers over for knowledge is nature through a period. Accordingly nature at an instant, since it is not itself a natural entity, must be defined in terms of genuine natural entities. Unless we do so, our science, which employs the concept of instantaneous nature, must abandon all claims to be founded upon observation.

Russell stresses the fact that whenever we talk about a particular instant, we identify it with a group of events which occurs (is dated) at that instant. Thus to say that such and such an event occurred, or such and such a thing happened at such and such a time (temporal instant) is to say that the event or thing in question is a member of the set of events or things constituting that instant.

Russell constructs instants out of events by using two methods, viz. the enclosure-series method, and the partial overlapping method. The enclosure-series method is the one which Russell credits to Whitehead. The method, later improved by Whitehead, is called the method of "extensive abstraction". In the present context, I shall give only a
very brief account of the enclosure-series method. Russell defines an enclosure-series of events as one in which one event is temporally enclosed by another when the earlier event is simultaneous with the later, but not before or after. How the enclosure-series defines an instant is shown in the following passage:

In order that the relation of temporal enclosure may lead to instants we require (1) that it should be transitive, i.e. that if one event encloses another, and the other a third, then the first encloses the third; (2) that every event encloses itself, but if one event encloses another different event, then the other does not enclose the one; (3) that given any set of events such that there is at least one event enclosed by all of them, then there is an event enclosing all that they all enclose, and itself enclosed by all of them; (4) that there is at least one event. To ensure infinite divisibility, we require also that every event should enclose events other than itself. Assuming these characteristics, temporal enclosure can be made to give rise to a compact series of instants. We can now form an "enclosure-series" of events, by choosing a group of events such that of any two there is one which encloses the other; this will be a "punctual enclosure-series" if, given any other enclosure-series such that every member of our first series encloses some member of our second, then every member of our second series encloses some member of our first. Then an "instant" is the class of all events which enclose members of a given punctual enclosure-series (OKEW. 127).

Although, in OKEW, Russell adopts the Whiteheadean method, later in A. Matter he finds the method unacceptable on the ground that the enclosure series of events have no minimum or maximum size of events. As he writes:

[A] is a method which aims at starting with the actual constituents of the world it seems to me to have certain defects. Dr Whitehead assumes [so does Russell himself in OKEW] that every event encloses and is enclosed by other events. There is, therefore, for him, no lower limit or minimum, and no upper limit or maximum, to the size of events (A. Matter. 292; cf. also MFD. 108-9).
Russell believes that the partial overlapping method, when properly developed, in the context not only instant but "point-instant" for the space-time, can avoid any assumption of minimum or maximum size to events in constructing instants (cf. A. Matter. 194-302).

As we have already mentioned, events out of which instants are constructed are not strictly instantaneous, rather, however short, they have some duration. The definition of duration is

E (an event) has duration =df. there are some non-overlapping events E₁ and E₂ both of which overlap E.

The relation of overlapping is the most important temporal relation between two events. The definition of overlapping is

E₁ overlaps E₂ =df. E₁ is not wholly before (or after) E₂ and E₂ is not wholly before (or after) E₁. In other words, when neither of them wholly precedes the other.

This relation can be shown in the following figure:

![Diagram of overlapping events]

**Fig. 4**

In Fig. 4, E₁ and E₂ partially overlap each other at 0. The other temporal relations shown in Fig. 4 are (a) E₁ begins before and ends before E₂, and (b) E₂ begins after and ends after E₁. Two events fail to overlap only when one of them wholly precedes the other. This can be
shown in the following figure:

Fig. 5

Fig. 5 indicates the temporal relation from right to left as earlier (before) and from left to right as later (after). So $E_1$ wholly precedes $E_2$, $E_2$ wholly precedes $E_3$ and $E_3$ wholly precedes $E_4$, that is to say no one event overlaps any other.

Russell now shows that an instant can be understood as the class of all the *overlapping events*. Our Fig. 4 shows that $E_1$ and $E_2$ overlap each other since there is some time 0 at which both of them occur. Now if we have a third event $E_3$ which overlaps $E_1$ and $E_2$ at 0, then the parts of $E_1$ and $E_2$ in 0 have duration. This is shown in the following figure:

Fig. 6

In Fig. 6, I represents the area of overlap between $E_1$, $E_2$ and $E_3$. $E_3$ indicates a shorter duration, a more precise portion in time than if we
had only $E_1$ and $E_2$. If we carry on this process of taking more and more events into the set until there remains no event which overlaps all these events, new events become more and more accurately dated (*OKEW*. 123; cf. *HK*. 271). In this way every time we properly add a new event to the set, it will have less and less extended duration and we will be close to what is meant by an "instant".

Let us suppose that in Fig. 6, we have no other event to add. If so, then no event outside the set $(E_1, E_2, E_3)$ overlaps I and as a result the area of overlapping I of $E_1$, $E_2$ and $E_3$ will all be instantaneous. This whole procedure is beautifully explained in the following passage:

Let us take a group of events of which any two overlap, so that there is some time, however short, when they all exist. If there is any other event which is simultaneous with all of these, let us add it to the group; let us go on until we have constructed a group such that no event outside the group is simultaneous with all of them, but all the events inside the group are simultaneous with each other. Let us define this whole group as an instant of time (*OKEW*. 124)

So on the basis of Fig. 6, Russell constructs an instant I as a set of overlapping events as $(E_1, E_2, E_3)$. The constructed instant has the following features:

(a) every member (event) of I must temporally overlap every other member; that is to say, there is some time when all members overlap;

(b) any member which overlaps all the members of the set I, is itself a member of I;

(c) nothing outside I temporally overlaps every member in I.

Russell now proceeds to show that the constructed I has all the properties we expect of instants i.e., (1) they must form a series, (2) every event must be at a certain number of instants and (3) the series of instants ought to be compact.

(1) It can be shown that instants constitute a series. One instant, say $I_1$, is before another instant $I_2$ just in case some members of $I_1$ wholly precede some members of $I_2$. Further, Russell shows that an
instant $I_1$ wholly precedes an instant $I_2$ just when some members of $I_1$ wholly precede some members of $I_2$. Russell claims that the series of instants ordered by the relation \textit{wholly precedes} yields a satisfactory series. He writes:

...we know that of two events which belong to one experience but are not simultaneous, there must be one which wholly precedes the other, and in that case the other cannot also wholly precede the one; we also know that, if one event wholly precedes another, and the other wholly precedes a third, then the first wholly precedes the third. From these facts it is easy to deduce that the instants as we have defined them form a series (\textit{OKEN}, 125).\footnote{32}

(2) Russell also shows that every event is at at least one instant, that is to say, "given any event, there is at least one class, such as we used in defining instants, of which it is a member" (\textit{OKEN}, 125). Thus

an event $E_1$ is at an instant $I$ iff. $E_1$ is a member of the set constituting that instant.

Russell has shown this with the help of his notion of initial contemporaries of a given event. He defines the initial contemporaries of an event $E_1$ as the set of all the events which are simultaneous with $E_1 "and do not begin later, i.e. are not wholly after anything simultaneous with it" (\textit{OKEN}, 125).

(3) Russell finally shows that the series of instants will be \textit{compact}. He says:

... if we assume that there is always some change going on somewhere during the time when any given event persists, the series of instants ought to be \textit{compact}, i.e. given any two instants, there ought to be other instants between them (\textit{OKEN}, 124).

Let us see how the \textit{compactness} of the series of instants works. A series of instants will be considered as \textit{compact} in cases where given two instants $I_1$ and $I_2$, there is always an instant $I_3$ such that $I_1$ is before $I_3$. 
and $I_3$ is before $I_2$. Now compactness comes, in the case of one particular event, in the following way:

(f) If one event wholly precedes another, there is an event wholly after the one and simultaneous with something wholly before the other (OKEW. 126n.).

But this condition fails in the following count. Let us suppose that $E_1$ is the beginning of a total vanishing and $E_2$ is the ending of a total vanishing, then there is no event between $E_1$ and $E_2$. Russell himself realizes that the question as to whether we are justified in assuming (f) is an "empirical question" (which should not be decided by definition) which he finds no reason for thinking to be true.

As we have noticed earlier, the process of fixing a date at a stage is possible where there remain no events which overlap with all the events in our set. This generates a compact series where all events have been taken into the set. The compact overlapping relation is symmetrical and transitive and within the set also reflexive. But the complete application of the method falls short in the following way:

The events which we experience have not only a finite duration, but a duration which cannot sink below a certain minimum; therefore they will only fit into a compact series if we either bring in events wholly outside our experience, or assume that experienced events have parts which we do not experience, or postulate that we can experience an infinite number of events at once (OKEW. 126-7).

Despite this shortcoming, the partial overlapping method shows that ordinary events are dated at various instants and that instants understood as logical constructions make up appropriate series of events which, while explaining "public" time, avoid the assumption that there are "any disputable metaphysical entities" (OKEW. 126). The most remarkable outcome of the method is that all experienced events can be accommodated within a single temporal series. There appears to be no event which cannot be so accommodated. In other words, particular occurrences such as World War I, the birth of Russell, the stages of the growth of civilization, etc. do not require a separate temporal series of their
own. What is more, the series of events can be prolonged so as to include events which have been experienced by any number of generations of observers so long as they have been reliably recorded.

Now, where do physical objects stand in the events sequence? As I have already mentioned, talk of physical objects in time is merely a façon de parler. The sort of objects that are really in time (or occur in time) are events. However, events can be said to occur only where there are objects, just as acts are performed only where there are actors.\(^{35}\) In our everyday discourse, instead of saying that events wholly precede one another or overlap partially, we say that physical objects do this or that before, simultaneously with or after other objects do something else. Given this way of speaking, we can say that physical objects exist or endure in time.
Notes to Chapter Six

1. It is interesting to notice that Russell never changed his view that sense-data are apparently located in private space.

2. See also "On Matter", f. 5.

3. For the discussion of perspectives in relation to physical objects see supra 5.4.

4. Each perspective has also its private time, the time in which my data have temporal relations among themselves (cf. UCM. 134-5).

5. Russell uses the term "compact" for what is nowadays called "dense". However, I shall use Russell's terminology to keep my discussion in line with Russell's.

6. This way of assigning hypothetical appearances is found in Russell's earliest constructionist work. See his "Philosophy of Matter [etc]", f. 2.

7. See also, "Here and There in Sensation", f. 1.

8. Elsewhere Russell calls places "active" and "passive" to signify the "place at which" and the "place from which", without implying any idea of activity at all (cf. AN. 130).


10. Russell, Philosophy. 140; cf. also HK. 229.


12. Russell regretfully asserts "I have not so far found any philosopher who knew what I meant by this statement" (Reply. 705).


