

再び文法の心的実在の問題について

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1 はじめに

文法の心的実在 (psychological reality) の問題——言語学者が作成する文法が母語話者 (native speaker) が大脳の中に内在化して持っている文法と対応するかどうかの問題——は、生成文法批判の際に必ず出てくる問題である。¹ Chomsky の答えはいつも同じなのであるが、生成文法理論に批判的な学者はなかなか納得しないようである。私も、「文法の心的実在の問題について」²で、この問題を概略的に解説したが、今回、再び、この問題を取り上げ、もうすこし詳しく検討してみようと思う。議論の展開の必要上、拙稿、「文法の心的実在の問題について」や「言語学と自然科学——科学哲学的観点からみた生成文法の方法論——」³や「科学史的観点からみた生成文法理論の変遷」⁴と内容的に一部重複する部分があるが、できるだけ、それらの論文ではふれなかった事柄を取り上げて論じていくつもりである。

2 生成文法の目標と文法の心的実在の問題

文法の心的実在の問題は、生成文法理論だけにかかわる問題ではない。どのような理論的立場をとろうが、考えなくてはならない問題である。ただ問題への態度が異なるのである。Linell によれば、文法の心的実在性に対する態度には四つあるという。⁵

第1番目の態度は、Radical physicalism と呼ばれるもので、言語には心理的に特徴づけられるようなものはないという立場である。

Radical physicalism : One claims that there is nothing which can

be meaningfully characterized as psychological which cannot be more adequately described as physical or physiological. Therefore, talking about psychological reality is nonsense. Moreover, language should be described solely in terms of overt (or nonovert) physical or physiological *events*.⁶

第2番目の態度は、Pessimism と呼ばれるもので、母語話者がなんらかの文法を所有していることは認めるが、それを発見することは言語学者には不可能であり、言語学者は構造的な方法だけで言語研究をしなければならないという立場である。

Pessimism: Speakers are assumed to possess knowledge of their language, i. e. a grammar with a more or less specific organization which enables them to use their language correctly, but it is considered to be an unattainable goal to find out what properties these psychological structures have. Therefore, linguists should avoid these problems and do 'autonomous linguistics', i. e. establish linguistic generalizations by purely structural methods. (Language is seen as a system of social norms.)⁷

第3番目の態度は、Moderate realism と呼ばれるもので、文法の心的実在性を認め、それは言語の構造のみでなく、言語学以外の多様な側面から追求しなければならないという立場である。

Moderate realism. Speakers are assumed to have organized knowledge of their language in some specific ways. To attain explanatory adequacy, linguistic theory must strive for realism. Biological, psychological and social realities must be taken into account. . . . However, an investigation of psychological realities cannot be pursued with purely linguistic-structural methods. Instead, many types of 'external' evidence must be exploited

(whereby the relevance and reliability of this evidence must be critically examined). Also, one needs plausible 'metaphysical' assumptions about the nature of language, language acquisition and use, the properties of the mind, etc. The latter should be an obvious point, though the limited interest in the philosophical foundations of linguistic metatheory shows that it is not often considered to be so.⁸

第4番目の態度は、Naive optimism と呼ばれるもので、文法の心的実在性を認め、しかも、それを形式的な言語学の方法のみで追求しようという立場であり、Chomsky はこの立場にある。

Naive optimism : Speakers are assumed to have highly integrated and interindividually similar 'mental grammars'. Since many irrelevant factors intervene in performance the best way to determine mental grammars would then be to apply formal-linguistic methods in trying to investigate general and abstract conditions on linguistic structures.⁹

Chomsky が文法の心的実在性を主張しているとみなされるのは、生成文法の目標と密接な関係がある。生成文法理論の枠組みで文法を提案する場合、その文法は絶対に心的に実在しなければならないのである。これは、生成文法の目標からくる必然である。¹⁰

生成文法の目標は、人間が内在化して所有している言語能力 (linguistic competence), すなわち, internalized knowledge of language のモデルを作成することである。Chomsky によると、この人間が言語能力を持っていることは、ある心的状態にあることであり、その心的状態にあるというのは、規則と原理/原則の体系から成るある心的構造 ("a certain mental structure consisting of a system of rules and principles that generate and relate mental representations of various types")¹¹ を持っていることで

ある。この “a certain mental structure consisting of a system of rules and principles” がどのようなものかを解明し、そのモデルを作成することが言語学者の仕事なのである。

このことを現在行なわれている原理／原則とパラメータ理論 (principles-and-parameters approach) で説明すると次のようになる。人間は、生得的に普遍文法 (Universal Grammar 以下, UG と略す) というものを持っている。生得的というのであるから、この UG は, “genetically determined initial state of the mind, common to the species”¹² である。この UG は、規則の下位部門 (subcomponents of the rule system)¹³ と原理／原則の下位体系 (subsystems of principles)¹⁴ から成っている。UG のこれらの下位体系にはパラメータ (parameter) があり、言語習得は、これらのパラメータのスイッチの設定とみなされている。例えば、日本語は動詞が文末にくるから、日本語を習得する子供は、日本語を習得する過程で、動詞文末というパラメータのスイッチをいれることになる。¹⁵ こうして各種のパラメータのスイッチを設定し終わると、心 (mind) は安定状態 (steady state) に達し、ある言語を習得したことになる。パラメータを設定し終わった文法は、core grammar と呼ばれる。¹⁶

パラメータのスイッチを設定し終わったこの安定状態に達した “a certain mental structure consisting of a system of rules and principles” が、各個人が内在化して所有している言語能力であり、この言語能力のモデルを作成するのが生成文法の目標であるから、生成文法学者が作成する文法は絶対に心的に実在していなければならないことになる。Chomsky 自身は、自分の作る文法が心的に実在しているとは明言していないが、生成文法の目標からして、Chomsky が文法の心的実在性を主張していることになるのは当然であろうし、また、文法 (grammar) という用語を、言語学者が作成した文法という意味と、母話者が内在化して所有している文法という二つの意味に、曖昧なままに使用することに対して、Chomsky が何も異議をとんえ

ていないことから、Chomsky が文法の心的実在性を主張していることになるのは明らかである。Chomsky は、次のように述べている。

We must be careful to distinguish the grammar, regarded as a structure postulated in the mind, from the linguist's grammar, which is an explicit articulated theory that attempts to express precisely the rules and principles of the grammar in the mind of the ideal speaker-hearer. The linguist's grammar is a scientific theory, correct insofar as it corresponds to the internally represented grammar. (Exactly what is meant by the notion "corresponds" in the case of the abstract study of a physical system is a complex question, not unique to this enterprise.) It is common to use the term "grammar" with systematic ambiguity, letting the context determine whether it refers to the internalized grammar or to the linguist's theory. The practice is unobjectionable but may lead to confusion unless care is taken.¹⁷

このように生成文法は、文法の心的実在性を主張することになるのであるが、文法の心的実在性に対してすべての生成文法学者が同じような立場をとっているわけではない。Botha によれば、大きく分けて、強い立場と弱い立場の二つがあるという。¹⁸ 強い立場は次のように説明されている。

A grammar gives a STRONG REPRESENTATION of the structure of the linguistic competence if there is isomorphism between the grammar and the linguistic competence. This happens when for each theoretical concept, rule and (sub)component of the grammar, a corresponding independent mental mechanism or structural component of the linguistic competence is to be found.

