# A COGNITIVE JOURNEY TOWARDS TRUTH*

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The appeal to sense experience is commonly the quickest and most immediate source of our knowledge about the external world. It seems quite obvious then, that we do know a lot of things and yet philosophical tradition has sought justification for knowledge claims based on experience. The Greeks, for instance, called absolute certain knowledge 'episteme' and contrasted this with 'doxa' or mere opinion. Traditional epistemologies therefore defined genuine knowledge as justified true belief or opinion. The Knower must be able to justify his/her beliefs, give reasons for them or even establish or prove them. The search for the most reliable sources that validate knowledge claims consequently became a perfectly legitimate enquiry.

The empiricist's search for the ultimate and most dependable source of knowledge claims gave rise to the formulation of basic- statements or observation-statements, which must necessarily underlie all propositions about the empirical world. Russell for instance defines a 'basic-statement' or a proposition as follows: it is a proposition which arises on occasion of perception, which is the evidence for its truth and it has a form such that no two propositions having this form can be mutually inconsistent if derived from different percepts.[1] Russell and some of the positivists like Schlick and Ayer would accept the thesis that the truth of basic propositions depend upon 'its relation to some occurrence of fact or experience'. Further, basic propositions arising from pure immediate experience is never the source of error. Error is always due to an 'active' misinterpretation or wrong inference made by the Subject in making the statement. Sense-data experienced are never doubted; though, one can misperceive and misinterpret one's sense-data. Knowledge claims based on ideas, impressions, sense-data or atomic experiences which are immediately or directly known and consist of 'unadulterated elements of information' are all varieties of what Popper calls the 'Bucket' theory of mind where all experience consists

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of information received through the senses.[2] At first, the 'bucket' is empty. When the senses begin to operate, information flows into the mind and experiences get ordered giving rise to beliefs. This picture has two immediate consequences; one is that, the longer your 'bucket' has been around the more experiences you will have had and the more beliefs you will have formed. Secondly, if some of the holes in the 'bucket' are blocked, then whole areas of experience and belief thereof will be unavailable[3]. To most empiricists all beliefs as a matter of psychological fact arise out of experience. The philosophical question however, is, which of these is to be called knowledge. If sense-experience is the only authoritative source of knowledge, then we do not get very far.

Learning from experience requires knowing a language. Language enables us to see with other people's eyes and know by other people's understanding[4]. Helen Keller's two most important holes in her 'bucket' stopped and one would suppose she was condemned to a life of ignorance. (*She became blind and deaf shortly after birth*). Yet, she says in her autobiography she had no sense of herself as a human being before she knew language. Classical Empiricists then like Locke and Hume continued to talk of ideas, impressions, beliefs and their justifications. Instead of saying, all we can think of are our own ideas, we now say, all we talk about are our own words. Pouring psychologistic wine into linguistic bottles may not have really improved its flavour[5], but it does make the important transition from the world of subjective experience to the world of public language.

Though for all practical purposes, our observational experiences do provide the starting point for our knowledge claims about the external world, it has been difficult to provide 'certainty' for most generalisations that form part of scientific knowledge. Hume's problem of Induction, for instance, had repercussions on the entire area of scientific knowledge which seemed no longer able to make knowledge claims with much validity. If Hume's analysis on the problem of Induction is accepted, one cannot draw any valid inference from observation to theory and our scientific beliefs are no longer reasonable. On the one hand the principle of empiricism requires theories to depend on the results of observation and experiment and on the other hand, these can never be validated or justified. Probability is all that science can offer. It is possible however, to

accept the principle of empiricism without the principle of induction which seeks positive justifying reasons[6].