15. It is difficult to show the third dimension on a penny. Moreover, Russell himself declares that the success of the constructionist
method is due to the empirical fact that "any other 'thing' than our penny might have been chosen to define the relations of our perspectives in perspective space, and ... experience shows that the same spatial order of perspectives would have resulted" (OKBW. 98; cf. also RSDP. 154).


18. Ibid., p. 310.


21. See also "Here and There in Sensation", f. 2; "On the theory that sense-data are functions of two places", R.A. file # 220.011390 [notes on logic, sense-data, etc.], April 1913.

22. One might wonder (cf. C.M. Turbayne, Constructions Versus Inferences in the Philosophy of Bertrand Russell, Ph.D. thesis, University of Pennsylvania, 1950, p. 92) how immediate experience provides us with temporal relations since, Russell allows immediate experience to provide only "pure sense-data", and no time relations are provided in pure data. However, since, for Russell, sense-data have duration, however short, which he calls the "specious present", this duration (time relation) is directly known. In this case two or more events have to be experienced in the same "specious present". We cannot say of an event E₁ that it is earlier (simultaneous with, or later) than event E₂ unless we experience both events as having been presented to us in the same present.

23. Russell does not specify how this modification is possible. Consequently, he leaves this problem in RSDP with the assertion that "this temporal grouping of the appearances belonging to a given thing at a given moment is in part conventional" (RSDP. 160).


28. See also "On Order in Time", pp. 347-63.


31. This figure is adopted, with minor change, from Bruce Aune, *Metaphysics: The Elements* (Minneapolis, 1985), p. 110.

32. See also "On Order in Time", p. 347.


34. It also shows that in *OKEW* the partial overlapping method cannot avoid any assumption of minimum size of events and as a result this method, in *OKEW*, is no real improvement on Whitehead's method of extensive abstraction.

35. This analogy is due to Bruce Aune, *Metaphysics: The Elements*, p. 115.
CHAPTER SEVEN

EVALUATION OF RUSSELL'S
THEORY OF PERCEPTION

We have now completed our discussion of Russell's theory of perception and the relation of perception to our knowledge of the external world during the period from 1905 to 1919. Our overall aim was to interpret and to clarify the successive developments of Russell's theory of perception and to show that Russell never gave up realism during the stipulated period. On the basis of the previous discussion, it is now possible to make a summary observation and evaluation of Russell's development of the theory of perception. What is the chief outcome of the development? Did Russell succeed in what he was trying to accomplish?

Russell's realism started from mid 1898 when, following Moore, he rebelled against British idealism; and he spent the rest of his philosophical career in modifying it. The initial rebellion was so extreme that it allegedly collapsed into an unchecked absolute realism which allowed Russell not only to admit the reality of spatio-temporal objects, but it also created a host of bizarre entities, viz. unicorns, round squares, etc. which generated a serious problem for Russell. However, it was in 1905, in OD, that Russell began to cut his world of subsistent entities down to size. The "razor" he used was the theory of descriptions which provided him with a logical analysis of denoting phrases (including physical-object expressions) in terms of expressions denoting objects of acquaintance.

I regard the theory of descriptions as an attempt to meet the problems generated by Russell's own version of absolute realism. It

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worked as a recipe for eliminating physical-object expressions and it
gave rise to the PA that "in every proposition that we can apprehend
[understand] ... all the constituents are really entities with which we
have immediate acquaintance" (OD. 56). The entities with which we have
acquaintance include "objects of perception" (particulars) and those of
"a more abstract logical character" (presumably universals). We are not
directly acquainted with spatio-temporal objects and other people. This
was, on the one hand, a decisive departure from the pre-OD absolute
realism that Russell held with Moore, and, on the other hand, it turned
him towards the empiricist tradition of Locke, Berkeley and Hume.

However, it was not until PP that Russell's theory of perception
received its fuller consideration. In PP, Russell started with the
question: "Is there any knowledge in the world which is so certain that
no reasonable man could doubt it?" (PP. 7). From this quest for certain-
ty Russell proceeded, in a conventional way, into the problems of per-
ception. Beginning with various cases of perceptual relativity, Russell
concluded that strictly speaking, our direct perception is restricted to
the sense-data of the appropriate senses. Russell says:

... in the presence of my table I am acquainted with the sense-data that make up the appearance of
my table -- its colour, shape, hardness, smooth-
ness, etc.; all these are things of which I am immediately conscious when I am seeing and touch-
ing my table... [By contrast] [t]here is no state of mind in which we are directly aware of the
table (PP. 46-7).

The reason why I am directly acquainted with sense-data and not with the
table is this: "it is possible, without absurdity, to doubt whether
there is a table at all, whereas it is not possible to doubt the sense-
data" (PP. 47). What Russell is driving at is that when he looks at his
table, he is having a sense-datum as of a table; but it is possible that
there is no table at all -- he may be having an illusory perception.
Consequently in any case of acquaintance there is no room for doubt
(cf. supra, 2.1.6 and 2.1.7).

Russell immediately applied the above perceptual considerations
in rejecting naive realism which holds the view that whatever properties
we discover when looking at the table are, in fact, true properties of the table. The argument on which Russell mainly relied to reject naive realism is known as the argument from illusion and it is supplemented by the argument from science. The argument from illusion is based upon the empirical observation that the table may present different appearances to different observers according as they look at it from different angles, in different conditions of light or under different physical and mental conditions (PP. 8-11). If, for example, the table has all the properties it appears to have, and if we perceive it to be round from one point of view and elliptical from another point of view, then the table must have the properties of being both round and elliptical. But this is logically impossible. As long as the naive realist holds the thesis that the table has all the properties it appears to have, he must be in the awkward position of attributing contradictory properties to the table, since it cannot be both round and not round (elliptical).

Russell is certainly right in showing that the naive realist's position is contradictory. The rejection of naive realism brings Russell into complete agreement with Hume who holds that "the vulgar confound perceptions and objects". His quest for certainty carried Russell to the point at which he ended in the belief that everything except sense-data was unknowable. But a fatal consequence of this, which Russell certainly realized, is that only sceptical solipsism was logically tenable since "we can never prove the existence of things other than ourselves and our experiences" (PP. 22). Since I can know and prove only what I experience, and since I can experience nothing but my own sense-data, I cannot claim knowledge about what I do not perceive. So strict adherence to the empiricist thesis leads inevitably to sceptical solipsism.

This much is one side of the story of Russell's philosophical conviction; the other side is his respect for the common sense scientific belief in the external world and that is what gets him into trouble. Although Russell rejected naive realism, he retained common sense. However he realized that common sense belief is not philosophically well-founded. As a philosopher he was interested in finding the grounds
of our common sense beliefs in order to give those beliefs a solid foundation. At the same time, Russell was also interested and impressed by the scientist's picture of the world. His aim was also to show that the claims of science, especially those of physics, when correctly understood, are justified. Now what physics deals with are atoms, molecules, etc. which, scientists assure us, are the constituents of physical objects. But what perception provides us with are only our own sense-data, not physical objects. These two opposite facts generated a serious problem for Russell. As he later pointed out:

In the *Problems of Philosophy* and in all my previous thinking, I had accepted matter as it appears in physics. But this left an uncomfortable gulf between physics and perception (*MPD* 104).

This gulf bothered him a lot and Russell put all his efforts into bridging this gulf during the subsequent development of his theory of perception.

The gulf also generated a tension in Russell. On the one hand, as a man of common sense and science he wanted to maintain that the physical world of chairs, tables, houses, etc. and the scientific world of atoms and molecules exist independently of our perception and that we can know a lot about these things. On the other hand, as a true disciple of Hume, he had to reduce these worlds to nothing but sense-data with which we are directly acquainted. Sense-data are immediately given in sensations, and we have apparently no right to infer physical objects from them. But, again, because of his attraction to common sense and physics he could not so easily ignore their claims to unobservable things and events.

Russell seems to be trapped in a dilemma. On the one hand, if he does his epistemology from the standpoint of extreme empiricism, he undermines the beliefs of scientific common sense. On the other hand, if he does his epistemology from the standpoint of scientific common sense, then he undermines his empiricist conviction. The first horn of this dilemma is the direct result of his empiricist-foundationalist view of knowledge. The second horn of the dilemma is the result of his bias toward science and common sense. The dilemma represents a direct
conflict between his empiricism and his realism. A consistent empiricism logically leads to scepticism, but realism is the denial of scepticism. Now it appears that these two positions cannot be consistently reconciled without one pulling back from its extreme claim. But whichever way Russell goes he has to pay some price for achieving consistency.

However, it appears that during the PP period Russell did not want to lose ground for either empiricism or realism, rather he wanted to embrace both. Although he honestly admitted that from a purely logical point of view, sceptical solipsism was quite consistent, he found good, if not conclusive, reason for supposing "that there really are objects independent of us, whose action on us causes our sensations" (PP. 23). Again, "it is rational to believe that our sense-data ... are really signs of the existence of something independent of us and our perceptions" (PP. 27). These passages indicate Russell's explicit commitment to two theses viz. the realist one that physical objects exist independently of our perception of them and the representationalist one that physical objects are causes of our sense-data. However, Russell's empiricist conviction forced him to admit that he could not prove that physical objects exist independently of perception, or, for that matter, that the external world exists independently of perception.3

To some extent, Russell accepted the sceptic's charge that unless a proof were forthcoming, exactly what we know about the external world would remain an open question. However, although he could not prove that there is an external world independent of perception, the supposition that there is such a world accords with both common sense and science. Considering his belief in both common sense and science, it was natural for Russell to step aside from scepticism and to accept the plausible alternative in the causal theory of perception. The assumption that sense-data have physical objects underlying them provides the simplest explanation of sense-data. Russell based his defence for inferred physical objects on the simplicity hypothesis (supplemented by instinctive belief) that the existence of physical objects independent of perception simplifies and systematize our account of empirical knowledge.

Given that there are physical objects, what is their nature and
how do we come to know them? As to the first question Russell's reply was that of an agnostic; we can not know anything about the intrinsic nature of physical objects. However, Russell's position was not like that of Kant, rather he thought that it was quite reasonable to infer that they are spatio-temporally ordered in a way that corresponds to the ordering of sense-data. So although we could not know anything about the intrinsic nature of physical objects we were capable of knowing the spatial and temporal relations which co-ordinate them with the sense-data they cause. As to the second question Russell's reply was that we know the physical object, say a table, by description. Although Russell was impressed and to some extent convinced by, what he took to be, the findings of modern physics that sense-data themselves do not form part of the table, he believed that they were an indispensable factor in our knowledge of the table. The table is the physical object which causes such and such sense-data and the sense-data represent the table.

The notion of physical objects as developed in PP is largely determined by Russell's theory of descriptions. In the theory of perception the theory of descriptions is effectively projected as an epistemological device to facilitate the grounding of knowledge of physical objects in direct experience. This is certainly an advance upon his empiricist predecessors. The theory of descriptions shows that direct experience or acquaintance is not a pre-requisite for making a knowledge claim about physical objects. As a result, the problem of compromising between empiricism and realism is, to some extent, resolved. Although knowledge begins with empiricism, it does not necessarily end with scepticism.