. . . .

The kind of isomorphism between the grammar and the linguistic competence which is assumed by the strong form of representation is called RULE-FOR-RULE ISOMORPHISM or MICRO-

ISOMORPHISM.¹⁹

Botha によれば、1960年代半ばと後半にこのような強い立場が主張されたが、研究がすすむにつれ、このような強い立場はとれないことがわかり、現在の生成文法学者は、もっと弱い立場をとっているという。²⁰ この弱い立場は次のように説明されている。

Currently, generative grammarians provide for, among others, the following weaker form of representation : a grammar gives a WEAKER REPRESENTATION of the structure of the linguistic competence if the components or types of rules of the grammar correspond to independent mental mechanisms or structures within the linguistic competence. This weaker form of representation assumes a relation of SEMI-ISOMORPHISM between the grammar and the linguistic competence.²¹

現在の生成文法学者は弱い立場をとっているといっても、これは、現在の研究レベルからそうならざるをえないからであって、生成文法の本래の目標からいうと、生成文法学者が作成する文法は、母語話者の言語能力と完全に一対一に対応していなければならないものである。

3 文法の心的実在性の保証

生成文法の目標からして、必然的に、言語学者が作成する文法は心的実在性を持たなければならない、つまり、母語話者が内在化して持っている文法（ある心的状態）と対応しなければならないのであるが、では、言語学者が作成する文法が心的実在性を持つという保証はどこにあるのであろうか。

この疑問に対する Chomsky の答えは首尾一貫している。Chomsky は、母語話者が内在化している文法を mental organ²² と呼び、生物の一つの器官にたとえており、言語学は生物学と同じであるとみなしている。生物学と

同じであれば、当然、言語学は生物学と同じ方法で研究すればよいことになる。²³ つまり、言語学は自然科学であり、自然科学と同じ方法で研究すればよいのである。そして、自然科学では、理論の实在性は問題にならないから、言語学でも文法の心的实在性は問題にならないのである。²⁴ Chomsky は、“There is no reason to adopt some different standpoint when the object under investigation is the human being.”²⁵ と言い切っている。²⁶

4 Chomsky の考え方の問題点

文法の心的实在の問題に対する Chomsky の考え方は首尾一貫しており、彼はそれを変更しようとはしないが、その考え方にはいくつかの問題点がある。

第1番目の問題点は、文法を心的器官 (mental organ) にたとえる論法である。上で述べたように、Chomsky は、文法を心的器官と呼び、生物学者と同じようにこの器官を研究すればよいと言っている。しかし、これはあくまでたとえである。眼や耳は具体的な体の一部であるが、母語話者が内在化して持っている文法は、ある心的状態をさしているものであり、抽象的なものである。この心的状態を具体的な眼や耳と同じ器官にたとえたからといって、具体的な器官と同じように研究できるという論理は奇妙である。Botha も、mental computation とか mental representation とかいう Chomsky の表現を、“As Chomsky uses the expressions ‘computation’ and ‘representation’ within this context, they are at best metaphors, at worst completely contentless.”²⁷ と批判している。そして、この文に対して、次のような注を付けている。

Also in his paper ‘A theory of core grammar’ (1978b : 13, 16, 17, 22) Chomsky uses the expressions ‘mental computation(s)’ and ‘mental representations’ without attempting to specify what non-figurative meaning ‘computation’ and ‘representaion’ may have in

this context. The (illusory) nature of Chomsky's mental entities is analyzed in greater depth in sections 2 and 4 of Botha to appear c. ²⁸

第2番目の問題点は、拙稿「文法の心的実在の問題について」でもふれたように、人間の心 (mind) を自然科学の方法で研究できるかどうかである。²⁹ Chomsky は、"There is no reason to adopt [some different standpoint when the object under investigation is the human being." と言っているが、自然科学の方法論が人間の心の研究にそのままあてはまるかどうか疑問が起きる。例えば、自然科学では、理論を評価する基準として単純性の原理があるが、その単純性の基準を言語研究にあてはめることができるのであろうか。³⁰ 単純性の基準が言語研究にあてはまらない例として、Linell は言語の lexicon をあげている。生成文法学者が提案する言語の lexicon は、単純性の基準に基づいて作成され、lexical entries は単純・簡潔に、そして、余剰的情報は、余剰規則でとらえられるようになってはいるが、Linell によれば、母語話者が持っている lexicon は余剰的で、単純性の基準はそのままあてはまらないのだという。

It is rather obvious that the generative assumptions of the economical functioning of the mind are speculative and aprioristic. How, for example, do we know what is considered as simple or economical by the memory or the brain? Which way of storing information is least burdening for the brain? Indeed, why must the brain economize at all? Is it not large enough to admit of 'uneconomical storage'? Such problems are never approached in generative discussions where it is simply taken for granted that it is more simple and economical to store a morpheme-invariant form plus information about what happens to this form in various contexts (rules for deriving different phonetic forms) than to store concrete forms (phonetic plans) plus information about their various