Karl Popper replaces the problem of justification with the problem of explanation in the form of critical reasons[7]. Justification taken in the sense of being able to give a final verdict in favour of one's conclusion with the help of some observation-statements or some incorrigible experiences, generates infinite regress apart from the practical problems in the attempt to trace back all knowledge to its ultimate source in observation. Critical reasons on the other hand, are never ultimate but remain forever conjectural hypotheses which one can continue to examine infinitely. They help explain by rational arguments why in the light of one's goals, a particular theory is chosen over another. Neither observation nor reason nor any inspiration is to carry any authority. All human knowledge is mixed with error, prejudices, dreams and hopes and truth therefore must remain beyond human authority. Instead of asking, what are the best sources of knowledge, we need to modestly ask, "how can we hope to detect and eliminate error."[8] The logic of criticism only requires one to avoid and eliminate error as far as possible. This can be achieved by criticising the theories or guesses of others, as well as one's own, if possible, and thus make it least resistant to falsification. Instead of seeking justifications then, we need to accept the conjectural character of scientific statements.

Knowledge does not begin then with well-marked areas or boundaries of subject matters. They begin with problems and end with problems. It is only in and through a problem that one becomes conscious of holding a theory. There are no given starting points in the form of pure observations or experiences and therefore the growth of scientific knowledge is logically independent of anyone's subjective experiences and beliefs. Scientific knowledge is not the result of what one believes. A theory, for instance, may be true even though nobody believes it or has any reason to think it is true. On the other hand, a theory may be false even though we have very good reasons for accepting it (*The geocentric view, once held, is a good example*). It is knowledge in the objective sense then, that characterises scientific knowledge which consists of 'conjectural theories, open problems, problem-situations and arguments'[9]. Scientific knowledge in this sense can be studied, absorbed, applied as well as accepted or rejected critically or dogmatically. The aim of all rational criticism does remain a search for a 'true'

theory. Popper was deeply influenced by Einstein's work and he showed how Einstein apparently did not believe that Special Relativity was true. At best it could be an approximation (*since it was valid only for non-accelerated motion*). "He searched for truth and thought he had critical reasons, indicating he had not found it".[10] Objective truth therefore, is to Popper a regulative idea in that it is a standard which we may always fall short.

Popper thus attempts to resolve the tension between the empiricist prejudice to base all knowledge claims on experience and the logical requirement that knowledge be understood in terms of truth. He makes a very important distinction between the psychology of knowledge and its justification in terms of some subjective experience, and, the logic of knowledge (and not belief) which critical perference generates, namely, objective knowledge. It is knowledge without a knowing subject - without a knower[11]. It is true, however, that there is knowledge in the subjective sense, which consist of dispositions and expectations and a whole world of subjective experiences. But there is also knowledge in the 'objective sense which consists of linguistically formulated expectations submitted to critical discussion'[12]. Popper gives an evolutionary analogue to the growth of objective knowledge where its growth is determined by how problems are faced and solved; how,from these new possibilities, new problems emerge. The approach to objective knowledge begins with analysis of the products of human activity; with effects, rather than causes. It is thus one of the mistaken subjectivist approaches to knowledge to imagine that a 'book without a reader is nothing'. A book remains a book-*a world 3 product*, even if it is never read, or is a useless one or is misunderstood and misinterpreted[13]. What makes knowledge objective is because of what happens to knowledge as information. In order to belong to the world of objective knowledge a book need only be capable of being grasped. Popper thus adds to the common sense distinction of the world of physical events (known as world 1) and mental states (known as world 2), a third world of language (world 3), in so far as it describes the physical or the mental world, which also includes our grasping of theories or events. World 3 products include all that is represented in books and journals, stories and myths, scientific and poetic thoughts and works of art as well[14].

Popper builds on Karl Buhler's theory of the lower and higher function of language[15]. The lower function of language is more natural, expressive and