Knowledge by description is certainly an impressive way of avoiding the sceptical conclusion. But, again, such an escape is admittedly practical, not logical, for it involves an acceptance of induction and causality which are still subject to the doubts raised by Hume. The main fault of knowledge by description is that it rests on assumptions and inferences which might conceivably be false. This possibility makes the inference to physical objects, what Hume calls the "philosophical system", not much better than the vulgar's belief in the existence of
physical objects. "[I]t contains all the difficulties of the vulgar system, with some others, that are peculiar to itself". Realizing that our perceptions are "interrupted and perishing", the philosophers assume a "double existence of perceptions and objects" and attribute continued and distinct existence only to the objects.

The causal theory of perception enjoys the support of science, but it has its own defects. A classical complaint against inferring physical objects is that it immediately runs into the very general scepticism (which it aims to refute) about the possibility of knowledge of the external world. Russell's commitment to the causal theory of perception in PP made his position self-refuting since it accepted that the facts on which it is based are strictly speaking unknowable. What forced him to this situation was his empiricist-foundationalist position. As he later confessed, the "empiricists (including, at times, my former self) allow a great many shaky inferences, ... in order to reconcile their faith in empiricism with every-day beliefs which they are not prepared to abandon" (Reply. 707). The fatal consequence of the position was that since all our direct perception is concerned with the alleged effects or sense-data, we can never find out whether physical objects exist or what characteristics they have. This view makes physical objects unobservable, and indeed unintelligible, causes of perception.

Having accepted the causal theory of perception in PP Russell might have thought that, to some extent, he had bridged the gulf between perception and physical objects and had somehow given an answer to the sceptic. But it was not long before he came to realize the vulnerability of his PP position to sceptical attack. Once we admit that it is sense-data only that are directly perceptible, any attempt to pass from sense-data to physical objects becomes vulnerable to sceptical attack. How can sense-experience give us knowledge of what, ex hypothesi, is not perceptible? As we have seen (cf. supra, 4.4), this realization occurred in "On Matter". "On Matter" leaves one little scope to criticize Russell's PP position, since Russell himself has done the job there; this justifies Allan Wood's general comment on Russell's critics:
Napoleon told the inn-keeper, in Bernard Shaw's play, that 'you will never be hanged. There is no satisfaction in hanging a man who does not object to it.' Something of the same difficulty faces the would-be critic of Russell. There are few faults and weak points in his work which he has not pointed out with the utmost candour himself; each advance he made constituted a criticism of his previous position.  

I completely agree with Wood's comment that Russell himself is his best critic. However, I would like to add one extra point here: when Russell criticizes his previous position, he criticizes it with the utmost intensity. Take "On Matter" for example. In "On Matter" Russell criticized his PP position more than was really necessary. There he criticized, among others, the principle of continuity as offering a continuous real cat over and above its various cat sense-data. As a matter of fact, Russell did not use the principle of continuity in PP. He rather appealed, vaguely, to the "principle of simplicity". What he wanted to be understood was that it is simpler to believe in a continuous cat than in an intermittent cat. However, later in the actual procedure of logical construction, we find that, Russell appealed to continuity (and also probably even to induction in the form of laws of physics). Why then did he attack the principle of continuity in "On Matter"? I think it shows the intensity of Russell's distrust of his previous position. We see the same kind of attitude in his initial rebellion against his idealist position.

As I have already suggested in chapter four, "On Matter" is of great importance in tracing the development of Russell's theory of perception. It acts as a missing link between his pre-constructionist and his constructionist theories of perception. In "On Matter" Russell came to realize, perhaps due to Wittgenstein's criticisms (cf. supra, 4.4), that the way he tried to bridge the gulf between perception and physical objects was doomed to defeat by the sceptic's argument. So he had two options: either to accept scepticism or to try to avoid the sceptical outcome of his empiricism. Although initially he intended to end up with scepticism, he eventually accepted the second option. This shows that although Russell is called a passionate sceptic, he is also a passionate
believer. The PP attempt failed, so an alternative attempt had to be made. This alternative attempt was the emergence of logical constructions according to which physical objects are constructed, rather than inferred, from sense-data. However, in the course of development, the materials out of which Russell constructed physical objects were not limited to actual sense-data with which a single person was acquainted. They also included sense-data of other people and unsensed sensibilia both of which were inferred entities. Russell was, in fact, forced to allow these two elements into construction, on the one hand, to escape sceptical solipsism and, on the other hand, to make the constructionism consistent with his realism.

Sceptical doubts about the PP position had an enormous effect and had been a major impetus towards Russell's constructionist theory of perception. The constructionist theory was designed to provide an explanation of the objects of physics and common sense without at the same time becoming committed to the causal theory of perception which is an easy target for the sceptic. However, Russell's overall concern was epistemological, to explain how physics and common sense are knowable. The spirit was both realistic and empirical, it was to show that our knowledge of physical objects beyond immediate perception is not only legitimate, but also consistent with empiricism. The obvious epistemological gain was to assume no entities which could not be brought back to the perceptual foundation.

During the constructionist period Russell approached the problem of our knowledge of the external world as a question of the verification of physics. The gulf between physics and perception which Russell detected in PP generated some serious theoretical difficulties for physics. Physics, being an empirical science, is committed, logically, to depend for its verification on observation and experiment. But Russell found that observation and experiment only acquaint us with sense-data: "certain patches of colour, sounds, tastes, smells, etc., with certain spatio-temporal relations" (RSDF. 139). But, in fact, physics shows that its object (matter) is composed of entities (atoms, molecules, etc.) having none of these perceptual properties we find in it. Then how can
we verify physical objects on the basis of sense-data? This difficulty makes it impossible for physics to justify its truth claim that it is "based upon observation and experiment" (RSDP. 139). To justify the truth claims of physics we must "find some way of bridging the gulf between the world of physics and the world of sense" (OKIB. 106). The PP attempt did not work. The problem for Russell was to show how to accommodate an acceptance of a world-view containing "things" not composed of sense-data which would fit his empiricist epistemological view that we are only certain about our own sense-data. This was an unattainable aim for Russell, given that "what we directly experience cannot be the external object with which physics deals, and yet it is only what we directly experience that gives us reason to believe in the world of physics" (MPD. 104). The enterprise is to make physics possible upon empirical grounds while minimizing the amount of inference to non-empirical entities.

In evaluating the construction of physical objects, it is important to examine the extent to which it carries out the responsibilities that it hopes to fulfil. They include:

(a) to verify the claims of physics and common sense;
(b) to enable us to avoid inference to unjustifiable entities;
(c) to ground all knowledge in some empirical basis, so that none is without justification;
(d) to combat scepticism.

In fact, (a) is the crucial one because from (b) to (d) all somehow depend on the success of (a); and if (a) is secured, so are the rest. Now the question is: (α) does Russell achieve these results by constructing physical objects out of sensibilia? However, the answer to this question largely depends upon the answer to the question: (β) is the construction an adequate one? So let us deal with the second question first. To deal with (β) let us first enumerate the objections one might raise against the logical construction and also consider possible replies on behalf of Russell.

(1) Russell puts the problem of our knowledge of the external world as a question about the verification of physics and common sense.
Strictly speaking, verification consists always in the occurrence of sense-data. Now since sense-data are, by definition, related to appropriately functioning sense-organs, this tends to suggest that empirical verification includes the possibility of actual perception. Now the question is: how far does the construction of physical objects from sensibilia satisfy this condition of verification? So far as the object is constructed in terms of sensed sensibilia, it does so fully. But in the actual construction, since Russell has included unsensed sensibilia, the constructed object is bound to remain unverifiable.6

(2) One can also criticize the constructionist theory by attacking the status of sensibilia. It might be objected that unless Russell has empirical evidence that there are sensibilia which are exactly like data of sense, except that they are not data, he has no right to assert that "[w]hat the mind adds to sensibilia, in fact, is merely awareness" (RSDP. 143). Now since sense-data are all that we are directly acquainted with in any perceptual experience, to assert the existence of sensibilia Russell has to make a speculative leap.7 One might even press the objection a little further that Russell could no more assert the existence of sensibilia than Kant could assume the existence of Ding an sich.

(3) The hypothesis of unsensed sensibilia and the additional concession to the inferred sense-data of other people, bring further weaknesses to the overall aim of construction. The aim was to construct physical objects from wholly empirical entities, entities which are known with certainty; only sense-data could serve this purpose. Now since unsensed sensibilia and other people's sense-data are both inferred entities, they cannot be known with certainty. So if Russell wants to stick with them, it is only at the cost of abandoning his certainty claims in the pursuit of empirical knowledge.

As a matter of fact, inference to other people's sense-data loses certainty on two counts. Inferring other people's sense-data implicitly assumes that there are other people's minds and that there are other people's bodies which are like physical objects (since our only evidence of other minds come from other people's bodies). But from
the strict logical and epistemological point of view, Russell is no more justified in inferring other people's sense-data than in inferring other people's bodies (physical objects). However, Russell might neutralize part of this objection by maintaining that he can construct other people's bodies as he constructs physical objects. But still he has to infer other people's minds. The critic might press that if other people's minds (and their sense-data) have to be inferred then why worry about having to infer physical objects? Given that both are inferred entities, he has no right to discriminate between inference to other people's minds and to physical objects. They have the same logical and epistemological status. The physical object is not empirically verifiable, so neither is another mind. Therefore, he has no more right logically to infer other minds than he has to infer physical objects.

(4) One of the widely held criticisms of Russell's theory of logical construction is that it seems prima facie unlikely that it can escape the charge of circularity. 8 Let us recall that in one of his definitions Russell identifies a "thing" with "the whole class of its appearances" (RSDP. 147; emphasis added), thus making explicit reference to the inferred entity he is trying to dispense with. The "its" in the definition makes it clear that it is circular. Now if the circularity is avoided simply by removing "its" from the definition, the result becomes too vague. It appears that Russell faces a serious paradox. If the common sense "thing" is defined as the whole class of its appearances, then the "its" produces circularity, by defining a "thing" in terms of itself; and again if "its" is omitted from the definition, it becomes vague as to which class is meant here. All brown, round appearances may be regarded as a single class, but they certainly do not construct a thing. 9

Russell certainly realized that if he could not remove the circularity from the construction of the common sense "thing", his whole project of substituting inferred entities by logical constructions became futile. But how could he get rid of circularity? He could only do this if he could specify, without mentioning the physical object, the class of appearances which would be called the appearances of the thing.
But this seemed to be an almost impossible task. We have seen that Russell initially employed two principles, *viz.*, similarity and continuity among the members of a class of sensibilia, to do this job. They were supposed to provide him with sufficient means of removing circularity by not mentioning the thing in question. They were to decide which of the data in all the perspectives were to be taken into a class so as to construct the thing. Russell later found that they were neither necessary nor sufficient to do the job they had been assigned (cf. *supra*, 5.4).

