

Russell on Language Acquisition

Tamami KIMIHARA

Department of Foreign Languages

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This paper is intended to be another approach to Russell's philosophy of language. After having abandoned his philosophy of 'logical atomism', his attention turned to 'semantic' problems. This linguistic attitude, beginning in his 'neutral monistic' period, is to last throughout his later works. His interest in language turns out to be inextricably bound up with the problems of language acquisition. It is these aspects of his linguistic philosophy that I want here to be concerned with. The problems will lead to the familiar opposition between empiricist and rationalist approaches and the paper concludes with a hope that Russell might be regarded as a modern precursor in the direction of synthesis.

0. Among Russell's philosophical considerations on language the theories of descriptions and proper names belong to the period of 'logical atomism.' After having abandoned the 'atomistic' philosophy his attention turned to the meaning of the word and to the relationship between the sentence and its truth. It is these aspects of his linguistic philosophy that I want here to be concerned with. As usual, my aim is linguistic (or semantic) rather than epistemological; in particular, my attention will be focussed on his view of language acquisition.

1. During 1918 Russell's view as to mental event underwent a very important change: he explicitly abandoned the 'sense-data' on which his theory of logically proper names was based and adopted the 'neutral monistic' theory of mind. And his theory of language acquisition may be said to stem from this period.

The major treatise on neutral monism is, of course, Russell (1921), whose Lecture X is entitled 'words and meaning.' Russell (1927), though a rather popular work, is interesting in that he tries to apply behaviouristic principles to the problems of language analysis. Neutral monism is not particularly relevant to the subjects of Russell (1940), which he professes to have written after abandoning monism, but the doctrine is apparently presupposed at several crucial points. The same may be true of his last major work, Russell

(1948): central assumptions of the doctrine is present as far as his linguistic approaches are concerned. Linguistically his view on language, after the theories of descriptions and proper names, might be said to have undergone little change throughout all his later works.

2. Could we not say that in a sense the motive for neutral monism is linguistic? The doctrine denies, after William James, the relational character of sensations (i.e. the relation between the subject and the object). The subject may be deemed as a logical fiction: it is introduced, not because observation reveals it, but it is linguistically convenient and apparently demanded by grammar (notably, of Indo-European languages). Once we admit that sensations are occurrences which are not essentially relational, a mind and a piece of matter can both be regarded as logical constructions formed out of materials not virtually different. "A sensation may be grouped with other occurrences by a memory-chain, in which case it becomes part of a mind; or it may be grouped with its causal antecedents, in which case it appears as part of physical world." Russell was glad when he realized that abandonment of the 'subject' made it possible to accept an immense simplification and to regard the traditional problem of the relation of mind and matter as definitively solved.¹⁾

1) Russell (1959), p. 139

3. It might be going too far to say, as Jager does, that behaviourism is the handmaiden of neutral monism.²⁾ His proclivity towards behaviouristic approaches, however, is apparent through the period of neutral monism.

In Russell (1927), he pursues the plan of proceeding as far as possible on behaviourist principles. There he tries to examine Man from without, and, in this viewpoint, he thinks that 'meaning' can only be understood if we treat language as a bodily habit. This leads him to the view that he should regard the theory of language as one of the strong points in favour of behaviourism.³⁾ At least, "the use of single words, as opposed to sentences, is wholly explicable by the principles which apply to animals in mazes."⁴⁾ Thus he sums up the behaviouristic theory of meaning in a simple schema based upon the conditioned reflexes. This simple schema, as our experience increases in complexity, he asserts, becomes obscured and overlaid, but remains fundamentally true.

4. In his theory of language acquisition, so-called 'object-words' must first be learned. They are to be given 'ostensive-definitions', which may be defined as 'any process by which a person is taught to understand a word otherwise than by the use of other words'.⁵⁾ The process may be explained behaviouristically by the familiar notion of conditioned reflex. To use a mentalistic term, the word here comes to be regarded as a sign of its referent by the law of association. We may say, then, that a person understands a word which he hears if the effects of the word are the same as those of what it is said to 'mean'.⁶⁾ This habit thus acquired constitutes what he calls 'passive' understanding of the word.⁷⁾ Passive understanding comes earlier than active understanding which consists of uttering the word in the presence of a stimulus and is not confined to human beings.

Russell considers the different kinds of words that

are commonly learnt by means of ostensive definitions.⁸⁾ This is meant, he asserts, to be a logical form of the grammatical doctrine of parts of speech.