communicative (which is also shared by the animal world). The higher function of language is the descriptive or information giving fearture, which is our basis for what is called the argumentative or the critical function. Description normally involves expression and communication which one could also interpret to include what Davidson calls, 'propositional attitudes' which are non-individuative in that, 'though they are psychological, do not bestow individual propositional content on the attitude[16], that is, there is an unavoidable self-expression involved in description which may not necessarily be as relevant as the description itself. To Popper, 'expression' and 'communication' are more psychological and therefore connote subjectivist perspectives which do not help in contribting to the 'objectivity' of knowledge. It is through the interaction between the descriptive and the critical function that one is able to allow for any objective knowledge to develop. There is then an autonomous growth of knowledge (scientific knowledge) which emerges out of this descriptive and critical nature of language. The idea of objective truth emerges out of the descriptive function of language, wherein one evaluates a story or theroy in terms of facts as they actually happen or occur. The truth content functions from a regulative context which takes one closer to the true story[17]. Verisimilitude is again further critically or rationally evaluated from the point of truth of truth-finding. However, the criteria in scientific theories is not necessarily in terms of how 'true'they are or how closely they approximate to how things are, but more in terms of 'relevance' and 'completeness' of the explanation. For, there is always a presupposition that the story told or a theory put forward, is to solve 'problem'[18]. Putting forward explanations and testing them assume that we hope to find true theories. It is this regulative idea that makes rational criticism possible. However, these categories have meaning only within the critical function of language and therefore belong to the World 3 arguments. Truth, validity, logical relations and theories about nature, are all world 3 concepts[19].

Since all experimental observation is an interpretation of facts in the light of some theory or other, there is no such thing as 'pure observation' or observation without any theoretical component.'All knowledge is theory-impregnated'[20]. That observation is theory-laden is also seen in the famous duck- rabbit figures. Research in empirical psychology brings out a lot more examples in the form of visual patterns seen in drawings, paintings and photographs. When we formulate observation statements they can transcend

experiences which prompt them and consequently there is a distinction that philosophers make between 'seeing' and 'seeing as'. Seeing that something is the case requires concepts and it is language that enables us to formulate observation-statements. 'Here is a glass of water' is a simple description and yet theoretical because the words, 'glass' and 'water' denote physical bodies which exhibit law-like behaviour. In a sense, glasses of water and electrons are at par and our decision to take the one rather than the other is simply a matter of choice. Since all observations presuppose the existence of some system of expectations, one lives in what is called a 'horizon of expectations[21]' which becomes the frame of reference conferring significance to our experience, actions and observations. This analysis refutes the thesis that observations are the basis or foundation of all knowledge claims. Science begins and ends with 'problems', always presupposing a 'horizon of expectations' or even, as it were, yesterdays horizon of expectations. Observation acts as a 'witness' in the course of critical testing, where it does not stand at the beginning, but at the end of investigation, confirming predictions, crowning success. As Morritz Schlick also pointed out, observations play the part of absolutely certain knowleldge when science makes 'contact with the real, not at the base, but at the apex.... what matters in science not what it rests on, but what it leads to[22]'. Observation-statements supply us with genuine knowledge of reality wherein one grasps the meaning at the same time one grasps its truth[23]. In all other cases of synthetic statements, determining the meaning is distinguished from determining the truth. Schlick too attempts to save Positivism from foundationalist problems, by allowing for the corrigibility of basic propositions, since they function as nothing less than hypotheses.[24] It is only at the moment of observation itself, that these propositions have the role of preserving perfect certainty and with this the process ends. Observation-statements do not constitute a basis for science but are starting points for the conjecture of general propositions and can be at any moment corrected by new observations.

Popper's position differs in that there are no 'pure observations' which are ever ultimate or the basis of any objective claims to knowledge. However, scientific knowledge does lead to some contact with the real for which the role of observation is subordinate to the 'testability' of a theory[25]. The statements of science or the system language as Carnap puts it must be universal and intersubjective. Unified science, to Carnap and Neurath was nothing but the

attempt to construct a non-contradictory system of protocol or basic statements. Neurath, unlike Carnap, rejects any attempt to take any conclusively established pure observation-statement as the starting point of the sciences. It is meaningless to talk of a private language, to quote Neurath, 'we are like sailors who rebuild their ship on the open sea; never able to dismantle it on dry rock and to reconstruct it there out of the best materials[26].