However, apart from failing to remove circularity the principle of qualitative similarity poses an additional serious difficulty for construction. Russell's aim is to construct the physical object out of similar sense-data in different perspectives. As he says, "[b]y the similarity of neighbouring perspectives, many objects in the one can be correlated with objects in the other, namely with the similar objects" (*OKW*, 96). But the problem is with how "similarity" is to be used? It seems that the procedure, which Russell himself suggested, will have at least all the difficulties of abstraction. After all, sense-data belonging to one object may be more similar from one perspective than sense-data belonging to the object in a different perspective. Let us consider the following case: I can see my car and an accurate model of my car simultaneously -- both parked side by side. Now two sets of sense-data are obtained; C, sense-data belonging to the car and M sense-data belonging to the model. Consider now the set $C_1$ derived from the car from a radically different perspective -- from underneath or from on top or at $90^\circ$ to the first perspective. In this situation members of M will be more similar to C than members of $C_1$ will be.

Moreover, members of one set of sense-data in one perspective and those in another will not be exactly similar. So "similarity" must be taken loosely. Russell did not realize this until 1927 in *A. Matter*, where he relaxed the use of "similarity" and used it in an extended sense to cover what he calls "partial similarity" (*A. Matter*, 282). However, although in the constructionist period Russell did not realize that similarity has to be used loosely (as it must), without this modi-
fication of similarity construction cannot proceed. But modification of similarity must have an important consequence for the construction of the physical object. If similarity is taken loosely, then the transitivity of the relation must fail and in that case he cannot use similarity as an equivalence relation.

Coming back to the circularity issue, Russell certainly tried to give an answer to the question as to how to collect sense-data into an appropriate class without mentioning the object of which it is a class. Similarity and continuity are not sufficient. However, his final position is not that similarity and continuity have to be rejected, but that they have to be supplemented by conformity to the laws of physics. Accordingly, his final definition of the physical object is that it is "a certain series of appearances, connected with each other by continuity and by certain causal laws [laws of physics]" (OREW. 111; cf. also 115-6; RSDP. 164).

Now the question is: does Russell's final definition provide us with sufficient conditions for constructing a particular object out of a certain class of sensibilia? I think it does not. For various reasons the final definition falls short. First, the notion of causal laws (laws of physics) seems to presuppose the notion of being a physical object in the very sense to be analyzed. In the absence of physical objects how do we know what the laws of physics are? Secondly, still it remains vague and imprecise as to how to distinguish one kind of object from another. The definition does not show, for example, what the differences are between constructing a table and constructing a penny. Lastly, it does not solve the problem of how to collect sensibilia. Two distinct things, say two pennies, \( P_1 \) and \( P_2 \), may be associated with similar sensibilia, that is to say, the sensibilia of \( P_1 \) and \( P_2 \) may be similar. It is not enough to define them in terms of logical constructions from their sensibilia. What is also required is an explanation of how the sensibilia will be chosen to construct a particular penny, \( P_1 \). Here I think the theory completely breaks down, since there is no way of avoiding mixing up sensibilia which belong to \( P_1 \) with sensibilia which belong to \( P_2 \) (or the sensibilia of my car and those of an exact model of
my car). It appears that in Russell's account, all the sensibilia associated with $P_1$ and $P_2$ must be collected into the set constituting $P_1$ or $P_2$. Not only this, Russell also has not made it clear what all physical pennies have in common.

(5) The construction of physical objects largely depends upon the sense-datum theory. In recent years sense-datum theory has mostly been rejected. Now one might claim that as soon as the sense-datum theory is rejected, the whole enterprise of constructing physical objects becomes ill-founded and, to some extent, unnecessary. However, I think that this conclusion would be too rash. There are different versions of sense-datum theory, and rejection of one does not mean rejection of all. In fact, most rejections of sense-data are based on the view that they are disputable mental entities, they have no independent existence outside the mind. Such criticism obviously fails to touch Russell, since he persistently claimed that they are not mental entities (cf. supra, 3.2.3 & 3.2.4). As I have suggested elsewhere (see supra, 3.2), Russell and other sense-datum philosophers have made a strong case for sense-datum theory. Now since Russell's theory of sense-datum shares certain features of the general nature of sense-data he must be ready to share certain general criticisms of his theory as well. In the present context, I would like to pass by the general features of sense-datum theory and deal only with the specific characteristics of Russell's theory.

The characteristic of sense-data which are most important for Russell's construction of physical objects are the status of sense-data in regard to mental and physical. We have seen in chapter three that Russell considered sense-data to have physical status. It is true that the physical nature of sense-data has strongly affected the logical construction, but it seems to give rise to some difficulties. In order to give them a physical nature, Russell seems to have made sense-data less than data. That is to say, in making "sense-data as part of the actual substance of the physical world" (RSDP. 170; cf. UCM. 123) Russell seems to undermine the concept of sense-data defined as "the things that are known in sensation" (PP. 12). He seems to give the impression that since sense-data are purely physical, they can exist as
public objects. If so, one might wonder, how are they to be distinguished from the physical objects they are supposed to construct? One might even claim that they are to be regarded as parts of physical objects\textsuperscript{12} and that they must be indistinguishable from the objects they construct.

(6) Again, the physical character of sense-data makes the sensibilia theory possible and thereby secures Russell's realism from the charge of phenomenalism; but it, at the same time, invites some further difficulties for Russell. It seems that the physical character of sense-data makes the constructed physical objects less certain than it was intended to. Let us recall that one of the main features of sense-data, which most sense-datum theorists, including Russell, readily admit, is that they are immediately and directly given to the senses. The notion of "directly given" is tied up with the notion of indubitability. That is to say, what is given must be limited to what we are absolutely certain about. The "given" character, which makes visual sense-data certain, is limited to the way they look. In this sense, as Russell maintains, there is no intrinsic difference between veridical and non-veridical (illusory or hallucinatory) perception. Considered in themselves, all immediate data have the same status. "Dreams, hallucinations, images, etc. [are] all real... 'Illusory' is merely what gives rise to false inference".\textsuperscript{13} Again, "what is illusory is only the inferences to which they give rise; in themselves, they are every bit as real as the objects of waking life" (\textit{OKBM}. 93; see also \textit{RSDP}. 169, 170; \textit{PP}. 110). In the case of dreams or hallucinations to say that $x$ is a sense-datum is not to imply an object of which $x$ is a sense-datum. Rather, it is simply the way the dream or hallucinatory object looks.\textsuperscript{14}

It appears then, that when Russell claims to exclude any possibility of error from all cases of perception he must use the perceptual verbs (i.e., see, look, appear, etc.) in what Jackson calls the "phenomenal" sense without making any inference. As Jackson remarks, the principle that when something looks $F$ to me, I must see something $F$, is intended to cover only certain instantiations which he calls the phenomenal uses of "looks" $F$.\textsuperscript{15} The phenomenal use of perceptual verbs is distinguished from epistemic and comparative uses of them.\textsuperscript{16} In the
epistemic use, to say "x looks F to me" suggests that what I can see supports the proposition that "x is really F". In the comparative use, to say "x looks F to me" suggests that x looks the way something that is F normally looks. By contrast, according to the phenomenal use, to say "x looks F to me" only suggests that a visual sense-datum x is F. Unlike both the epistemic and comparative senses, in the phenomenal sense I can know (à la Russell) that x looks F to me without knowing that it is F or how x normally looks.

Now although Russell must use the phenomenal sense of perceptual verbs in characterizing the general nature of sense-data as objects of acquaintance, in the construction he cannot use the perceptual verbs in the same way. The reason is that he has to sort out sense-data depending on whether they give rise to illusory inferences (to use "inference" in a weaker sense) or not. In the construction, he would certainly like to use sense-data as given in veridical perceptions (what he calls "ordinary sense-data", PIA. 274), and it is only when he considers sense-data in veridical perceptions that he can compare the sense-data belonging to a thing from different perspectives. Now while using a particular sense-datum in a group he has to give at least a reflective look to decide whether it gives rise to false inference, that is to say, he has to decide whether the given sense-datum is illusory or hallucinatory. But the problem is that if he does this he can no longer use perceptual verbs in the phenomenal sense. So he has to use them either in the epistemic or in the comparative sense.

It appears that the argument from illusion must force Russell to avoid using the perceptual verbs in the epistemic sense. Immediately appearing to oneself to have a certain property does not entail exemplifying that property; nor does it entail that the object actually has it. So Russell must use perceptual verbs in the comparative sense (and it will certainly help him to compare a certain datum in different perspectives). But here comes the weak point. First, he must, to some extent, abandon the absolute certainty of sense-data. It is the "givenness" of sense-data that makes sense-data certain but as soon as givenness is replaced by the reflection of comparative use, the
certainty is bound to diminish. As Chisholm says, the claim of the comparative use of "look" or "appear" cannot be indubitable, "directly evident", since "the justification for what we say about the way of appearing will depend in part upon the justification for what we say about the physical thing; and what we say about the physical thing will not be directly evident [indubitable]". The reason is that a person can be mistaken as to how something normally appears. And secondly, it is possible to run an argument from illusion against the sense-datum theory itself. For from the mere fact that one is acquainted with a physical sense-datum F it does not follow that something having F appeared. However, in losing the certainty of sense-data, Russell's construction of physical objects must suffer loss of certainty in two different stages. One using the physical nature of sense-data and the other is using the sense-data of other people and unsensed sensibilities.

None of the above objections can be conclusively answered. Objection (1) is certainly right. It cannot be conclusively refuted. The inclusion of unsensed sensibilities weakened the construction of physical objects considerably since they lack the verifiability which the theory was initially committed to provide. The theory was committed to the view that unless physical objects are shown to be functions of sense-data, physics has no ground for its claim to be an empirical undertaking, and that only those parts of it which are about sense-data can be said to be verifiable. As Russell says, "it may be laid down quite generally that, in so far as physics or common sense is verifiable, it must be capable of interpretation in terms of actual sense-data alone" (OKB. 88-9). If this is what constitutes verifiability, then it is certainly true that unsensed sensibilities cannot fulfil this requirement. As a result, Russell cannot be said to be successful in constructing the objects of physics and common sense out of verifiabilities only.