interrelations. That is, it is supposed, e.g., that /divi:n/ plus rules (cf. § 1.4.1) is more simple than /divain/, /divin(iti)/ plus rules. The claim is usually based on some way of counting the feature specifications needed in the lexicon and the rule system in the different solutions (Halle 1959; McCawley 1968 a : 47—52). But there is no empirical evidence that gross feature countings—even if these could be performed in a consistent and non-arbitrary manner, which seems unlikely—are a realistic simplicity measure of memory storage. Even if ‘brute’ feature counting is supplemented with some refinements in terms of markedness considerations (cf. Chomsky & Halle 1968 : ch. 9 and other references given, p. 73, fn. 4) it is highly dubious that such quasi-quantitative measures are really decisive. It seems quite reasonable to assume that also qualitative properties of the stored information are essential. And even more importantly, ‘economy’ is not just a matter of *storage*; the information must also be easily *retrieved* (cf. Derwing 1973 : 154, fn. 2). From a functional point-of-view, a redundant lexicon, in which there are many paths of associations between items and in which, consequently, information can be retrieved in many ways, would be more useful than a non-redundant one. Indeed, there is evidence that speakers can search for information in the memory by several parallel strategies. Furthermore, if word forms are stored, rather than abstract morphemes, we would benefit from the concreteness in that the amount of computing necessary in both speech production and speech recognition would, most probably, be drastically diminished (cf. § 12.3.3). And, in fact, modern theories of the human memory do not assume that long-term memory storage is subject to any limitations in terms of quantity. The capacity of the brain to store large numbers of items seems very great, if not unlimited. There should be no problems as far as word forms as lexical items are concerned (cf. also Sampson 1970 : 620; Braine 1974 : 297). Thus, contrary

to OGPh claims, there is every reason to suppose that abstract non-redundant storing methods would be quite 'expensive'.³¹

第3番目の問題点は、科学における実在論の議論に対する Chomsky の誤解である。Chomsky は、自然科学（物理学）では、理論の実在性がどうのこうのということは問題にならないと言っているが、³² これは明らかに誤解である。科学哲学の世界では科学における実在論の議論は現在でも行なわれている。Philip Carr は、Chomsky のこの誤解について次のように述べている。

If a realist philosophy of linguistics is combined with this objectivist ontology, it is interesting to ask in what respects it is distinct from Chomsky's version of realism, with its psychologicistic ontology. That Chomsky would describe himself as a realist is self-evident, but what is interesting is the question of what this amounts to for Chomsky. He frequently cites theory construction in physics as the model upon which theories in linguistics are tested and developed, and assumes that realism is the norm in the philosophy of physics. Thus, arguing against the adoption of an instrumentalist philosophy of linguistics, he says :

to say that linguistics is the study of introspective judgements would be like saying that physics is the study of meter readings, photographs and so on, but nobody says that. Actually people did say that during the heyday of operationalism, but that did not have a pernicious effect on physics, because even the people who said it did not really believe it at any relevant level, and they did their work anyhow. At any rate, it did not make any sense, and was rapidly discarded. (Chomsky 1982 : 33)³³

As the discussions of the instrumentalist tradition in the phi-

philosophy of science in 1.2 shows, this misrepresents both the content and the history of instrumentalism. Not only was such a philosophy of science not ‘rapidly discarded’, it is still alive and well (see van Fraassen 1980 for a recent formulation of the principal instrumentalist arguments). Thus, Chomsky’s idea that physics enjoys a universally accepted realist interpretation is quite mistaken. So too is his claim that instrumentalism ‘does not make any sense’: as we saw in 2.1, instrumentalist arguments against realism are rather powerful and must be met by realists.³⁴

科学哲学において、実在論と反実在論の論争が続いていることは、科学哲学者の Ronald N. Giere の次の言葉からも明らかであろう。

The philosophical fortunes of scientific realism have risen and fallen with dramatic rapidity during the past twenty years. In 1965 it had few defenders. By 1975 it was accepted by many philosophers of science. By 1985 it was again on the defensive. Yet there has been some progress, if only because the range of alternative positions has been extended and clarified (Leplin 1984; Churchland and Hooker 1985).³⁵

ここで Leplin 1984 とあるのは、Jarrett Leplin (ed.), *Scientific Realism*³⁶ のことで、この本は、1982年に開かれた科学実在論に関する会議で発表された論文と、そこでは発表されなかったが科学実在論に関する論文を集めた論文集である。また、Churchland and Hooker 1985 とあるのは、Paul M. Churchland and Clifford A. Hooker (eds.), *Images of Science: Essays on Realism and Empiricism, with a Reply from Bas C. van Fraassen*³⁷ のことで、この本は、Bas C. van Fraassen の *The Scientific Image*³⁸ に対する反論及びそれらに対する van Fraassen の回答を集めた論文集である。このように、科学哲学の世界では、科学実在論をめぐる論争は続いているのである。

Chomsky が言語学は自然科学であり、言語学は自然科学の方法論で研究すればよいと言っている以上、そして、Chomsky が科学における实在論の議論を誤解しているからなおさら、科学の世界で理論や理論的構築物の实在性がどのように考えられているかをみてるのは、文法の心的実在の問題を考えるうえできわめて重要である。次節では、科学哲学の世界で实在論がどのように議論されているかをみてみよう。

5 科学哲学における实在論の議論

拙稿、「文法の心的実在の問題について」でも紹介したように、科学の世界でも理論や理論的構築物の实在性に関しては、实在主義と反实在主義（道具主義）の二つの立場がある。³⁹

Jarrett Leplin によると、实在論者は多数派であり、いろいろな考え方の人がいるが、科学は進歩しているのだという確信はどの实在論者も持っているという。

Like the Equal Rights Movement, scientific realism is a majority position whose advocates are so divided as to appear a minority. . . . What realists do share in common are the convictions that scientific change is, on balance, progressive and that science makes possible knowledge of the world beyond its accessible, empirical manifestations. Unless progress is understood in purely pragmatic terms and knowledge is held not to require truth by correspondence, antirealists will reject these convictions.⁴⁰

反实在論者が实在論に反対するのは、主に次の二点に関してである。一つは科学の歴史における理論の不連続性である。科学の歴史をふりかえてみると、ある時代に正しいとされていた理論も次の時代にはまちがいとみなされ、破棄され、新しい理論に取って代られるが、その新しい理論もまた時代が変わると破棄されるということを繰り返してきたことがわかる。現在正し

いとされている理論も将来、破棄されるかもしれない。従って、理論の実在性を主張することはできないというものである。Leplin は次のように説明している。

One problem is historical. Whatever continuity may be discerned in the growth of empirical knowledge, theoretical science has been radically discontinuous. Scientific views about the ultimate structure and lawlike organization of the world have frequently been overthrown and replaced by incompatible views. Much of this discarded science was, for an appreciable time, eminently successful by the standards we employ in assessing current science. The inference seems inescapable that the evidence available to support current science is by nature unreliable and systematically underdetermines what ought to be believed about the world beyond our experiences. Scientific theories, however well secured by observation and experiment, are inevitably fallible. Nor is there any basis for expecting the future evolution of scientific standards and methods to provide a more secure foundation for scientific knowledge. For methodological developments that have occurred thus far, whatever improvements they have generated at the level of human interaction with nature, have failed utterly to resolve the basic dilemma of the underdetermination of theory.

