Transitions in Second Language Acquisition Research

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(Received September 30, 1991)

Introduction

It was at the end of the 1960's and the beginning of the 1970's that a scientific investigation of second language (L2) acquisition began. Since then it has been one of the most active fields in linguistic research. But it is not the case that the same approach has been adopted during consequent years. Including the study during the 1960's which served as a motivational factor for the advent of research into L2 acquisition in the next decade, we can summarize the major approach adopted in each decade as follows; 1960's: pedagogic approach, 1970's: descriptive approach, 1980's: explanatory approach. It is expected that the 1990's will see an active inquiry from a new cognitive perspective along with the explanatory investigations based on the Universal Grammar (UG) theory which started in the 80's.

In the sections which follow, I shall discuss, for each approach in each period, the appropriateness of setting up the particular research period, the motivations for bringing about the period, the characteristics of the approach, a summary of the research results, and finally, the limitations and problems with the approach. In so doing, I also intend to delineate the interrelationships between the different approaches in the historical development of L2 acquisition research.

The Period of ‘Pedagogic Emphasis’

The audiolingual method of foreign language teaching was born in the late 50's as a critical response to the traditional grammar-translation method. It had been the dominant method in the United States until its original enthusiasm began to subside around the middle of the 60's. The cognitive code-learning theory also appeared in the middle of the 60's. Researchers in this period tried to decide the relative merits of these methods. Thus, ‘The importance attributed to research in the sixties was demonstrated, above all, by the research approach that was applied to controversies and critical issues in language pedagogy’ (Stern, 1983:56).
What motivated the birth of audiolingualism were the unsuccessful experience of teaching with the traditional method on the one hand, and the alleged success, by contrast, of the American ‘Army Method’ on the other. The Army Method which was based on the structural linguistics of the time was applied in wartime intensive language programs and it was claimed that the method could be used more generally with ordinary learners. Incorporating the tenets of the behavioristic psychology prevailing at the time in the U.S., this resulted in the audiolingual method. The cognitive code-learning theory, based on a respective new trend in linguistics and psychology, was then subsequently put forth as a critical reaction to audiolingualism. In contrast to the habitual and mechanical emphasis of language learning in audiolingualism, the cognitive theory put an emphasis on the prior cognitive understanding of grammatical structures in language learning.

The approach of inquiry in this period is characterized by pedagogical experimentation. Several large-scale experiments were conducted in the language classroom to decide which teaching method was superior. They included Scherer and Wertheimer (1964) (the grammar-translation method vs. the audiolingual method), Chastain and Woerdehoff (1969) (the audiolingual vs. the cognitive code), and Smith (1970) (the traditional vs. the audiolingual vs. the cognitive code).

The results of these studies were not at all illuminative. The general conclusion reached was simple and self-evident; ‘students learn to do what they do’ (Chastain, 1971:131). They have not produced the findings that experimenters had initially expected. They only ‘added further fuel to the fire of controversy’ (Stern, 1983:56-57).

The pedagogical experimental approach in this period was afflicted with lack of necessary control of many variables working in the classroom. Most seriously, it neglected the observation of actual classroom behavior (Long, 1980; Ellis, 1990a:10). There was no certainty that teachers in actual conducted their teaching according to the instructions given them. It must also be stressed that these experiments were carried out on a simplistic assumption that teaching could directly control learning.

The Period of ‘Descriptive Emphasis’

What motivated the research in the 70’s was, first of all, ‘the disillusionment over the teaching method debate and the inconclusiveness of the method research’ (Stern, 1983:110) in the 60’s. This prompted researchers to turn their attention to investigating the nature of the L2 acquisition process itself. Another motivational factor was the development of first language (L1) acquisition research in the 60’s with a nativistic approach. The accumulated data showed developmental regularities in L1 acquisition. It is not surprising that the possibility of the same regularities in L2 acquisition was entertained by those who were concerned with L2. It was at the end of the 60’s that Corder’s epoch
making article appeared insisting on the potentiality and justifiability of the nativistic approach to L2 acquisition (Corder, 1967). Thus, 'second language researchers needed to catch up with first language research' (Dulay, et al., 1982:8).

With this motivational background, research into L2 acquisition began to open up. Although there were occasional earlier studies, 'it was not until the late 1960's/early 1970's that naturalistic L2 acquisition began to capture the interest of researchers on a large scale' (Wode, 1981:43).