However, although Russell originally wished to give an account of physical objects in terms of actual sense-data alone, he soon realized that it was "an impossible programme" (MPD. 105). So he was forced to include unsensed sensibilities in the construction; otherwise it would have been impossible for him to get out of sceptical solipsism, a posi-
tion which he also wanted to refute. Without this extension, any claim to know beyond the sense-data of the present moment would be unjustifiable. The critic might argue that the construction ought to end in solipsism. If it is to be avoided, it can only be at the expense of refusing to carry its own principle to its logical conclusion. This is true, but the criticism is beside the point. Russell did not want to carry the construction to its logical conclusion because he realized that he had to let in unobserved things and events; only unsensed sensibilia could handle this situation.

As soon as Russell realized that he could not do without unsensed sensibilia, he revised the requirement of verifiability: "[v]erification consists always in the occurrence of expected sense-data [unsensed sensibilia]" (OKEW. 89). Now whether one should call unsensed sensibilia "verifiable" is a matter which largely depends upon how we should define "verifiable". But Russell finds it more reasonable to regard them as verifiable and this allows for degrees of verifiability and therefore degrees of certainty in respect of our belief about the external world. So accepting "verifiable" in a modified sense, his theory of construction may be said to fulfil the purpose of constructing physical objects out of verifiably.

Objection (2) is also partially right. From a strictly epistemological point of view Russell has no right to say that what the mind adds to sensibilia is simply awareness. But it is not difficult to see why Russell made this claim. Since the physical and metaphysical status of both sensed sensibilia and unsensed sensibilia are alike, their ontological status is not changed; and this makes unsensed sensibilia real elements. As I have discussed in greater detail (cf. supra, 3.3 and 5.3), the physical nature of sense-data makes them intrinsically objective and their relations to the perceiving mind becomes merely accidental. So they existed before they became data to a subject and continue to exist, when they cease to be data, as unsensed sensibilia. As Russell says, "a quality becomes a sense-datum by being given in sense, just as a woman becomes a wife by being given in marriage".20 Here Russell compares the relation between a sense-datum and a sensibile
with that between a wife and a woman. Just as a woman becomes a wife by entering into the relation of marriage, the sensibile becomes a sense-datum by entering into the relation of acquaintance. The woman certainly existed before she becomes the wife of a man and will certainly continue to exist if her marriage is dissolved. Similarly, the quality certainly existed prior to its being a datum and will continue to exist when it is not data to any body. Russell's "photographic plate" example produces the same result (cf. MPD. 106).

Russell must admit that since unsensed sensibilia are, by definition, not available to the senses, they are not actually experienced. So they do not have the same epistemological status as sense-data; they are not as certain as sense-data. But I think that Russell is right in denying that they are metaphysical postulations in any sense such as Kant's "Ding an sich, [which is] something wholly remote from the data" (RSDP. 150). Since they cannot be available to the senses when they are not data, they are not strictly speaking verified as sensed sensibilia. The inferences to unsensed sensibilia and to physical objects are not on the same level. While physical objects are by nature unobservable, unsensed sensibilia just happen to pass unobserved. As I have already suggested (cf. supra, 5.3) inferences to unsensed sensibilia are horizontal inferences since unsensed sensibilia are the same sort of entities as those from which we infer them (sense-data). By contrast, the inference to physical objects is a vertical inference which consists in inferring a different sort of entity than those from which we start. From the epistemological point of view, entities arrived at by horizontal inference are not as certain as sense-data, true, but they are more certain and more secure than entities arrived at by vertical inference.

Russell certainly realized that inference to unsensed sensibilia undermined, to a certain degree, logical constructions. He even expressed some optimism about the possibility of eventually eliminating them. But he found no way of avoiding them and little hope of eliminating them. There was no way of avoiding unsensed sensibilia, since they played a major role in the construction of physical objects. The inference to sensibilia, although Russell always kept "sensibilia" in quotes
and italics, embarrassed him deeply. Without unsensed sensibilia the verification of physics (which consists in the enumeration of the laws of physics), would not be possible. Only after admitting them would it be possible to hypothesize as to

(a) how things would appear to a spectator in a place where, as it happens, there is no spectator; (β) how things would appear at times when, in fact, they are not appearing to anyone; (γ) things which never appear at all (OKEW. 116).

One possible way by which Russell could retain unsensed sensibilia, without inferring them, was to construct them out of sense-data. In OKEW Russell, in fact, provides a hint that unsensed sensibilia or what he there calls "ideal appearances" or "ideal elements", could be considered "logical functions" or "logical constructions" of actual sense-data (OKEW. 116-7). But Russell hardly provides any space to discuss how they could be constructed. However, in A. Matter (pp. 210-13), Russell gives an account of how to construct unsensed sensibilia: when we know the nature of a number of actual appearances of an object we can calculate (construct) the character of its ideal appearances. Suppose a gun is fired, and its sound is heard by a series of observers located at increasingly greater distances from the gun. If we know the actual sounds of the gun fire then the ideal one can be calculated with the help of causal laws (laws of physics). So we can fill in the gaps between the various observers with certain ideal sounds of the gun fire.

However, if uncertainty and unverifiability are what make inferred unsensed sensibilia unwanted, then I think that the above construction does not produce the result Russell sought in OKEW. Such a construction cannot be free from uncertainty and unverifiability given that the construction largely depends upon causal laws which cannot be known with certainty. They cannot be justified by present experience. I do not think that one could ever construct unsensed sensibilia without using some general principle, which again would fall short of proof. Not only this, even if Russell could construct unsensed sensibilia, still he would have to depend upon the sense-data of other people which are inferred entities.
I believe that when Russell came to write RSDP, on New Year's day of 1914, he certainly realized that strict adherence to construction, out of sense-data only, would never work, and that he had better use unsensed sensibilia as entities of horizontal inference. This is why, I believe, he kept the option open that if it were not possible to replace inferred entities by constructions, then we be allowed to use them as inferred entities. I think that this fact was evident in Russell's mind when he prefixed the phrase "wherever possible" to the maxim of philosophizing: "Wherever possible, logical constructions are to be substituted for inferred entities" (RSDP. 148, emphasis Russell's; see also IA. 326). That is to say, he was ready to admit a certain amount of uncertainty by keeping the "wherever possible" option open.

Objection (3) falls into the same category as objections (1) and (2) and Russell's reply to it would be in line with his reply to (1) and (2). Both unsensed sensibilia and other people's sense-data are inferred entities; both lose a certain amount of verifiability and certainty. The only difference is that whereas Russell's defence of unsensed sensibilia depends upon the principle of continuity, the defence of other people's sense-data depends on other people's minds; and his defence of other people's minds is based on the argument from analogy. "Other people's bodies behave as ours do when we have certain thoughts and feelings; hence, by analogy, it is natural to suppose that such behaviour is connected with thoughts and feelings like our own" (OKEW. 102).

The reality of the constructed world brings us back to the question of testimony and the evidence from the existence of other minds. However, Russell conceded that "the argument [from analogy] in favour of the existence of other people's minds cannot be conclusive" (OKEW. 101). As a result one might well cast some doubt on the argument. Russell tried to make the argument cogent by maintaining that

[t]he hypothesis that other people have minds must, I think, be allowed to be not susceptible of any very strong support from the analogical argument. At the same time, it is a hypothesis which systematizes a vast body of facts and never leads to any consequences which there is reason to think false. There is therefore nothing to be said
against its truth, and good reason to use it as a working hypothesis (OKew. 103).

So the assumption that there are other minds may be used as a hypothesis which fits the facts. He cannot do without the inclusion of other people's sense-data, although it weakens considerably the certainty claim of constructions, as does the inclusion of unsensed sensibilia. He says:

In actual fact, whatever we may try to think as philosophers, we cannot help believing in the minds of other people, so that the question whether our belief is justified has a merely speculative interest (OKew. 104).

Here the end justifies the means. Given that there are other minds and that their sense-data are similar to our own and that we can rely on testimony, Russell can secure his realist position in extending knowledge "beyond our private data, which we find in science and common sense" (OKew. 104).

Russell neither has a complete defence of, nor can he ensure absolute certainty for, the inference to other people's minds. Again I think that Russell is basically right in denying that the epistemological status of other minds and that of inferred physical objects are similar. They have similar status in respect of the fact that both are inferred and neither is strictly verifiable. Whereas inference to physical objects (as vertical inference) is never verifiable even in the extended sense, other people's minds and their sense-data are verifiable in the extended sense. We have no access to other minds, true, but we can frame the idea of other minds given that we have direct access to our own minds. By contrast, not only are physical objects not capable of being inferred from sense-data, but also we cannot form any idea of what a physical object is like or what qualities it has.21

I think that objection (4) is the strongest one against the construction of physical objects and it cannot be refuted. How to collect a certain sensible into an appropriate class of sensibilia without presupposing the object of which it is a member? Russell certainly tried his best to avoid circularity by adding enough details to the initial
definition of the physical object as "the whole class of its appearances". As we have seen even adding more details did not help very much in providing sufficient conditions for collecting a certain class of sensibilia to constitute an object. The final definition that, a class of appearances to be defined as a "thing" should, besides being similar and continuous, conform to the laws of physics, did not provide any criterion to distinguish one kind of object from another. To some extent, Russell neutralized this objection by admitting that he was unable to provide a detailed account of logical construction (cf. *OKEN*, 106, 128; RSDP, 170). But he also mentioned that the account he had given was sufficient to produce a very general outline of how the construction should proceed. There is no account, and I do not know how one could be given, of how we should isolate and then group together sense-data which relate to the object, for example, how we should distinguish the sense-data which belong to the table from those which belong to the paper on the table, without presupposing the existence of the table.

There is no account of how to collect the sensibilia to constitute a table without presupposing it. A possible clue is offered in *AV* where Russell states:

... even if we assume a "real" table, the particulars which are its aspects have to be collected together by their relations to each other, not to it, since it is merely inferred from them. We have only, therefore, to notice how they are collected together, and we can then keep the collection without assuming any "real" table as distinct from the collection (*AV*. 98-9).

This passage gives a surface reply that we need not bring the table itself to collect its sensibilia into a group by suggesting that they are collected together by their relation to each other. It implies, as Sainsbury mentions, that "there must be some principle, grounded in the aspects [sensibilia] themselves, which thus collects them together".22 But this is exactly the principle which is missing from the construction. It is not even clear why we should assume a real table. It seems that Russell has no way out from a certain amount of circularity. He
faces a problem of circularity similar to that which Plato's Meno makes Socrates face in the Meno:

...how will you look for something when you don't in the least know what it is? How on earth are you going to set up something you don't know as the object of your search? To put in another way, even if you come right up against it, how will you know that what you have found is the thing you didn't know?23

Objection (5) involves a misconception about the physical nature of sense-data. Let us recall that Russell uses "physical" in quite an unusual way which distinguishes him from that of most of the sense-datum philosophers. He uses it in two different senses. First, "physical" means that which is dealt with by physics: "[p]hysics exhibits sense-data as functions of physical objects" (RSDP. 140). Secondly, he uses "physical" in the sense that sense-data are not logically dependent upon the percipient. But this physical nature of sense-data does not make them parts of physical objects (as the direct realist might suggest) and thereby does not amount to saying that to perceive "physical" sense-data is to perceive physical objects. The sense-data, although they are physical, do not form part of physical objects (here Russell completely agrees with the findings of modern physics) but are all somehow produced by physical objects. So even physical sense-data are distinct from physical objects.