Theory change alters the characterization science gives of the entities and processes alleged to constitute the world. Even where the same entities and processes appear to be countenanced by successive theories, their descriptions are so altered as to make it impossible to discern referential stability if reference is at all dependent on accounts of the nature of the referent. Thus, history appears to discredit our ability to identify the actual constituents of the world as much as it does our ability to learn their true natures.⁴¹

反実在論者が実在論に反対して取り上げるもう一つの問題は、理論の真実性と成功の関係である。Leplin は次のように説明している。

The second problem concerns the explanation which an imputation of truth or approximate truth to a theory can give of its empirical success. Even if a theory were true or approximately so, that fact about it could easily fail to be reflected in success. A true theory, unless complete in some global sense, might be too remote from our experience to affect it in any way, or to affect it differently from some false alternative. Inaccuracies in the background assumptions made in applying a theory might produce predictive failure. And the retreat to approximate truth, in addition to the vagueness it introduces, forfeits even a presumption of success should the area of inaccuracy happen to be crucial to our experience of the world. A theory that gets most everything right, missing just some fact about photons, say, might easily number among the least successful in laboratory appraisal.

Conversely, a theory not even approximately true could be empirically impressive through the invocation of opportune auxiliary assumptions or chance agreement at the level of testable generalizations with one more verisimilar. As alternative theoretical structures can often be posited for the same phenomena, such agreement should occasion no surprise. And the presence of true statements within the consequence classes of false ones needs no explanation. One may hope that the application of theories in new areas will yield differential success, that false theories will eventually yield a preponderance of false, testable consequences. But whether theories are necessarily discriminable in this way is dubious, and at any given time the evidential picture is indecisive. The successful extension of a theory to new areas yields a greater body of corroborations from which further experience may yet diverge. And the idea that successful extendibility has any special

epistemic significance as against the sheer quantity of the resultant successes is difficult to sustain, extendibility reflecting as much on the limitations of our initial perspective as on the merits of our theory.

A further and more fundamental aspect of the alleged connection between truth and success has recently emerged as a source of antirealist argumentation. This aspect concerns the assumption implicit in realist views based on theses 3 and 4 of the legitimacy of abductive reasoning or "inference to the best explanation." If such reasoning is indeed legitimate, it may be used within science to infer the truth of hypotheses directly from their explanatory and predictive successes, thus obviating recourse to the explanatory power of realism with respect to scientific success generally. If, instead, such reasoning is suspect, if explanatory status is judged an insufficient basis for inference, then an explanationist defense of realism can be no more cogent than the suspect support which observational evidence provides theoretical hypotheses within science. In either case, realism gains nothing from its alleged explanatory status; if not superfluous it is question-begging.⁴²

Leplin は、反实在論者が指摘するこれらの問題点は实在論者が満足できるまで解決されていないと述べ、科学における实在論と反实在論の論争は決着がつかっていないことを示している。

I believe it is fair to say that neither the problem posed by the historical record of theory change nor the problem about the connection between truth and success has been solved even to the satisfaction of realists. At present, the most promising realist strategies are to argue that these problems are indecisive or to argue for realism independently, so that one has, as it were, an existence proof for the solutions one lacks.⁴³

6 科学哲学における議論が示唆するもの

文法の心的実在性を議論する際に、上で紹介した科学哲学における議論から得るところは多い。

まず、科学哲学における反实在論者の科学史的観点からの实在論に対する反論は、そのまま言語学における文法の心的实在論にむけられるものである。生成文法も、その歴史をふりかえれば、理論がつつぎと修正・変更されてきた。標準理論の枠組みでは、文法は規則の体系であり、句構造規則や多くの変形規則が提案されていた。それらは、当然、言語能力を反映する心的に実在するモデルと考えられ、そのモデルを使って幼児の言語習得も説明されていた。ところが、現在では、原理／原則とパラメータ理論に取って代り、変形規則は Move- α という一つだけになって、かわりに各種の原理／原則やパラメータが提案されている。句構造規則も不要であるという。この原理／原則とパラメータ理論による文法も言語能力を反映するモデルと考えられているはずである。従って、生成文法でも、その時々、母語話者の言語能力を反映していると提案された文法が、実はそうではなかったとして、つつぎと修正あるいは破棄されていったのである。ということは、現在の原理／原則とパラメータ理論による文法のモデルも、いずれ修正あるいは破棄されるかもしれず、その心的実在性は信用できないということになる。

次に、科学の世界で、理論や理論的構築物の实在性について意見が一致していない（实在論者が多数派ではあるが、その实在論者のなかでも意見が分かれる）以上、Chomsky が主張するように、自然科学と同じ方法論で言語を研究して文法のモデルを作成しても、そのモデルが心的実在性をもつ保証はなにもないことになる。自然科学の方法論が、その方法論で構築した理論や理論的構築物の实在性を保証しないのであるから、その自然科学の方法論にのって言語を研究しても、できあがった文法の心的実在性はなにも保証されないのである。

さらに、科学と言語学では、実在論の論議が占める位置が異なる。拙稿、「文法の心的実在の問題について」でも、Toulmin の言葉を借りて、理論の受容性の問題と理論的構築物の実在性の問題は互いに独立した別個の問題であることを述べたが、⁴⁴ Leplin が *Scientific Realism* という論文集の Introduction で、

None of the authors of the present papers either denies that science is successful or holds the success of science to transcend human comprehension. But there is much disagreement as to what that success consists in, how it is to be explained, and the role of realism in its explanation.⁴⁵

と述べているように、あるいは、反実在論者の Larry Laudan が、

It is important to guard against a possible misinterpretation of this essay. *Nothing* I have said here refutes the possibility in principle of a realistic epistemology of science. To conclude as much would be to fall prey to the same inferential prematurity with which many realists have rejected in principle the possibility of explaining science in a non-realist way. My task here is, rather, that of reminding ourselves that there *is* a difference between wanting to believe something and having good reasons for believing it. All of us would like realism to be true; we would like to think that science works because it has got a grip on how things really are. But such claims have yet to be made out. Given the *present* state of the art, it can only be wish fulfilment that gives rise to the claim that realism, and realism alone, explains why science works.⁴⁶