The major characteristic of the research approach in this period was that it replicated L1 acquisition research not only in its selection of research themes but in the employment of research methods. It thus followed that the scope of inquiry was mostly limited to natural L2 acquisition. The order of morpheme acquisition and the stages of structural development are typical examples of research in L2 acquisition in the period. The essential ideas of the former study came from Brown (1973) and de Villiers and de Villiers (1973), and the latter was motivated by Klima and Bellugi (1966), all in L1 acquisition. Errors observed in L2 acquisition were also examined with reference to those identified in L1 acquisition.

One important outcome of the research in this period was the accumulation of natural L2 acquisition data. This has contributed to the evolution of the Interlanguage Hypothesis. The 'Creative Construction Hypothesis' (Dulay, et al., 1982) is a theoretical explanation of the concept of interlanguage of the day. Another important result is of a pedagogical nature. The 'Monitor Model' of L2 acquisition was proposed by Krashen (1981, 1982), and it has provided a theoretical basis for the 'Natural Approach' which, it has been claimed, promotes L2 acquisition in the classroom (Krashen and Terrell, 1983).

The study of L2 acquisition in the 70's has been critically reviewed as being simply descriptive. 'No attempt has yet been made to suggest a theory of L2 acquisition' (Wode, 1981:43). Although the natural acquisition order of those morphemes has been confirmed and it is often taken as an implication of the possible relevance of linguistic universals to L2 acquisition, 'there is little attempt to provide a theoretical basis from which such an order might follow' (Lightbown and White, 1987:498). The same kind of criticism can be addressed to Krashen's theory. Although he claims, in a footnote, that Chomsky's distinction between 'cognize' and 'know' is similar to the acquisition-learning distinction (Krashen, 1985:24-25), it is in no way clear how 'acquisition' can be related to Universal Grammar (UG) in Chomsky's sense.

The Period of 'UG-based Explanatory Emphasis'

In contrast to the descriptive approach in the 70's, a different approach emerged in the 80's. 'The difference is one that arises not so much from what constitutes the language phenomena under scrutiny as from what questions are being posed with respect to those phenomena' (Rutherford, 1988:405). Researchers
set about exploring the nature of a language acquisition faculty and its possible contribution to L2 acquisition.

The primary motivation for this approach was the development of the UG theory. Its influence was rapid and 'In the 1980's there has been a considerable revival of interest in Chomskyan linguistic theory as a source of hypotheses about L2 acquisition' (Lightbown and White, 1987:501). A second less conspicuous but important motivational factor was the Interlanguage Hypothesis established in the preceding decade. The hypothesis states that the L2 learner's language is systematic and rule-governed and that L2 acquisition is similar to L1 acquisition in essential ways. This is an important recognition because 'It only makes sense to ask if knowledge of language is acquired in a similar fashion if that knowledge has common properties in both contexts' (White, 1989:35). A third factor is concerned with maturational constraints in language acquisition. Since L2 acquisition is far less constrained by these limitations, it may be claimed that 'L2 acquisition data provides a clearer window for the investigation and verification of language universals' (Gass and Ard, 1980:451).

The most prominent characteristic of this approach is its total dependence upon the UG theory. Since the field of language acquisition research is regarded as a testing ground for UG, research is carried out according to theory-driven hypotheses. Another related feature of the approach is concerned with the limited scope of research analysis. Reflecting the crucial distinction between competence and performance in UG and its restricted concern with the former, L2 acquisition research within this framework limits its scope to interlanguage competence. The literature here has treated quite abstract language phenomena associated with linguistic universals in terms of principles and parameters.

It is not easy to propose a general conclusion concerning the role of UG in L2 acquisition since we have seen contrasting research results. However, it may be safe to state, according to White (1989:174), that 'a consensus appears to be developing that there is partial access to UG in L2 acquisition.' Future research is expected to explicate the possible functional distinction between principles of UG and those of language learning, e.g. the Subset Principle. Although both types of principles are observed to be operating in L1 acquisition, it may be that in L2 acquisition only the former can operate. Research evidence suggests, for example, that L2 learners fail to observe the Subset Principle (Hirakawa, 1990).