As we have seen in my previous paper,⁹⁾ words which can be truly given ostensive definitions will be logically proper names. Now that he has passed the stage of 'logical atomism', he will allow ordinary proper names to be given ostensive definitions. Strictly, of course, we should distinguish ordinary names which stand for existent (or once existent) entities (say, 'Socrates') from 'fictitious' names (e.g. 'Hamlet'); the former are given ostensive definitions, while the latter are abbreviated descriptions.

Common nouns as names of species are mostly learned ostensively. A species of this sort defines a set to which belong separate individuals having some recognizable degree of likeness to each other. Thus the word 'dog' may easily be learned ostensively by most children, but the word 'animal' may be more difficult to learn; ostensive definitions tend to be more difficult as we go up higher the 'ladder of abstraction'. Ordinary names of things classified as material nouns ('milk') are apt to be learned ostensively. As science advances, material nouns may be regarded as collections of common nouns, but this is linguistically irrelevant.

Words standing for qualities ('red') can also be acquired ostensively, but words for less common qualities may be derived by descriptions. On behaviouristic lines there is no important difference between proper names and 'abstract' or 'generic' words, and between words for qualities. At first sight this might mean that we can ignore the distinction between particulars and universals. On second thought, however, it will turn out that the word itself, though seemingly a particular, is a universal. A word, as a linguistic symbol, is by definition a universal. This is the first thing Russell cites¹⁰⁾ which strikes him as exceedingly obvious but as having been ignored by

2) Jagger (1972), p. 342

3) Russell (1927), p. 46

4) *ibid.*, p. 54

5) Russell (1948), p. 76

6) Russell (1927), p. 52

7) Russell (1959), p. 146

8) Russell (1948), pp. 83 ff.

9) Kimihira (1974)

previous writers on language. A word is a universal ('type') of which the instances are the occasion on which an instance ('token') of the word is spoken or heard or written or read.¹¹⁾

To return to the main subject, many words for universal qualities are obviously acquired ostensively. Verbs, which indicate mostly relations between nouns ('arguments'), are generally learnt ostensively. Other words for relations (adverbs such as 'up', 'down', 'before', 'after',) are usually learnt ostensively. Among 'ego-centric particulars' differing in meaning according to the speaker and his position in space-time, simple ones may be acquired ostensively (e.g. 'I', 'now'). As is pointed out in my previous paper,¹²⁾ all ego-centric words can be defined in terms of 'this' (e.g.: 'I' is defined as the biography to which 'this' belongs). However, notice that it is one thing to define a word, and that it is another to acquire it. 'This' belongs to the 'minimum vocabulary' of English; the minimum vocabulary is a theoretical construct.

Behaviouristically definable words are not limited to the words belonging to the public world. Private experiences such as pain or memory can be defined ostensively: what one is feeling may be shown in behaviour: for example, there is a correlation between pain and tears. There are no definite limits to what can be learnt by ostensive definitions; it depends upon the child's experience and capacity how far this method of acquiring words is feasible.

Russell's theory of ostensive definition is evidently the most primitive theory of acquisition of the most primitive words. He distinguishes the elementary uses of a word as indicative (or, demonstrative), imperative, and interrogative,¹³⁾ and observes that the indicative use must come first in the acquisition of language since the association of a word and its referent can only be created by the simultaneous presence of both.

There are also the narrative and imaginative uses of words. These uses are much more difficult to ac-

count for on behaviouristic lines. Mentalistic notions, such as 'images', are necessary; he has to regard the effects of a word as his 'mnemonic phenomena'.¹⁴⁾ Thus, he says,¹⁵⁾ we must maintain our distinction: words used demonstratively describe and are intended to lead to sensations, while the same words used in narrative describe and are only intended to lead to images... These two ways of using words[ie. the way of memory and the way of imagination], including their occurrence in inner speech, may be spoken of together as the use of words in 'thinking'. This use of words in thinking depends, at least in its origin, upon images, and cannot be fully dealt with on behaviourist lines.

We may conclude, then, that the problems of word acquisition can be dealt with 'from without' (i.e. behaviouristically) only when we discuss words in connection with an immediate sensible stimulus closely connected with what they mean. Russell emphasizes the need of considering memory and imagination in mentalistic terms when we come to the other uses of words.

5. The acquisition of logical words such as quantifiers and connectives (i.e. what grammarians call 'function words') cannot be so easily explained ostensively; they should perhaps be defined in the contexts of sentences. And sentences introduce new considerations in the theory of language acquisition and are not quite easily explained on behaviouristic lines.