と述べているように、科学哲学における実在論と反実在論の立場の違いは、要するに、理論や理論的構築物が真実であると信じるか信じないかの違いである。反実在論者がある理論を真実であると信じなくとも、その理論自体は

現象を説明しているのであるから、その理論を受容してはいるのである。そして、科学者たちはその理論のもとで研究を続けるのである。

ところが、生成文法の場合は、先に述べたように、その目標からして、言語学者が作成する文法は心的実在性を持たなければならないのであり、理論の受容性の問題と理論的構築物の実在性の問題は互いに独立した別個の問題であるとは言えないのである。この文法はこんなに多くのことを説明できますが、その実在性は分かりません、ではすまされないのである。

言語の研究は、文法の心的実在性を問題にしなくとも行なうことはできるし、実際、生成文法学者の多くは、自分が作成する文法の心的実在性のことなど考えずに、簡潔性とか論理的整合性という基準によって文法の研究をしている。しかし、生成文法理論の枠組みによるかぎり、言語学者は、いつも、自分が作る文法の心的実在性のことを忘れてはいけないのである。そして、残念ながら、Chomsky に従って自然科学と同じ方法論で言語を研究したからといって、決して、できあがった文法の心的実在性は保証されないのである。

文法の心的実在性の保証はないが、言語学者は、自分の作成する文法は心的に実在するのだという確信のもとに言語の研究をすすめるなければならない。その際、Neil Smith が、

To view the language faculty as one of a number of modules which jointly constitute our mind is incidentally to ascribe *psychological reality* to the constructs of that module. Chomsky has always insisted that the linguistic principles he discusses are mentally represented and that linguistics itself is a sub-part of psychology. The implication of this is that linguistic arguments can be evaluated in terms not merely of their logical elegance but in terms of their adequacy in accounting for the details of language use, of language change over time, and most importantly of language acquisition by the child. Such evidence will not always

be available, but even in its absence, the 'best' currently developed grammar will always be adjudged psychologically real. This does not mean that the linguist is laying claim to an expertise which belongs to the psychologist, but rather that the hypothesized elements of the language module are claimed to be 'real' in the sense of being causally involved in explaining both our knowledge and our use of language. Moreover, the suggestion that our grammar is psychologically real should not be interpreted as meaning that experimental evidence of the kind adduced by psychologists is accorded some kind of intrinsic priority in the evaluation of theories. Such evidence is important, just as fossil evidence is important in evolution, but in neither discipline should one kind of evidence be ascribed a status superior to that of other kinds.⁴⁷

と述べているように、単に論理的整合性だけでなく、多様な資料——言語習得や言語使用の資料——も利用すべきなのであろう。⁴⁸ 2節で紹介した Moderate realism の立場に立つのが穏当なのであろう。

注

- 1 文法の心的実在の問題を考える時には、言語能力 (competence) と言語運用 (performance) の区別を明確にしておかねばならない。実際に文を発する時に大脳の中でどのようなことが起こっているかは本稿では扱わない。あくまで、言語学者の作成する文法と母語話者が大脳の中に内在化して持っている文法 (当然、母語話者はその文法を意識しているわけではない) の対応の問題を扱う。
- 2 中井悟, 「文法の心的実在の問題について」, 『同志社大学英語英文学研究』No. 31 (1983), pp. 109-30.
- 3 中井悟, 「言語学と自然科学——科学哲学的観点からみた生成文法の方法論——」, 『同志社大学英語英文学研究』Nos. 44・45 (1988), pp. 278-325.
- 4 中井悟, 「科学史的観点からみた生成文法理論の変遷 (I)」, 『同志社大学英語英文学研究』Nos. 47・48 (1989), pp. 202-34. 中井悟, 「科学史的観点からみた生成文法理論の変遷 (II)」, 『同志社大学英語英文学研究』No. 49 (1989), pp. 115-36.

- 5 Per Linell, *Psychological Reality in Phonology: A Theoretical Study* (London: Cambridge University Press, c1979), pp. 3-8.
- 6 *Ibid.*, pp. 3-4.
- 7 *Ibid.*, p. 4.
- 8 *Ibid.*, p. 5.
- 9 *Ibid.*, p. 5. 引用した文章に続けて、Linell は、“This, of course, is Chomsky’s position and hence the ‘official’ view of many generativists. In many respects, this kind of linguistics is an extreme form of structuralism or of ‘autonomous linguistics’ (i. e. a linguistics which refuses to utilize external evidence).” (*Ibid.*, p. 5.) と説明している。
- 10 本稿で生成文法という場合には、Chomsky の考えている生成文法のことであり、生成文法=Chomsky の考えている文法、と理解してもらいたい。Howard Gardner が、

Before entering into the heart of Chomsky’s contributions, it may be well to say a word about the focus of this chapter. While the work of other scholars has been central in other chapters, in no other chapter of this book has so much attention been focused on a single individual. In part, this is an expository device—a way of presenting the principal (and often complicated) ideas of modern linguistics in as accessible a fashion as possible. But, also, in no other contemporary cognitive science is the work of a single individual so key and so irreplaceable. In a nontrivial sense, the history of modern linguistics is the history of Chomsky’s ideas and of the diverse reactions to them on the part of the community. (Howard Gardner, *The Mind’s New Science: A History of the Cognitive Revolution* (New York: Basic Books, Inc., c1985), p. 185. この書物は認知科学についての本で、そのうち第7章が言語学にあてられている。)

と述べているように、生成文法理論は常に Chomsky を中心として展開しており、生成文法理論について論じるということは、Chomsky の言語理論について論じることになるのである。

- 11 Noam Chomsky, *Rules and Representations* (New York: Columbia University Press, c1980), p. 48. principle の訳語には原理と原則の二つがあり、どちらも使われている。そこで本稿では、principle という語を原理/原則という形で訳すことにする。

12 Noam Chomsky, *Rules and Representations*, p.187.

13 規則の下位部門は次のようなものである。

- (i) lexicon
- (ii) syntax
 - (a) categorial component
 - (b) transformational component
- (iii) PF-component
- (iv) LF-component (Noam Chomsky, *Lectures on Government and Binding* (Dordrecht : Foris Publications, c1981), p.5.)

14 原理／原則の下位体系は次のようなものである。

- (i) bounding theory
- (ii) government theory
- (iii) θ -theory
- (iv) binding theory
- (v) Case theory
- (vi) control theory (Noam Chomsky, *Lectures on Government and Binding*, p.5.)