The demand that all scientific statements must be justified only by (observation) statements leads to dogmatism and infinite regress. The other alternative termed as psychologism entails that statements must be justified also by perceptual experiences. The trilemma[27] cannot be solved by opting for either of the above. As Popper sums it all up, 'Experiences can motivate a decision and hence an acceptance and rejection of a statement, but a basic statement cannot be justified by them - no more than thumping on the table'[28]. If every statement is corrigible, then one can as well go on infinitely. But this would render science impossible and therefore scientists have to make a decision or agree to accept an observation statement when it has passed a certain number of tests. To this extent observation-statements are conventions. Unlike the positivists, one cannot verify or justify our empirical knowledge claims. One can only rationally criticise them and tentatively adopt those which seem best to withstand our criticism and which have the greater explantory power. The aim is to avoid dogmatic protection of theories or immunising a theory against refutation. Falsifiability or Refutability is a test to ascertain the empirical character of scientific theories and reject thereby transcendent metaphysical theories which are non-testable and irrefutable. Thus, the more testable and criticisable a theory is, the more progress we make. For Popper, the role of basic statements then, belong to a class of statements that are used in testing theories and constitute what is called as a 'potential falsifier' for a theory[29]. We find that experience is no longer the touchstone of all knowledge claims. Subjective experience is not the basis of the growth of knowledge. Knowledge, if it has to be objective in the sense of being true independently of individual perceptions and experiences, can never by definition, be ultimate, final or absolute. It is not only because of the transient and private nature of ones experiences that they cannot be the basis of objective knowledge. It is also because there must be *progress* not just change, in one's knowledge claims. This entails a certain amount of distance from subjective experience which is at once also bridged by

language. Language then is not merely a tool of communication but determines significantly the play of meaning and truth.

Popper's world of objective knowledge has significant interactions with the psychological world, particularly in the understanding and in turn contributes to the growth of objective knowledge which arises from the interaction of the descriptive and critical functions in language. The worlds of physical events, mental states and language restrict objectivity to only the third world of language in its critical function.

Let us look into a similar attempt in providing for objective knowledge without foundationalist problems. Donald Davidson's epistemology requires knowing Subjects to confirm knowledge about world 1, world 2, and world 3, if we include and assume that what goes on in people's mind, in so far as they express linguistically the 'same' reality, gives rise to a different kind of irreducible knowledge. Davidson posits three varieties of knowledge[30] and I attempt to compare these with the schema of Popper's objective knowledge. The first two worlds of physical events and mental states have their counterpart in the following two varieties of knowledge. Knowledge about the world around us (that is, knowledge in the objective sense), and about ones thoughts and feelings (that is, knowledge in the subjective sense), is something that we are most often immediately aware of and do not require proof. Both Popper and Davidson therefore begin by assuming the two worlds of physical and mental events quite unproblematically. The third variety of knowledge is knowledge about what goes in people's minds, which of course is indirect and consequently asymmetrical to the direct knowledge one has of the contents of ones mind.

Inability to unify these three varieties of knowledge would result in scepticism and therefore Davidson attempts a holistic analysis of the conceptual connections between our knowledge of our own minds, of others and of the external world[31]. Each of these varieties of knowledge is concerned with aspects of the 'same' reality and each irreducible to any one or both. Popper's world 3 is an autonomous area of knowledge including all products of the human mind, whether of science or of art. Although he calls world 3 a metaphor[32] - a way of ordering our world, it is more than a metaphor. There is a 'real' interaction between the Subject, which anyway takes in a lot by way of books and other objective sources, and, physical events or world 1. For instance, goals and plans

operate on world 1 through the Subject and belong to world 3. Not only does the Subject act upon world 3, but world 3 acts back on the Subject[33]. (An artist, may, for instance learn from his work constantly, even whilst creating).Everyone participates and contributes towards world 3, which begins with a language, and, gets something out of it. And sometimes we get more back than we have put in. Einstein once said, 'My pencil is cleverer than I am'. By writing and calculating on paper he could often get results beyond what he had anticipated[34]. This is the world then, which is an important source of truth and objective knowledge. Popper, like Davidson, is more interested in truth and truth-conditions rather than words and their peculiar meanings and unique reference. Davidson's problem now is to account for knowledge of the external world, the contents of ones own mind and that of others without resorting to observation or evidence. Although belief is a condition of knowledge there is an additional demand that one must be able to discriminate between true belief and false belief, between reality and appearance [35]. In short, beliefs also involve the capacity to grasp objective truth. Beliefs about the external world and the problem of other minds, both require the logical independence of the truth conditions of what is believed and the truth of those beliefs. No amount of knowledge of the content of ones mind can insure the truth of a belief about the external world. The logical independence of the mental works equally on the other direction. No amount of knowledge of the external world entails the truth about the workings of a mind[36].