The two senses of "physical" provide Russell with sufficient reason to assert that "the actual data in sensation, the immediate objects of sight or touch or hearing, are extra-mental, purely physical, and among the ultimate constituents of matter" (UCM. 123). If this is taken as the general nature of sense-data then Russell faces some difficulty in making it consistent with the following two types of sense-data:

First, there are the sense-data which refer to perceptual experience in which there is no physical object; they simply result from physical phenomena, like the dispersion of light through the moisture in the atmosphere, etc. In such cases we have rainbows, mirages, the sky, etc. None of these cases involves any object which is accessible to more
than sight; so they are just phenomenal "looks" without being the looks of anything.

Secondly, there are sense-data which refer to perceptual experiences in which there are neither physical objects nor physical phenomena which can be said to have them. In such cases there is nothing at all which is external to the observer and public to different observers. They are such things as after-images, dreams, hallucinations and the like. Unlike the first instance, they do not have any location in physical space nor do they conform to any laws of physics.

How can Russell make these two kinds of sense-data conform to the character of "extra-mental, purely physical, and among the ultimate constituents of matter"? The first kind of sense-data may be fitted with extra-mental and physical characters in some sense, but they cannot be regarded as ultimate constituents of matter, since it is matter which is precisely missing here. The second kind of sense-data, with the possible exception of dream-data (cf. RSDP, 169), must lose all the characteristics, although Russell might consider them as ultimate constituents of the world (PLA, 274).

The present difficulty gets us to objection (6). It appears that Russell cannot apply the "extra-mental, purely physical, and among the ultimate constituents of matter" nature wholesale. He can use it only for "ordinary sense-data" which he uses for the construction of physical objects. But how are we to decide whether or not some sense-data have this nature without getting out of the data and checking them, which would be to lose the certainty claim for sense-data? One possible way Russell could avoid this situation would be to introduce sense-data for two different purposes, viz., (x) to account for the argument from illusion, and (y) as the basis for the construction of physical objects. On account (x) he could say that all immediate data (whether veridical or non-veridical) considered in themselves have the same status. On this account it would follow from the very nature of sense-data that we could not be mistaken about them. On account (y) he has to use sense-data which occur only in veridical perceptions having a character, that is "extra-mental, purely physical, and among the ultimate constituents of
matter". Again the problem is how to decide whether, considered in itself, a particular sense-datum has this character. As I have suggested, Russell has to use perceptual verbs in the "comparative" sense. But in that case there might be scope, however remote (even after making all comparisons), to run an argument from illusion against the sense-data of (x).

Considering all the previous objections and my partial defence of Russell, it appears that logical construction is neither completely successful nor is it adequate. Russell never developed the theory in sufficient detail to explain how it could be made complete. I do not think that the theory could even be made complete given that Russell had to use certain unwanted items and principles which fell short of complete verification. If this is the case, then the answer to our question (β) (is the construction an adequate one?) is incomplete. I have suggested earlier that the answer to the question (α) (regarding its achieving certain results by constructing physical objects out of sensibilia), largely depends upon the success in answering (β). Now given that the answer to (β) is not fully successful, we can conclude that Russell fails, at least in part, to achieve his goal. He is not completely successful in verifying, in the strict sense, the claims of physics and common sense, and thereby avoiding sceptical results.

Why Russell is not completely successful is not difficult to evaluate. Initially, he thought that there were two ways of avoiding sceptical conclusions as regards the verification of physics:

(7) "We may say that we know some principle a priori without the need of empirical verification" which would justify our belief in the entities of physics and common sense. However, the main disadvantage of this procedure is that we have to reject the empiricist claim. "Therefore this way is to be avoided as much as possible".

(8) We may define the objects of physics as "functions of sense-data" (RSDP. 139-40, emphasis added). After setting this standard Russell realized that the way of (8) is the way of sceptical solipsism which upsets the claims of both common sense
and physics. So in the actual procedure of construction Russell found that he had to adopt (7), in part (in inferring unsensed sensibilia and other people's sense-data), thus rejecting the empiricist claim, and adopting only a modified empiricism. This is an alternative way of saying that in the actual procedure of the construction, Russell only adopted a modified version of (8) admittedly to avoid inferred entities only "as much as possible" (RSDP. 140). It might be said that Russell's actual position in construction is one which tried to mix both (7) and (8), thus holding an intermediate position between (7) and (8).

Now the change of position from (8) certainly affected the result he initially sought in the construction of objects of physics and common sense. The bottom line is that since they will not be completely empirical, they will not be completely verifiable. Again, since they will not be completely verifiable, they will not be completely justifiable. What is more, the certainty claim, which got him into the problem of perception must be abandoned and as a result scepticism must invade the whole of empirical knowledge. Above and beyond these problems, the constructionist theory fails partially, as I have noted, for other reasons also. How then should we evaluate the whole theory? Should we conclude that the whole plan of logical construction is just a mistake? I think that it would be rash to say that it was just a mistake given that Russell himself lost faith in the complete application of logical construction and went on to develop a "tentative and suggestive" theory of construction.

I think that a complete application of logical construction is not only unattainable, but also undesirable. Russell certainly realized that his own strict standard prevented his programme from reaching its goal of bridging the gulf between perception and the external world. The only knowledge and certainty Russell's construction may safely be said to yield is knowledge about immediate sense-experience. In that case there is no possible way to prove that there is an external world. If we limit ourselves to what we immediately perceive, only a sceptical solipsism of the present moment is possible. It seems that as long as Russell holds that our direct perception is limited to sense-data, he
cannot come out of the sceptical position. This seems to be an example of what Santayana took to be Russell's basic limitation in philosophy which made him lose his "interest in Russell as a thinker" in 1914.26 Many years later Santayana repeated his regret:

...of course I read what Bertie Russell writes, although, as you know, I think he has relapsed into the British original sin of empiricism, and all his intelligence and keenness will not help him out of the consequent impotence and artifici-
ality.27

Santayana not only regretted Bertie's failure to come out of the empiri-
cist trap, but he even deplored his strict adherence to empiricism:

His radical solutions were rendered vain by the conventionality of his problems. His outlook was universal, but his presuppositions were insular. In philosophy he couldn't entertain the hypothe-
sis that Berkeley, Hume, and Mill might have been fundamentally wrong.28

I think that Santayana is right in his insistence that Russell's adherence to empiricism generated a serious problem for him in reaching his goal of bridging the gulf between perception and the external world. His realist conviction vis-à-vis science and common sense, on the one hand, and his empiricist commitment to Locke, Berkeley and Hume, on the other hand, generated an apparently inescapable paradox for him. The two cannot exist together although he required both. I believe that Russell was quite aware that he could not consistently hold both empiricism and realism. So he had to be a little inconsistent with respect to either of these two positions. Then which one is to pay the price? I also believe that Russell never wanted to become a consistent empiricist at the cost of becoming an inconsistent realist. So it is empiricism which is to pay the price. Since pure empiricism results in pure sceptical solipsism and since Russell desperately wanted to avoid that result, it was only natu-
ral for Russell to relax his strict adherence to empiricism by including unsensed sensibilia and other people's minds in the construction. As soon as Russell allowed them he got rid of the alleged sceptical solips-
ism. The intersubjective version of sensibilia is a realism of sorts. It
does not infer the existence of physical objects as causes of our sense-data, true, but it does make the following realist assumptions:

(9) there are sensibilia which are publicly given;
(10) there are other people who are sentient;
(11) other people's sense-data are like our own.

I do not think that Santayana is right in insisting that Russell did not realize the limitations of empiricism. Russell certainly realized that strict empiricism was sure to fail. He was aware, in almost all his epistemological writings, that there must be more than discrete experience in our knowledge. He realized that the discovery of its limitations had been made possible by his strict adherence to empiricist methods. Thus as early as 1904, when Russell was not yet a complete empiricist, he admitted:

Although empiricism as a philosophy does not appear to be tenable, there is an empirical manner of investigating which should be applied in every subject-matter.

It is only at the end of his philosophical career that Russell made it explicit that the empiricist method itself is inspired by the belief "that all human knowledge is uncertain, inexact, and partial. To this doctrine we have not found any limitation whatever" (HK. 507). Russell's realism not only upsets a strict adherence to empiricism, it also shows that empiricism as a theory of knowledge is fundamentally untenable.

As soon as Russell realized that there was no way to make logical construction complete, he pulled back from his strict claim of constructing physical objects out of sense-data only: it "must not be regarded as more than tentative and suggestive" (OKEW. 128; cf. also RSDP. 170). He called it "hypothetical construction" (OKEW. 100-105, 128-9). It is to perform certain functions but does not necessarily claim to be true. This makes the function of philosophy, for Russell, not so much a matter of searching for certainty in empirical knowledge, as it was in PP (cf. p. 7), but of showing the possibility of the hypothesis even if it is not ultimately defensible (cf. Reply. 707). The strict claim in construction is now reduced to a modified claim: despite the fact that the claims of physics and common sense cannot be verified
by reducing them to claims about sense-data, it is nevertheless possible to show their relationship with sense-data. Russell had to compromise his empiricism with his realism and the only possible way it could be done was by bringing unsensed sensibilia and other people's sense-data into construction and then regarding the construction as hypothetical.

Now the evaluation of logical construction takes a different turn. We have to see whether the constructionist theory as an hypothesis is acceptable. I think it is. So long as Russell steps aside from absolute certainty and absolute verifiability claims (which he did), the constructionist theory, its incompleteness notwithstanding, works well as a theory of perception. But what function is the hypothetical construction to perform? It is to give an account of the facts of the external world which includes an account of the common sense and scientific views of the external world and of the relativity of perception.

Let us start with the common sense view. Russell's realism clings desperately to the common sense view that there is an external public world independent of perception. The common sense view of the external world includes our everyday knowledge claims concerning ordinary physical objects, such as tables, chairs, houses, etc. Common sense believes that these things exist, when they are not perceived, with all their phenomenal qualities. This belief is the starting point of our philosophical and scientific inquiry. So Russell claims that this knowledge has to be accepted (OKW. 73). Russell also realized that common sense knowledge has certain defects. So he wished to "examine and purify" it (OKW. 73). What then is wrong with our common sense knowledge of the external world? In a word it falls short of justification. It inclines us to suppose that we directly perceive physical objects. But the truths of perceptual relativity force us to conclude that in any perceptual situation we are never directly aware of physical objects themselves. Our direct perception is restricted to sense-data. Russell was never satisfied with the Moore-Johnson type of defence of physical objects by raising one's hands or by kicking a stone.