15 正確に言うと、complement—head という語順になるようにパラメータのスイッチを設定するということである。

16 Chomsky の説明は次のようである。

When the parameters of UG are fixed in one of the permitted ways, a particular grammar is determined, what I will call a "core grammar." In a highly idealized picture of language acquisition, UG is taken to be a characterization of the child's pre-linguistic initial state. Experience—in part, a construct based on internal state given or already attained—serves to fix the parameters of UG, providing a core grammar, guided perhaps by a structure of preferences and implicational relations among the parameters of the core theory. (Noam Chomsky, *Lectures on Government and Binding*, p.7.)

17 Noam Chomsky, *Rules and Representations*, p.220.

18 Rudolf P. Botha, *The Conduct of Linguistic Inquiry: A Systematic Introduction to the Methodology of Generative Grammar* (The Hague : Mouton

Publishers, c1981), pp.141-44.

19 *Ibid.*, pp.141-42.

20 *Ibid.*, p.142.

21 *Ibid.*, p.142.

22 Noam Chomsky, *Rules and Representations*, p.188.

23 少し長くなるが, Chomsky 自身の説明を引用しておこう。

I think that we should study the problem of language and mind very much in the way we study any problem in biology. We can take as an example the ways in which we study the characteristics of organs or systems of the body. If we were to study the human visual system, we would first attempt to abstract this system away from its physical context. Although it interacts with the circulatory system and many other systems, the scientist tries to identify and separate the visual system by the process of idealization. And it had always been that way as long as it's been called science.

Having done this, the scientist then attempts to discover the structural principles that determine how the system functions, the functions that the system attempts to achieve, how the system develops in the organism from the initial genetic codes to its mature state, and the physical mechanism that enter into the system and how they interact with other systems. There are, of course, a variety of other questions.

The method of approach is reasonably straightforward, and even if the framework is not good, the general method is at least clear. You certainly begin by discovering the characteristics in the mature organ, and then working with the harder question of describing the deeper properties, the innate properties that lead to the growth of a mammalian visual system instead of, say, an insect's eye. All of this would be investigated largely by looking into the nature of the environmental conditions that are available to the embryo and the growing organism. We must also ask what we must assume concerning the initial state of the organism that led to a mature eye. On the basis of that inferential, derivative research, we could speculate and hypothesize about the initial state as well as the other questions I mentioned.

I think we should study language in exactly the manner of the physical sciences. I think the scientists have the right approach to the problems. In

this case we should be asking ourselves what kind of cognitive systems there are in the human mind, systems of belief and knowledge and computation and so on. In the case of the human body, it is not easy to identify them since the process of idealization and abstraction is involved. But just as we can identify the visual system on the physical side, it would be reasonable to identify language as one such cognitive system.

When we view language as a cognitive, that is, as a mental organ, as an analog to a physical organ, we can ask the very same questions and proceed in the very same way as we would in the case of study of a physical system of the body. In other words, we can ask what are the structural principles by which this mental organ functions? What are the functions of the system? How does it develop in the ontogenetic development of the individual from embryo to adult? What kinds of interactions are there with other mental systems and mental organs?

Then we can proceed to the deeper and interesting question that you have pointed out in your comment about the innate properties: just as we would in the case of the visual system, asking how the structural properties and uniformities that can be discovered and discerned in the mature adult system might have arisen on the basis of an interaction of genetic coding with environmental conditions. When we find, as we often do, that the environment is just far too impoverished to have determined the kind of structures that humans develop, we reasonably assume, as we do in a physical case, that these are properties that are in some way inborn.

Ultimately, one would hope to be able to tie in this investigation with general biology, but that's a long way into the future, both in discovering the actual physical mechanisms involved and the related aspects of the genetic code. But we can barely begin to do it in the case of the visual system and we certainly can't do it yet in the case of the language system.

All of this is the way I would approach the problem of language, and for the general problem of mind it seems to me we should simply generalize this approach where there are other identifiable organs we should proceed in the same fashion, and then the mind will be nothing other than the systematic interaction of the various mental organs that constitute it. Ultimately, we will want to relate this to rich enough studies of the physical body in which these abstract systems are realized and substantiated.

(Noam Chomsky, *Language and Politics*, ed. C. P. Otero (Montréal: Black Rose Books, c1988), pp.253-55.)

24 やはり、少し長くなるが、Chomsky が文法の心的実在の問題について、太陽の熱核反応を研究している天文学者の例をあげて説明している部分を引用しておこう。

Now, as far as the matter of psychological reality is concerned, in my view there is a very serious confusion that is very deep seated in the field and goes far back, back to the first time that the notion was introduced. I believe it was probably first done by Edward Sapir in his paper on the psychological reality of the phoneme.

There is a general point of view which is very common among linguists, psychologists, philosophers and many others, which I think is totally wrong, and it goes more or less like this. It says, "Suppose that someone comes up with a grammar of a language that has interesting principles in it and explains a lot of things with pretty good empirical coverage, and suppose furthermore that that person comes up with a theory of universal grammar with general principles that explain properties of language, etc. Suppose it's the best system you could imagine. Now someone comes along and says, That's fine, you have a theory that works and explains things but how do you know it's psychologically real?"

That's the standard approach. What is thought is that you have to get some other kind of evidence—processing evidence, or evidence from the psychological laboratory, or neurophysiological evidence, or whatever—to find out whether it is psychologically real. Now, I'm all in favor of getting other kinds of evidence, but it seems to me that there's a logical error at the core of this reasoning.

To see that, I'd suggest again transferring the whole discussion back into the physical sphere, which is usually a good device for seeing what makes sense and what doesn't. So let's imagine the following possibility. Imagine a scientist, a solar physicist, who is interested in discovering the structure and the processes of the interior of the sun. You can't get inside the sun any more than you can get inside the mind. So what he does is use the evidence that is available from the periphery just as we use sounds that come from the periphery of the mental system. So he looks at the light emitted by the sun and does all sorts of experimental analyses and

so on, and he finally comes up with a theory of fusion, hydrogen turning into helium or whatever—and that's his theory of the sun. Then he presents it and somebody says, "It's a very interesting theory and seems to explain things, and seems to work very nicely, but how do you know it's physically real?"