"I am persuaded," writes Russell,¹⁶⁾ "that speech is learnt by the Watsonian method, so long as it is confined to single words: often the trial and error, in later stages, proceeds *sotto voce*, but it takes place overtly at first, and in some children until their speech is quite correct. The speaking of sentences, however, is already more difficult to explain without bringing in the apprehension of wholes which is the thing upon which *Gestaltpsychologie* lays stress."

At the first stage of acquiring and using sen-

10) Russell(1959), p. 145

11) In Russell(1921), he says, "In language there is no direct way of designating one of the ultimate brief existents (i.e. particulars) that go to make up the collections we call things or persons.

12) Kimihira (1974)

13) Russell (1948), p. 85

14) Russell (1921)

15) *ibid.*, p. 202

16) Russell (1927), p. 44

tences, children repeat unchangedly sentences they have heard used by others. Here no new principle is involved in language learning. "What does raise a new principle is the power of putting together known words into a sentence which has never been heard, but which expresses correctly what the infant wishes to convey. This involves the power to manipulate form and structure."¹⁷⁾ Russell here might be said to be referring to what Chomsky calls 'creative aspect of language use'¹⁸⁾

What Russell terms 'perception of form' is needed before sentences containing relational words (sentences themselves are relational) can be used correctly. In terms of stimulus-response, it involves a definite reaction to a stimulus which is a form. Thus it may be said that, when a person can use sentences correctly, that is a proof of sensitiveness to formal or relational stimuli.¹⁹⁾

Sentences are examples of what Russell calls 'structure': the manner in which the parts of a whole are interrelated constitutes the 'structure' of the whole. Sentences may be classified by their structures: for example, 'dyadic-relation' sentences have the same structure, $F(x,y)$, while the 'subject-predicate' or 'monadic' sentences have the structure, $F(x)$. There are in theory an infinite number of structures that sentences may have.²⁰⁾ Thus sentence acquisition, for Russell, is essentially the structure recognition.

6. Russell's concern with sentences have led him primarily to the theory of truth which is the main theme of Russell (1940). This is fundamentally a correspondence theory that, when a sentence or belief is true, it is so in virtue of some relation to one or more facts; but the relation is not always simple, and varies both to the structure of the sentence concerned and according to the relation of what is asserted to experience.²¹⁾

Russell does not particularly try to probe into how sentences are acquired. Perhaps his theory of sentence acquisition follows the empiricist theory of Anglo-American tradition. As we have seen, he no longer

asserts that behaviouristic approaches are sufficient for the acquisition of sentence structures. It may safely be said that Russell's view of the relation between language and the world (i.e. his 'semantic' theory) centres around the theory of word acquisition. On the contrary, in the semantics in generative grammar, language is considered to be related to the world at the sentence level.

What is fundamentally innovative in the Chomskyan theory of language acquisition may be said to be at the level of sentences. Rationalists would not deny the significant role that learning (e.g. 'conditioned reflex') plays in word-referent association; empiricists would concede that the structure of humans places certain constraints on the kind of linguistic systems that they can master.

The traditional 'association principle' on language acquisition by British empiricists may be regarded in essence as the same as the modern doctrine of the 'conditioned reflex'. The only important difference is that Pavlov's theory is physiological, whereas the theory of ideas is purely mental. The notion of 'conditioned reflex' is therefore capable of a materialistic explanation, such as is given to it by behaviourists, while the empiricist theory leads to an associationist psychology.

Excepting behaviourists, traditional empiricists try to explain the word-referent relation by asserting that, though the relation is conventional rather than natural, it can be explained in terms of causation and resemblance. Though words do not themselves resemble their referents and are not directly causally connected to them, each word is causally connected with a memory image and the image does resemble the referents of the words.²²⁾ This explanation of the word-referent relationship may be accepted by some rationalists.

7. The central pillar of the Chomskyan language-acquisition model may be summed up as the insistence upon the innatism and the species-specificity of nat-

17) *ibid.*, p. 58

18) Chomsky (1966), pp. 3 ff.

19) Russell (1927), p. 59

20) Russell (1948), p. 269

21) Russell (1959), p. 189

22) Foder, Bever, Garrett (1974), pp. 152

ural language. From this viewpoint, Russell's is evidently empiricist.

Traditional empiricists assert in essence that verbal behaviour of humans differs in complexity but not in kind from learned behaviour of animals. Thus Russell says in retrospect²³⁾ that it seemed to him desirable to emphasize the continuity between animal and human minds. Of course he was aware of the danger of intellectualist interpretations of animal behaviour, but he thought that the methods adopted in interpreting animal behaviour have much more scope than is usually admitted in interpreting what in humans would be regarded as mental phenomena.