Although it appears that Russell's holding the relativity of perception flouts the common sense view of the external world, this
really is not the case. He tried rather to refine it. This was true of his pre-constructionist theory of perception as well. The cat example in *PP* shows that Russell tried to protect the common sense view of the external world against the paradoxes of Berkelian idealism which was so unintelligible to common sense. Later Russell came to detect the danger in common sense belief. When properly analysed common sense is found to be committed to a substance theory. It is committed to the view that since an object, say a table, cannot be identified with any of its different appearances, there must be an underlying substance which has all of them. He writes:

The thing-in-itself, when we start from common sense assumptions, is a fairly natural outcome of the difficulties due to the changing appearances of what is supposed to be one object. It is supposed that the table (for example) causes our sense-data of sight and touch, but must, since these are altered by the point of view and the intervening medium, be quite different from the sense-data to which it gives rise (*OKEW*, 92).

This substance theory is neither empirically verifiable nor capable of being inferred from what is empirically verifiable, *viz.* sensibilia. This kind of unverifiability is involved in our common sense knowledge and what Russell calls the "metaphysical monsters" (*RSDP*, 148).

In the constructionist period Russell found that he did not have to express common sense beliefs in a way which allowed substance theory. The solution was to define the table in terms of a less dubitable set of entities (sensibilia) such that that set has all the properties which the table is supposed to have. The set would be sufficient to preserve what common sense regards as the table and therefore there would be no need to assume an entity whose existence we could never verify. Notice that what Russell is suggesting is that we can get rid of the need for assuming that there are physical objects besides the sets of sensibilia. This is certainly not a device for proving or denying that they do not exist as substances. As Russell explicitly asserts: "[i]t is not necessary to deny a substance or substratum underlying [the] appearances; it is merely expedient to abstain from asserting this unnecessary entity"
(RSDP. 148; cf. also PLA. 273-4). The hypothetical construction accords, to some extent, with the common sense view in the sense that it gives the same information, it suits and also fulfils our everyday purposes, it "fulfils roughly the same function" (OKEW. 111) without involving unjustifiable "metaphysical theorizing" (OKEW. 107, 111; PLA. 272).

As I have already mentioned (cf. supra, 5.5), the constructionist theory is also intended to fit Russell's realist interpretation of the scientific view of the external world. On the one hand, he wanted to bridge the gulf between physics and perception by "defining the objects of physics as functions of sense-data". On the other hand, he accepted the truths of physics by interpreting physical theory as referring to unobservable things and events. These two opposite attractions generated a dilemma in Russell. What we directly perceive are sense-data, not physical objects. Again, Russell realized and admitted that physics stands in need of physical objects understood as something quite different in nature from sense-data. How then can we define the objects of physics as functions of sense-data? The dilemma is between his realist view of physics and his empiricist view of perception. Only a hypothetical construction can handle this situation. This means that physics can be accepted, at least hypothetically, as verifiable. His realist view of physics implies that there are physical objects and events which are not reducible to sense-data. However, to put his claim in line with sense-experience he introduced the theory of sensibilia which although not wholly empirical are not wholly unverifiable. Then he used them in the construction of objects of physics which the realist interpretation permits.

The hypothetical construction accords not only with the common sense and scientific views of the external world, but also with the apparently conflicting views of physics and common sense. Modern science, especially mathematical physics, tells us that the external world is increasingly more complex than common sense ever dreamt of its being. Common sense admits that the world is made up of solid objects which we see, touch, smell, etc. and that they have all the qualities we perceive them to have. Although physics begins with the common sense
view of the world, gradually it finds it more profitable to substitute more theoretical entities in place of physical objects.

"[P]hysicists cut up matter into molecules, atoms, corpuscles, and as many more such subdivisions as their future needs may make them postulate, and the units at which they arrive are uncommonly different from the visible, tangible objects of daily life... Matter consisting of such elements is as remote from daily life as any metaphysical theory (UCM. 121).

It is difficult to determine how far physics is consistent with common sense. Physics neither denied that physical objects have the apparent qualities which common sense supposes them to have nor did it reveal anything about the intrinsic qualities of physical objects. It is only concerned with their laws. Physics does not deny that physical objects appear to have colour, but it denies that colour forms part of the physical objects. Physics and common sense do not conflict with regard to belief in the external physical objects. Both admit the reality of physical objects, but they disagree as to the nature of physical objects. However, when the conflict is between physics and common sense, it is common sense which comes off worse. This is because of Russell's biased view that physics is more likely to be true than common sense.

Now let us see whether the hypothetical construction can account for the facts regarding the relativity of perception which any theory of perception must account for. As I have suggested previously, while rejecting naive realism Russell accepted the common sense view of the external world. He also realized that the rejection of naive realism was not enough. He must give an account of the notion of perceiving a public object. The relativity of perception leads to a grave difficulty in explaining how one person sees the supposed persistent and independent object as having one shape, colour, etc. while other observers see it having quite different shapes, colours, etc.

The problem arises in the following way: when several people simultaneously see (in a literal sense) an object, say a table, they all are supposed to see the "same" public table which exists independently of perception. The appearances they see when they "see" the table are
not the same. To one person, from a particular point of view, the table may look round, to another it may look elliptical. To one person it may look brown to another red. The common sense view that they all see the same table entails that the round table is at the same place as the elliptical one and that the brown table is at the same place as the red one. This is logically impossible, for round and elliptical, brown and red are mutually exclusive. This impossibility generates a serious difficulty for realism. As Russell explains:

> The difficulties of realism arise from such facts as that the colours and shapes of objects appear different from different points of view. We assume that there cannot be two different colours at a given moment "in the same place" or that "the same thing" cannot have two different shapes. Hence, when to one observer a thing looks white, and to another brown, both cannot see truly.\(^{31}\)

How then to account for the difficulty? An account is necessary to explain how it is possible that the same thing can appear both round and elliptical, white and brown. The ordinary way of putting this matter is to say that the table appears elliptical but that it is really round. Then one might ask: what does the distinction between appearance and reality amount to? Out of many appearances of the table, why do we select one as representing the real shape of the table?

To give a generally acceptable reply to the above question, let us suppose that the table is perceived from different positions. From a particular position, \(P_1\), which is 25 yards and 45° from the surface of the table, the table looks elliptical to an observer. Let us call the perceptual claim of the observer \(S_1\). But when he walks up to the table and stands just next to it and looks down onto it from an angle of 90°, say a position \(P_2\), he makes a second claim that the table looks round. Let us call this perceptual claim \(S_2\). Now which one of \(S_1\) and \(S_2\) is correct and which one is erroneous? Let us also suppose that there are no additional considerations such as the observer's being drugged or suffering from a mental disorder. Now if the rule of ascribing shapes is that it be done from a position as close to the table as possible whilst remaining consistent with maximum discrimination, then we should say
that \( S_2 \) is the correct claim and that \( S_1 \) is erroneous.\(^{32}\) This account is compatible with the common sense view that if the table is round it need not look round from every point of view. So the person in question might say that whereas the table is round it nevertheless appears elliptical from \( P_1 \). But this account does not address the problem of perceptual relativity. The observer has certainly a perceptual experience. How then to characterize this perceptual experience?

Traditionally, two theories have been suggested on behalf of realism, as offering replies to this question. They are the generative theory and the selective theory. The generative theory holds that the existence of a sense-datum is physiologically conditioned, that the perceived qualities of things cease to exist when we no longer perceive them.\(^{33}\) On the other hand, the selective theory suggests that sense-data actually exist in physical objects whether we perceive them or not. What the sense-organs do is select from the great variety of possible ones belonging to the same object.\(^{34}\) With regard to the relativity of perception, it appears that, as Stace pointed out,\(^{35}\) realism is forced to adopt either the generative or the selective theory. The generative theory holds that physical objects themselves have none of the qualities which anyone can perceive. They exist only when they are being perceived. So the incompatible qualities are not in the "same object". The selective theory, on the other hand, suggests that the same physical object has all the incompatible qualities which any actual or possible observer can perceive.\(^{36}\) Thus if I see the table as round while another person sees it as elliptical, the truth is that both round and elliptical are present in the table. My sense of vision selects the round for me while another person's sense of vision selects the elliptical one for him.

The generative/selective distinction was not current in Russell's early constructionist period. But even if it were, I think he would not agree with either of them. The generative theory is simply against the very foundation of Russell's theory of perception. It destroys the character of sense-data as "extra-mental, purely physical, and among the ultimate constituents of matter". Not only this, it also
goes against the common sense scientific view of the external world. On the other hand, although the selective theory makes sensibilia theory possible, Russell would not accept it either. The reason is that the selective theory destroys the basis for rejecting naive realism. Not only that, it fails to give an answer to the common sense supposition as to what qualities physical objects have. As a result it will not be any improvement on naive realism and must attribute all the incompatible qualities to the object itself, by claiming that physical objects have all the qualities they appear to have. So when one person sees the table as being brown and another person sees it as being red, they both see the same table as both brown and red, which is logically impossible.

How then to deal with the incompatible perceptual situation? There may be many different responses to the question given that any theory of perception must attempt to deal with the situation. At the same time, there will be many controversies as to their acceptability. I am not going to deal with them here. However, I should mention very briefly, one response which tries to appeal to an analogy with the so-called adverbial theory of sensation.\(^{37}\) The adverbial theory attempts to avoid expressions like "the table looks elliptical" (when it is round) by rewriting the expression adverbially: "I see the table (appearance of the table) elliptically". The theory suggests that instead of talking of experiencing an appearance with a property P (elliptical) we should talk of sensing P-ly, or sensing in the P way. In doing this, we can account for a perceptual experience simply as a way of being aware rather than as an object of awareness.

However, I do not think that the adverbial theory sufficiently addresses the problem of perceptual relativity. To make the theory work one has to admit that there can be situations in which the round table might look elliptical. In fact, even common sense admits that the table may not be the way it appears to be, and simply stating the fact may avoid giving any commitment to the reality of the incompatible perception. But this does not provide an answer to the question: how can we make sense of the incompatible perceptual situation?
I believe that Russell's hypothetical construction of space provides a viable solution to the problem of perceptual relativity. In chapter six I have shown that Russell's attempt to construct a six-dimensional all-embracing space is a failure. I have also suggested that what he wanted to get out of such an attempt was not a failure (cf. supra, 6.1.4). It was to remove the ambiguity of the word "place" by assigning two places to a sensibile, viz, the place at which it is located and the place from which it is being perceived. Russell thought that after constructing a six-dimensional space he could assign the sensibile these two places. I have suggested that Russell does not require a six-dimensional space to get this result. The two places are in the same three-dimensional perspective (physical) space. So the failure to construct a six dimensional space does not affect its result.