Well, that question is never raised in science. It's senseless. What would it mean to say that it's physically real other than that it's true? And how do we know that it's true other than on the basis of the ability to explain the evidence available to us? There is no other way. There's no avenue to physical reality other than the way that the scientist used in the first place to discover and establish the theory. And exactly the same is true in the mental sciences. If someone comes up with a grammar or a theory of language on the basis of some evidence, and then you ask him how he knows it's psychologically real, all he can say is, "I already told you why I believe that it's psychologically real; here's the evidence that supports it." If somebody says, "I don't think that's enough evidence," that's fine. You can always look for more evidence, and the evidence may be from other domains or maybe from the same domain. (Noam Chomsky, *Language and Politics*, pp.267-68.)

25 Noam Chomsky, "Knowledge of Language," *Language, Mind, and Knowledge*, ed. Keith Gunderson (Minneapolis: University of Minnesota Press, c1975), p. 304.

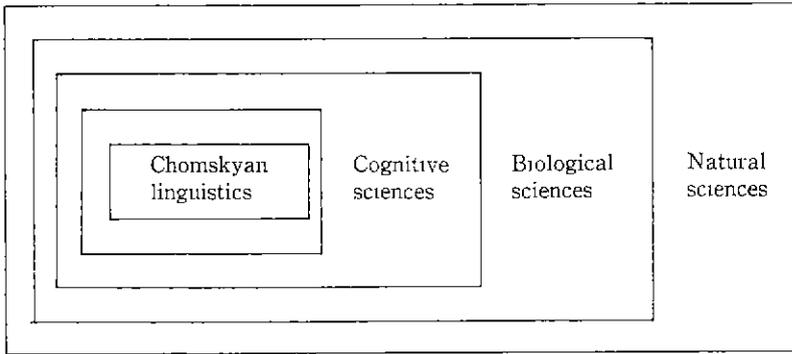
26 Chomsky のこの論理を Botha がまとめているので紹介してみよう。

Rather, Chomsky adopts an indirect approach to questions (5c) and (d). Specifically, he takes a number of indirect steps to clarify and justify the empirical status and logic of validation of mentalistic theories. Firstly, he constructs an analogy between linguistic inquiry and a particular form of physical inquiry, viz. astrophysical inquiry. Second, and once again with the aim of clarifying and justifying the logic of validation of his version of mentalism, Chomsky constructs an analogy between what mentalist linguists and psychologists do and what certain biologists and neurophysiologists are claimed to do. Thirdly, Chomsky presents a case against the position of those scholars who have criticized his mentalistic approach for having an evidential basis which is insufficiently wide. (Rudolf P. Botha,

“External Evidence in the Validation of Mentalistic Theories : A Chomskyan Paradox,” *Lingua* Vol. 48 (1979), pp. 305–306.)

(5c) の問題とは、“What is the epistemological status — empirical or nonempirical — which the claims expressed by mentalistic theories are supposed to have?” のことであり、(5d) の問題とは、“What is the logic which is required for the validation — i. e., confirmation and refutation — of these mentalistic claims?” のことである。(Rudolf P. Botha, “External Evidence in the Validation of Mentalistic Theories : A Chomskyan Paradox,” p. 302.)

また、Botha は、言語学は自然科学であるという Chomsky の考え方を次のような図にまとめている。



(Rudolf P. Botha, *Challenging Chomsky : The Generative Garden Game* (Oxford : Basil Blackwell, c1989), p. 205.)

27 Rudolf P. Botha, “External Evidence in the Validation of Mentalistic Theories : A Chomskyan Paradox,” p. 318.

28 *Ibid.*, p. 318.

29 中井悟, 「文法の心的実在の問題について」, p. 125.

30 拙稿, 「文法の心的実在の問題について」, p. 125 でも紹介したように、Linell は単純性の基準は形而上学上の仮説であると言っている。

Ultimately, the simplicity criterion is based on a metaphysical assumption that Nature is simple. Thus, it does not involve an empirical argument. (Per Linell, *Psychological Reality in Phonology*, p. 73.)

単純性の基準が形而上学的であることを認めたらうえて、それを擁護する立場もある。

例えば、Alan Musgrave は、“Nature is simple” ということについて、次のように述べている。

“Nature is simple” is a metaphysical principle and a hopelessly vague one to boot. But scientists have made various attempts to say more precisely what it means and to construct theories which conform to it. This transforms it into a metaphysical principle which can, at first remove so to speak, be empirically assessed: roughly speaking, it is acceptable metaphysics if theories constructed under its aegis are empirically successful, while theories which violate it are not. In our postpositivistic age, we should not regard the intrusion of this kind of metaphysical principle into science as illegitimate. If vague appeals to simplicity can be transformed into precise principles of theory construction and if such principles are acceptable (in the sense roughly defined), then the virtue they indicate is not merely pragmatic. It may not be absurd to think that Nature is simple (in some carefully specified sense or senses), if we can point to the empirical success of science in vindication of our belief. (Alan Musgrave, “Realism Versus Constructive Empiricism,” *Images of Science: Essays on Realism and Empiricism, with a Reply from Bas C. van Fraassen*, eds. Paul M. Churchland and Clifford A. Hooker (Chicago: The University of Chicago Press, c1985), pp.203-204.)

- 31 Per Linell, *Psychological Reality in Phonology*, pp.73-74. OGPh は orthodox generative phonology のことである。
- 32 注 24 で引用した Chomsky の説明の中に, “Well, that question [=It’s a very interesting theory and seems to explain things, and seems to work very nicely, but how do you know it’s physically real?] is never raised in science. It’s senseless.” という言葉がある。
- 33 Chomsky 1982 は, Noam Chomsky, *The Generative Enterprise: A Discussion with Riny Huybregts and Henk van Riemsdijk* (Dordrecht: Foris Publications, c1982) のことである。
- 34 Philip Carr, *Linguistic Realities: An Autonomist Metatheory for the Generative Enterprise* (Cambridge: Cambridge University Press, c1990), p.47.
- 35 Ronald N. Giere, *Explaining Science: A Cognitive Approach* (Chicago: The University of Chicago Press, c1988), p.7.
- 36 Jarrett Leplin (ed.), *Scientific Realism* (Berkeley: University of California

Press, c1984).