All knowledge of the world does come through the agency of the senses and this *is* of epistemological significance. What gives content to ones belief and meaning to ones words, however, requires a theory which makes truth primary (rather than evidence) where meaning is directly connected to the conditions that make sentences intersubjectively true or false.[37] Truth conditions are developed through a correlation of ones own response with those of others *vis-a-vis* the same objects and events, 'All evidence for or against a theory of truth *(whether of interpretation or translation)* comes in the form of facts about what events or situations in the world cause or would cause speakers to assent to or dissent from each sentence in the speakers repertoire.'[38] Unless therefore the triangle of two observers reacting to common features of the world is completed, one cannot give content to thought and belief. Thus the knowledge of another observer is essential to all thought and knowledge. Knowledge of other minds and of the external world are mutually dependent. Knowledge of

our minds and that of others are also mutually dependent. Beliefs about the world are publicly confirmable. Since thought depends on communication, interpersonal communication becomes the source of truth-claims.

Davidson invokes two key Principles of Coherence and Correspondence (together known as the Principle of Charity), if correct interpretation is to be possible[39]. The Principle of Correspondence prompts the interpreter to take the other person to be responding to the same features of the world that the interpreter would respond to, under similar circumstances. The Principle of Coherence prompts the interpreter to discover a degree of logical consistency in the thought and actions of the other speaker. Together they endow the speaker with beliefs about the world which contain some amount of truth. The nature of correct interpretation guarantees that a large number of our simplest beliefs are true and that they are also known to others[40].

Another consequence of such a position is that the totality of evidence provides *no* unique reference for a theory of truth because all possible evidence cannot limit acceptable theories to any one. Therefore with respect to the mental world, what is required, is for the interpreter to consider how best to consider the other person as intelligible. This knowledge differs from knowledge I have of my own mind in being inferential and depending on observed correlations between say speech and other actions of the person concerned. Self-knowledge remains direct and subjective; yet, what gives it content is not subjective experience. The thoughts we form and entertain are located conceptually in the world we inhabit and know we inhabit with other. Although another Subjects relation to the same world is a necessary condition to objective knowledge, this does not give rise to any priority to the subjective world of experience. In fact, in Davidson's position at least, the objective world and the intersubjective world are both equally essential and form the context to anything 'subjective'. What in fact provides for the foundation of the concept of truth and reality is the necessary degree of communatliy essential to the understanding of another individual's experiences. This is of course a matter of degree and reasonable approximation. What is however significant is that the clarity and effectiveness of *our* concepts grows with growth of understanding that of others. There are no limits therefore to how far dialogue can take us and no limits to our own progress thereby.

Neither Popper nor Davidson hold truth to be a one to one correspondence with facts and both would accept a basic Tarskian notion of truth as property of sentences. Davidson howerver, goes further and adds that it is a property not only of sentences but also of utterances of speech acts[41]. Truth therefore is a relation between a sentence, a person and a time. Thus to Davidson neither language nor thinking has conceptual priority. The two are linked in that each requires the other, to be understood. Experiences and beliefs only provide for applications of truth-conditions not their justification. The logic of truth is analysed to be independent of any experience of it. As an attribute of propositions, truth is a public, not a private affair. All knowledge then begins with experience but its truth lies elsewhere, constrained by the limits of language and conditions of progress.