In line with this view, many psychologists have attempted to train animals to talk, thereby demonstrating the essential homogeneity of human-language learning with infrahuman learning of motor skill.²⁴⁾ These attempts, however, have apparently been unsuccessful: hence the thesis that language seems to be peculiar to our species.

As for innatism, we cannot find Russell saying anything explicitly for or against the rationalist assumption that language is innately specified almost completely, with linguistic experience serving chiefly to activate the genetically specified system.

8. Quine, the contemporary protagonist of the empiricist approach to language, admits²⁵⁾ that learning by ostension is learning by simple induction, and that this method is notoriously incapable of carrying us far in language. The admission leads him to what he has called analytical hypotheses, where he postulates the innate system of properties (e.g. 'the quality space'). In addition to this, the as yet unknown structures, he says, are needed to get the child over this great difficulty that lies beyond ostension, or induction. Thus he concludes that "if Chomsky's antiempiricism or antibehaviorism says merely that conditioning is insufficient to explain language-learning, then the doctrine is of a piece with my doctrine of the indeterminacy

of translation."²⁶⁾ Here his behaviourism becomes the term by which he refers only to the insistence upon describing all phenomena ultimately in terms of external observation. Chomsky regards him as not only abandoning behaviourism as a substantive doctrine but also as approaching Russell's conclusion that what can be retained of empiricism is only the condition that the verifiable consequences of the principles that constitute our knowledge are such as experience will confirm.²⁷⁾

9. Chomsky is very dubious of the Russellian theory of 'ostensive definitions'. This seems to be interesting because it may afford a further support for the innateness of language. So far many evidences have been presented to show that all languages may be structurally similar to one another. From the claim that language is innately specified, it follows that all human languages may fall within a fairly narrow range of structural possibilities; hence the notion of 'linguistic universals'.

Linguistic universals so far discovered happen mostly to be at the sentence level: limitation on word order, the existence of transformational rules, for example. Of course, phonologically universal rules have been impressively pointed out. It might safely be said, however, that it is rather difficult to find out universals at the word level; it is here where we are struck by the marked differences between languages. And Chomsky's criticism of ostensive definitions may be interpreted as a challenge to this problem.

Chomsky suspects that it is at best misleading to claim that the words we understand derive their meanings from our experiences.²⁸⁾ Under normal conditions, he writes,²⁹⁾ we learn words by a limited exposure to their use. Somehow, our brief and personal and limited contacts with the world suffice for us to determine what words mean. Thus, even at the word level, he postulates innate universals, saying³⁰⁾ that rather rich assumptions about the world of fact and

23) Russell (1959), p. 128

24) Fodor, Bever, Garrett (1974), pp. 440 ff.

25) Quine (1967), p. 97 in Hook (ed.) (1967)

26) *Ibid.*

27) Chomsky (1971), p. 6

28) Chomsky (1971), p. 17

29) 30) *Ibid.*, p. 16

the interconnections of concepts come into play in placing the item properly in the system of language. Linguistic universals at the lexical level will correspond most fittingly to what rationalists called 'innate ideas'.

No doubt some counterargument comes easily to mind: is it not at the lexical level that 'rich assumptions about the world and the interconnections of concepts' (i.e. our innate ideas) differ from one language to another so glaringly? To this Chomsky would reply³⁰⁾ that what humans are initially endowed with are conditions on the form and organization of language and that they could construct a specific system of interconnections among concepts and conditions of use and reference, on the basis of scanty evidence. Here it appears that innate semantic universals are considered at a level far deeper than at an apparent surface level.

10. First Russell approaches, as we have seen, the problems of language acquisition 'from without'; words are ostensibly defined on behaviouristic lines as far as possible. And then, finding that stimulus-response analysis of language acquisition will not get us very far, he turns to mentalistic analyses in the British empiricist tradition modified somewhat by his 'neutral monistic' outlook on mind and matter. This again, however, turns out to be inadequate, as far as rationalist linguistic claims are concerned. Chomsky finds in Russell (1948) the assertions far transcending the traditional empiricist approaches and paraphrases that our mental constitution permits us to arrive at knowledge of the world insofar as our innate capacity to create theories happens to match some aspect of the

structure of the world.³¹⁾

Knowledge of language, writes Chomsky,³²⁾ results from the interplay of initially given structures of mind, maturational processes, and interaction with the environment. In this sense, we may make an eclectic synthesis of both empiricist and rationalist theories of language acquisition. And it is, I might venture to say, Russell who may be claimed to be a modern precursor in this direction.

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30) *Ibid.*, p. 18

31) *Ibid.*, p. 20

32) *Ibid.*, p. 23