- 37 Paul M. Churchland and Clifford A. Hooker (eds.), *Images of Science : Essays on Realism and Empiricism, with a Reply from Bas C. van Fraassen* (Chicago : The University of Chicago Press, c1985).
- 38 Bas C. van Fraassen, *The Scientific Image* (Oxford : Oxford University Press, c1980). 上の Philip Carr の引用の中に出てくる van Fraassen 1980 とはこの本のことである。
- 39 中井悟, 「文法の心的実在の問題について」, pp.116-17. 「文法の心的実在の問題について」では, 実在主義 (realism) と道具主義 (instrumentalism) として紹介したが, 道具主義というと反実在主義を限定してしまうことになるので, ここでは, 反実在主義という表現を使用する。

実在主義と反実在主義について, 確認のために, Ronald N. Giere の説明を引用しておく。

Here I will simply characterize scientific realism as the view that when a scientific theory is accepted, most elements of the theory are taken as representing (in some respects and to some degree) aspects of the world. Anti-realism is the view that theories are accepted for some nonrepresentational virtue, such as “problem-solving effectiveness” (Laudan 1977), or for very limited representational virtues, such as saving the observable phenomena (van Fraassen 1980). (Ronald N. Giere, *Explaining Science : A Cognitive Approach*, p.7.)

Laudan 1977 とは, Larry Laudan, *Progress and its Problems: Towards a Theory of Scientific Growth* (Berkeley : University of California Press, c1977) のことであり, van Fraassen 1980 は, 注 38 であげた本のことである。

- 40 Jarrett Leplin, “Introduction,” *Scientific Realism*, ed. Jarrett Leplin (Berkeley : University of California Press, c1984), pp.1-2.
- 41 *Ibid.*, p.2. 反実在論者の実在論に対するこの反論は, Ronald N. Giere による反実在論者の Larry Laudan の説のまとめにもわかりやすく説明されている。

One point of agreement between logical empiricism and the historical tradition of Kuhn, Lakatos, and Laudan is the rejection of scientific realism. But only Laudan made that rejection explicit (Laudan 1981a; 1984a, chap.5). Indeed, he regarded his arguments against scientific realism as an example of how one can use facts about accepted theory and

method to argue against an axiology. Here we see the reticulated model of scientific rationality in action!

Interestingly Laudan has not denied that theoretical hypotheses may refer to real entities and processes and thus may be literally true or false. This he called semantic realism. What he has rejected is epistemological realism, roughly, the claim that many of our current scientific theories are in fact at least approximately true. Such claims, he has argued, are totally unfounded. His arguments for this position are various.

Perhaps Laudan's main concern has been to rebut the widespread view that realist claims are justified by the empirical success of science. This he has done by recalling the many theories that were empirically very successful for a time but later were rejected as fundamentally mistaken — phlogiston, the ether theory, and so on and on. Why, he asks, is our position vis-à-vis our current empirically successful theories any different? Indeed, the fact that most past theories have eventually been found wanting provides strong inductive evidence that the same fate will eventually overtake our current theories as well.

To such arguments realists have replied that our current theories are better approximations to the truth than previous theories. And we can expect that future theories will be better approximations still. So the fact that all our theories eventually prove mistaken in some respects is of no great consequence. What matters is that they were "approximately" true and that our approximations are getting better (Boyd 1973; Putnam 1975). This is the thesis Laudan calls "convergent realism."

Laudan regards the appeal to improved approximations as mere whistling in the dark. If the ether does not exist, there is no coherent sense of approximation according to which the ether theory of electromagnetic radiation can be said to have been even approximately true. Many philosophers of science remain unconvinced by Laudan's arguments, but no realistic theory of science can be viable if it fails to account for the historical evidence Laudan presents. (Ronald N. Giere, *Explaining Science: A Cognitive Approach*, pp.45-46.)

Laudan 1981a は、Larry Laudan, "A Confutation of Convergent Realism," *Philosophy of Science* 48 (1981), pp.19-49 のことで、Jarrett Leplin (ed.),

Scientific Realism に再録されている。Laudan 1984a は、Larry Laudan, *Science and Values: The Aims of Science and their Role in Scientific Debate* (Berkeley: University of California Press, c1984) のことである。

- 42 Jarrett Leplin, "Introduction," pp. 2-3.
- 43 *Ibid.*, p. 4.
- 44 中井悟, 「文法の心的実在の問題について」, p. 124 and p. 128.
- 45 Jarrett Leplin, "Introduction," p. 1.
- 46 Larry Laudan, "A Confutation of Convergent Realism," p. 48.
- 47 Neil Smith, *The Twitter Machine: Reflections on Language* (Oxford: Basil Blackwell, c1989), p. 3.
- 48 例えば、Joan Bresnan も、言語学者が提案する文法のモデルは現実の人間の言語使用を説明できるものでなければならぬとして、次のように述べている。

If a given model of grammar cannot be successfully realized within a model of language use, it may be because it is psychologically unrealistic in significant respects and therefore inadequate in those respects as an empirical theory of the human faculty of language. (Joan Bresnan, "A Realistic Transformational Grammar," *Linguistic Theory and Psychological Reality*, eds. Morris Halle, Joan Bresnan, and George A. Miller (Cambridge, Mass.: The MIT Press, c1978), p. 2.)

Synopsis

On the Issue of the Psychological Reality of Grammar

Satoru Nakai

The issue of the psychological reality of grammar — whether the grammar proposed by a linguist corresponds to the grammar internalized in the native speaker's brain — has been a favorite topic discussed by anti-generative grammarians against the generative grammar. The reason why this issue is considered to be specific to the generative grammar is that the task of the generative grammarian is to propose a model of the “mental structure consisting of a system of rules and principles.”

According to Chomsky, linguistics is a natural science and it should be studied in the same way as natural science. Since the physical reality of theories is not at issue in natural science, the psychological reality of grammar should not be a problem in linguistics, either.

But there are several problems in Chomsky's way of thinking. First, though Chomsky compares a grammar to a mental organ and proposes to study the organ in the same way as a biologist, this is merely a metaphor. To compare a grammar to a biological organ does not guarantee a linguist to study the grammar in the same way as a biologist. Second, it is also problematic to study the human mind in the same way as natural science. The criteria in natural science do

not apply in linguistics automatically. Third, Chomsky is mistaken about the controversy of realism and antirealism in science. Though Chomsky says that in natural science the physical reality of theories is not at issue, there have been and are debates among philosophers of science on the issue of the physical reality of theories.

One of the main problems in scientific realism is that the theories are discontinuous. It has occurred many times that a theory, which is considered to be true, is found to be false and is thrown away. This is true in linguistics, too. A grammar, which is considered to be true now, may be found to be false and be thrown away in the future. Such a grammar cannot be psychologically real.