Though truth of sentences remain related to linguistic demands, one is still able to, as Davidson says, 're-establish unmediated touch with familiar objects and events.'[42]. Truth relative to conceptual schemes which most often is the cause of disagreement, does not allow for dialogue further obstructing objective knowledge. Davidson's method is not designed to eliminate disagreement, but to allow for meaningful disagreement which must depend on some foundations in agreement. The agreement here would mean the minimum requirement for communication to be possible. For this, a maximum of self-consistency is to be attributed whereby we assume that most beliefs are held because it is thought to be true. The aim of interpretation is to be able to understand other people and we can choose the one that maximises truthfulness. And we choose the one that maximises truthfulness, by eliminating the ones that do not 'fit'. This again requires not merely the appropriate interaction but a 'critical' interaction. That is, interaction aimed towards some 'true' picture. Although Popper has written extensively on the 'myth of the framework', he too would agree that 'certain preconditions for a discussion such as a wish to get nearer to the truth and a willingness to share problems or understand the aim and problems of others'[43] are necessary. What is dangerous is to assert that a certain intellectual/theoretical framework *must* be shared amongst participants to ensure a fruitful discussion. Agreement can be smooth and pleasant but boring. Disagreement can be difficult and unpleasant but extremely fruitful. Popper would thus agree with Davidson that the gulf between different cultures is '*usually*' bridged and success depends largely on good-will. Davidson would

add the principle of charitable interpretation which also entails ascription of beliefs and desires, rationalising behaviour.

A Davidsonian framework assures one of an epistemologically equal world shared by all and attempts to make rational the sense of different perspectives with the help of the principle of Charity of Interpretation. 'If we can produce' says Davidson, 'a theory that reconciles Charity and the formal conditions for a theory, we have done all that could be done to ensure communication. Nothing more is possible, nothing more is needed.'[44] What is however needed is to be more demanding in truth-finding. To Popper, objective knowledge arises out of what can be done to the content of our thoughts through the 'critical' and 'argumentative' functions of language. What is done does not taint, but allows for critical comment. The products of human activity are neither imprisoned nor coloured by their source but available for active interaction. This goes beyond Davidson's 'interpersonal communication' where an additional requirement of 'criticisability' characterises all interaction which is aimed towards progress. Objective knowledge in terms of truth-seeking and as a function of language must arise therefore from interaction *and* criticisability.

As Christopher Hookway[45] comments, 'Interpretation rests upon a number of standards which are normative. We are constrained to 'look for true beliefs, to look for rationally coherent bodies of belief, to avoid ascribing inexplicable ignorance' and 'make an effort to look for reasonable desire and ... conherent patterns of *attitudes* and preferences...'. In a way, we need to rely only on our selves as the measuring instruments to explain how far the beliefs and capacities of others differ from our own and whethr intelligible patterns of language and action can be successfully attributed. The 'holistic constraint' upon interpretation which are normative in character can bring out a reasonably true picture by allowing the entire episode to be part of 'critical reasoning'. This might be difficult for some, but as Popper says, rational discussion must not be practised to while away our time. It cannot exist without real problems and without the search for objective truth. Somehow, truth is relative to our active ciritical dialogue and our discovery of conjectures and their refutations, rather than any insurmountable theoretical framework.[46] Dialogue can bring out the most favourable interpretation which can be subject to further criticism or alternate interpretations till the most consistent one stands, until further challenged. There

is an attempt to revive the Greek Critical Tradition where the fallibility of human knowledge is best represented in *Xenophanes* and whom Popper quotes quite extensively[47] - {*...But as for certain truth, no man has known it, Nor will he know it; neither of the gods, Nor yet of all things of which I speak. And even if by chance he were to utter, The final truth, he would himself not know it: For all is but a woven web of guesses*'}. This is the premise on which Popper's thesis of Critical Rationalism also rests.

To conclude, a combination of the Principle of Charity in Understanding and 'Criticisability' in attempts at truth-finding, can make up not only for the loss of subjective experience as the basis of objective knowledge claims, but also competing interpretations. Davidsonian and Popperian attempts to make experience significant to an objective epistemology without making it the final arbiter, does control and moderate the instinctive human desire to seek complete solutions and final answers. Just as we do not have a pretheoretical notion of reference in the Davidsonian frame-work we may not need to have a pre-normative notion of interpretation. It is in and through dialogue and critical discussion that the 'holistic constraints' emerge, regulating the direction towards the most consistent and reasonable interpretation of not only others but ourselves too. Although Truth may be an elusive destination the jouney must still be worth it.