The incompatible qualities of the table do not exist at the same place, but in different places from which the table is being perceived. They exist in private spaces. Russell found this solution attractive in his earliest constructionist period. Thus in "Here and There in Sensation" he clearly stated:

All serious difficulties in the way of realism are concerned exclusively with sight... [They] can be... solved by assuming that two places are involved in a visual quality -- shape or colour--namely the place at which and the place from which.\(^{38}\)

The difficulty of the perceptual relativity disappears when we realize that although the same table cannot be both brown and red or round and elliptical it can appear to have both these sets of incompatible qualities from different positions (points of view). Prior to the discovery that a sensibile could be associated with two different places, it seemed impossible that sense-data, which are physical, could account for the relativity of perception (cf. supra, 6.1.4).

Such a consideration not only gives an account of the perceptual relativity that things appear to have different shapes, colours or different spatial relations to one another; it also defends a major claim of Russell's theory of sense-data, viz. that they are physical.
The apparent privacy of sense-data does not prove to be an obstacle to giving information about public physical objects. Russell certainly wanted to make sense of the fact that although appearances are situated in the private space of the observer, this does not destroy their physical character. He says:

What we call the different appearances of the same thing to different observers are each in a space private to the observer concerned. No place in the private world of one observer is identical with a place in the private world of another observer. There is therefore no question of combining the different appearances in the one place; and the fact that they cannot all exist in one place affords accordingly no ground whatever for question-ing their physical reality (RSDP. 147).

And as soon as the physical reality of sense-data is secured, it justifies Russell's sensibilia theory which, in turn, secures his realism.

We see that Russell's hypothetical construction provides a viable account which fits the facts of the external world. We have yet to decide whether the hypothetical construction should be preferred to its rival hypotheses. But what are the rival hypotheses? Any theory of perception could be a rival hypothesis. However, let us limit the rivals to solipsism and the PP theory of perception. From a logical point of view, one might argue that solipsism is doubtless a better and more consistent hypothesis than both the constructionist and the PP theory of perception. That might be true and Russell certainly admitted it. But from a practical point of view, solipsism loses its ground in that it does not account for the facts. Since Russell's aim is to verify the claims of physics and common sense and since both physics and common sense hold that their objects exist independently of perception, Russell would not mind being less consistent, thereby avoiding solipsism, while being more consistent in accounting for the facts.

It has yet to be decided whether the hypothetical construction of the world can serve as an adequate replacement for the inferred entities of common sense and scientific knowledge. Is the constructionist theory any better than the PP theory of perception? Again the answer to this question cannot be conclusive. One may even think that Russell
moved from a bad position to a worse position given that he has to rely on more inferred entities than in PP. This is another way of saying that shifting from the PP theory to the constructionist theory is something like, as Hirst says, jumping "out of the frying pan into the fire". That might be true for a direct realist like Hirst. But for Russell perception is certainly less direct than Hirst-type people ordinarily suppose it to be. Russell preferred the constructionist theory as more advantageous than the PP theory. Let us recall, one more time, Russell's PP account of physical objects as inferred entities. The notorious difficulty with this view is that it makes our knowledge of physical objects depend upon ever unobservable causes of sense-data. The constructionist theory is an alternative proposal which would dispense with the physical objects as inferred entities. This is an empirical undertaking the aim of which is to assume no entities which cannot be brought back to experience and a verifiable level.

Although it is not possible to prove the hypothetical construction (as in the case with any hypothesis), Russell is right in recommending it over the PP theory. True, the constructionist theory does not remove all inferred entities; but it does a great job in allowing only those inferred entities which are like sense-data and could, in principle, be brought back to the perceptible level. The more interesting thing in the construction is that it does not even deny that there are physical objects as inferred entities. What it desperately wants is to avoid inferring them. However Russell is inclined to remain non-committal. The reason is mainly epistemological, viz. that the assertion of physical objects over and above collections of sensibilia "introduces an element of unverifiable dogma" (OKEN. 153). But its rejection also amounts to the same, that is to say, to reject it is to reject more than the evidence allows us to reject. Russell says:

Those things [objects of physics and common sense] are all of them, as I think a very little reflection shows, logical fictions [logical constructions] in the sense that I was speaking of. At least, when I say they are, I speak somewhat too dogmatically. It is possible that there may be all these things that the physicist talks about in ac-
tual reality, but it is impossible that we should ever have any reason whatsoever for supposing that there are (PLA. 271-2, emphasis added).

Russell finds no reason either to accept or to reject inferred physical objects. Either position is metaphysical and should be avoided in order to reduce the risk of our knowledge being fallacious. Russell admits:

I always wish to get on in philosophy with the smallest possible apparatus, partly because it diminishes the risk of error, because it is not necessary to deny the entities you do not assert, and therefore you run less risk of error the fewer entities you assume (PLA. 221-2, emphasis added; see also RSDP. 148).

This passage also suggests that you run less risk of error if you refrain from denying that there are physical objects over and above the collection of sensibilia.

Whereas the PP view involves the risk of being in error, the constructionist view does not. The constructionist view suits all the purposes which we demand of the notion of physical objects in PP, tells us the very same things, gives us the same information, and answers the same question without assuming inferred entities. Russell must admit that the constructed object will not be as certain and as verifiable, as it was originally intended it should be, but it will be more certain than the PP view. Given that a complete application of the constructionist view would be impossible and an "intellectual game" only (Reply. 701), the constructionist theory will not be wholly true, but it will not be wholly false either. Russell says that the field of such knowledge is one for the application of what he calls "the scientific method in philosophy". Its advantage is explicitly expressed in the following passage:

A scientific philosophy such as I wish to recommend will be piecemeal and tentative like other sciences; above all, it will be able to invent hypotheses which, even if they are not wholly true, will yet remain fruitful after the necessary corrections have been made. This possibility of successive approximations to the truth is, more than anything else, the source of the triumphs of science, and to transfer this possibility to
philosophy is to ensure a progress in method whose
importance it would be almost impossible to exag-
gerate (SMF. 109).

It is true that neither in the pre-constructionist period nor in
the constructionist period did Russell seriously question either the
existence of common sense physical objects, or of objects of physics.
But as an empiricist-foundationalist he tried to justify their exist-
tence by showing that they are empirically grounded on sense-data. Now
since Russell was convinced of the existence of sense-data, and since he
was overwhelmed by sceptical doubts about the existence of inferred
physical objects, he was delighted by the radical solution of doing
without inferred entities and constructing a world entirely out of
sensibilia. Russell certainly realized that so long as he held that phy-
sical objects were unobservable and that we inferred their existence
from sense-data, sceptical doubt would have some role to play.

How much then is the sceptic satisfied with the constructed
objects? Not that much. Russell is now ready to admit that since the
constructionist theory falls short of the "absolute certainty" he sought
earlier, the sceptic may not be satisfied. The sceptic might challenge
the very core of our belief in the external world by challenging the
justifiability of inferences to unsensed sensibilia and the sense-data
of other people. He might ask why should we accept them. After all they
might be just false. Then what reason can Russell assign for accepting
the common sense scientific view of the external world? Russell's answer
is straightforward enough: no reason can be assigned.

Universal scepticism, though logically irrefut-
able, is practically barren; it can only, there-
fore, give a certain flavour of hesitancy to our
beliefs, and cannot be used to substitute other
beliefs for them (OKEW. 74). 40

Despite Russell's attempt to avoid scepticism concerning our
knowledge of the external world, he felt unable to achieve some measure
of security for human knowledge against scepticism. Russell certainly
did not think that total security against scepticism was possible, but
he thought that we have good reason not to be sceptical. The cons-
tractionist theory tried to minimize scepticism by constructing physical objects out of sensibilia and other people's sense-data. Although the constructionist theory contains a certain amount of circularity and other defects, still, I believe that this was a highly interesting manoeuvre for Russell to have made against scepticism. The theory of sensibilia can be regarded as the heart of Russell's theory of perception during the constructionist period. It helped Russell not only to give a plausible reply to the sceptic, but also to forge a link between his empiricism and his realism, to act as a possible candidate for bridging the gulf between physics and perception and to retain a moderate use of empiricism. I do not think that there could be a better way of compromising between realism and empiricism. It helped him to remain faithful to the spirit of his empiricist predecessors. No matter how far his realism takes him from experience, he could fall back on the experiential foundation.
Notes to Chapter Seven

1. Here one might bring a charge against Russell for loose terminology. One might say that Russell's language of "seeing" or "touching" the table does not conform to his theory. He speaks with the vulgar while thinking with the philosophers. However, unfortunately, philosophy (like science) does not have a language of its own. So it must use the one common sense has built and uses it in a Pickwickian way.


3. It might be claimed that Russell's own admission that each individual's sense-data are private to each individual implicitly implies that other individuals besides the individual himself exist. But this is not true. Since other individuals "are represented to me by certain sense-data, such as the sight of them or the sound of their voices" (PP. 21) which are private sense-data, nothing follows as to their existence as physical objects.

4. Hume, *op. cit.*, p. 211. Although Hume's attack is pointed against Locke's position, it also works well against Russell.


13. Russell, "The Reality of Objects" (no folio no.).

14. It should be noted here that Russell maintained that "[d]ream-data are no doubt appearances of 'things', but not of such 'things' as the dreamer supposes" (RSDP. 169). I think, to some extent, this is true. But I am not sure whether hallucinatory data should be considered as data of anything.


16. For a detailed discussion of these three senses of perceptual verbs, see Jackson, *op. cit.*, pp. 30-49.


20. Russell, "The Nature of Sense-Data -- A Reply to Dr. Dawes Hicks", p. 77; cf. also RSDP. 142.


24. See also "On Matter", f. 12.

25. This is the lesson of George Santayana's *Scepticism and Animal Faith: Introduction to A System of Philosophy* (London, 1923).


31. Russell. "Here and There in Sensation", f. 1; cf. also RSDP. 146; OKEW. 93-4.


33. Stace wrongly attributes this view to Russell's PP position. See Stace, The Nature of the World: An Essay in Phenomenalist Metaphysics, p. 118; "Russell's Neutral Monism", p. 365. As I have suggested earlier (cf. supra, 3.2.6), although Russell seems to have assigned sense-data an intermediary status between perception and physical objects, he in fact, assigned them an independent physical status.


36. See ibid. p. 119


38. Russell, "Here and There in Sensation", f. 2. See also RSDP. 146-7; OKEW. 100; "Matter. 2 Problems, (1) Space (2) Things", f. 8; "On the theory that sense-data are functions of two places" [notes on logic, sense-data, etc.], 1913, R.A. file # 220.011390.


40. In his later epistemology Russell systematically ignores scepticism. When he does mention it, he takes it as an insoluble problem and an unacceptable position, unworthy of serious philosophical concern (cf. HK. ix, xi, 462).
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