## NOTES

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3. Musgrave Alan, '*Common-sense, Science and Scepticism*', Cambridge University Press, 1993, p. 63.n

4. Musgrave, *Common-sense*, p. 67.

5. Musgrave, *Common-sense*, p. 264.

6. Popper Karl, '*Realism and the Aim of Science*', Hutchinson and Co., 1983, p. 32.

7. Popper, *Realism*, p. 25. Also see, Popper Karl, '*The Logic of Scientific Discovery*', Hutchinson and Co., 6th impression (rev), 1972, section 29 Ed.

8. Popper Karl, '*Conjectures and Refutations - The Growth of Scientific knowledge*', Routledge, 5thed. (rev), 1989, p. 25.

9. Popper, *Objective Knowledge*, p. 121.

10. Popper, *Realism*, p. 25.

11. Popper, *Objective*, p. 109.

12. Popper, *Objective*, p. 66.

13. Popper, *Objective*, pp. 115-116.

14. Popper Karl, '*Knowledge and the Body-Mind problem : In defence of Interaction*, ed. MA Notturno, Routledge, 1994, p. 81.

15. Popper, *Knowledge*, p. 84.

16. Davidson Donald, '*Three Varieties of Knowledge*,' in "A J Ayer : Memorial Essays" ed. A Phillips Griffith, Royal Institute of Philosophy, Cambridge University press, 1991, p. 158.

17. Popper, *Knowledge*, p. 91.

18. Popper, *Knowledge*, p. 91.

19. Popper, *Knowledge*, p.90- 91.

20. Popper, *Objective Knowledge*, p. 71.

21. Popper, *Conjectures*, p. 47.

22. Schlick Morritz, '*The Problems of Philosophy in their Interconnection*' : Winter Semester Lectures, (1933-34), Ed. Mulder, Fox and Hegselmann, 1987, p. 92.

23. Schlick Morritz, '*The Foundation of Knowledge*', in "Logical Positivism" ed. AJ Ayer, The Free press, Glencoe, Illinois, 1959, p. 225.

24. Schlick, *Foundation*, p. 226.

25. Popper, *Realism*, p. 174.

26. Neurath Otto, '*Protocol Sentences*' in "Logical Positivism" ed. AJ Ayer, 1959.

27. Popper refers to Fried' *trilemma* which is the choice that has to be made between dogmatism, infinite regress and psychologism. - See Popper, *Logic*, p. 105.

28. Popper, *Logic*, p. 105.

29. Popper, *Logic*, p. 86.

30. Davidson, *Three Varieties*, p. 153.

31. Davidson, *Three Varieties*, p. 153.

32. Popper, *Knowledge*, p. 25.

33. Popper, *Knowledge*, p. 140.

34. Popper, *Knowledge*, p. 31.

35. Davidson, *Three Varieties*, p. 156.

36. Davidson, *Three Varieties*, p. 154.

37. Davidson Donald. '*Meaning, Truth and Evidence*' in "Perspectives on Quine" ed. Robert Barrett and Roger Gibson, Basil Blackwell ltd, 1990, p. 75.

38. Davidson Donald , '*Inquiries into Truth and Interpretation*', Clarendon Press, 1984, p. 230.

39. Davidson, *Three Varieties*, p. 158.

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41. Davidson, *Inquiries*, p. 34.

42. Davidson, *Inquiries*, p. 197.

43. Popper Karl, '*The Myth of Framework-In defence of Science and Rationality*', ed. MA Notturno, Routledge, 1994, p. 35.

44. Davidson, *Inquiries*, p. 195.

45. Hookway Christopher, '*Quine*', Standford University Press, 1988, p. 172.

46. Popper, *Realism*, p. 156.

47. Popper, *Myth of a Framework*, p. 39.