Several reservations must be pointed out with research based on the UG theory. The first is concerned with its theoretical abstraction from the ordinary use of language. The danger is often expressed, as Cook (1985:8) himself admits; 'Competence is separated from performance, grammatical competence from pragmatic competence, acquisition from development, core from peripheral grammar, each removing something from actual language use.' This leads to a second criticism concerning the methodology of the research paradigm; there can
be no other way to tap competence than through some kind of performance. Thus, the onus is on linguistic researchers 'to try to pose questions unaffected as far as possible by extraneous [performance] factors' (Lightfoot, 1982:92). A problem always shadowing study by this approach is 'what type of performance provides the best window for looking at competence' (Ellis, 1985:212). The simple assumption that a grammatical judgment test or an elicited imitation task can directly reveal competence is not always warranted (Birdsong, 1989). A even more serious reservation arises from the fluidity of the UG theory. There have been different views on particular issues and modifications have been rapid. There is always the possibility that 'a small change in one aspect has multiple consequences throughout the whole theory' (Cook, 1988:168).

The 1990's: Discussion on a Cognitive Perspective

What will we see in the development of L2 acquisition research in the decade of the 1990's? It is certain that UG based research will continue to be actively pursued, but it is also certain that the more deeply the competence side of language is investigated, the more sharply an explanation of its performative side will be felt to remain. Language performance is not just something irrelevant to linguistic knowledge as is sometimes assumed by linguists; it involves proper employment of linguistic knowledge in well formed utterances. Chomsky's formulation of linguistic competence is a state of knowledge at quite an abstract level and thus has nothing to say about the way that knowledge is put to use. This leaves us with a very important issue; how is the knowledge properly employed in the actual use of language? The cognitive theory of L2 acquisition has been attempting to investigate this issue.

We have seen sporadic studies with this perspective in the 80's (Bialystok, 1981, 1982; McLaughlin et al., 1983; Hulstijn and Hulstijn, 1984), but it seems reasonable to expect that in the 90's the cognitive study of L2 acquisition will thrive as a reaction to the advancement of inquiries based on the UG theory.

The cognitive theory views L2 acquisition as the acquisition of a complex cognitive skill (McLaughlin, 1987). Three basic ideas here are, a distinction between declarative and procedural knowledge of language, the restructuring of an internal linguistic system, and the automaticity of linguistic processing.

Declarative knowledge is 'knowing that' and procedural knowledge 'knowing how.' While the former is factual knowledge with a static nature, the latter is active in that it is concerned with control over that knowledge. In terms of language the former type of knowledge is 'a language user's underlying knowledge about linguistic structure' (Faerch and Kasper, 1986:50) and the latter can be characterized as 'having to do with those mechanisms that are responsible for the millisecond-by-millisecond processing of utterances in comprehension and production' (Sharwood Smith and Kellerman, 1989:218). The difference between these two types of knowledge is qualitative and operational in nature. What is
responsible for the actual processing of language is procedural knowledge. Declarative knowledge does not play a direct role here. To put it in another way, 'declarative linguistic knowledge cannot be employed immediately but only through procedures activating relevant parts of declarative knowledge in speech reception and production' (Faerch and Kasper, 1986:51). It should be noted that the actual processing of language occurs in direct connection with meaning; encoding of meaning in production and decoding for meaning in comprehension. Thus, linguistic procedural knowledge is always activated with reference to meaning to be communicated; it interfaces between semantic representations and linguistic representations. A similar observation is made by Garrett (1986) who states that 'the rules which describe the system attested to by competence are abstract descriptive generalizations that do not per se describe the mental processes by which a speaker formulates or comprehends any particular utterance.' She also states that 'In producing utterances speakers do not start from knowledge of how the system works; they start with a thought to be communicated.' According to her analysis, while linguistic knowledge as competence is 'what mediates between knowledge and utterance,' linguistic procedural knowledge, processing rules in her term, is 'what mediates between thought and utterance.'

An epiphenomenal but important property of procedural knowledge is that its processing is automatized. The basic idea here is the distinction between controlled and automatic processing. This is based on an information-processing perspective on human capacity; humans are limited-capacity information processors. Controlled processing requires attentional control of the subject, and thus it taxes much of his or her capacity and leaves little for other concurrent processing. Automatic processing, by contrast, is done with little attentional control over the processing. It is routinized and leaves much of the capacity for other processing. In the information-processing approach, skill-acquisition is defined as the establishment of complex procedures and the direction of progress is explained in terms of a transition from controlled to automatic processing (Hulstijn, 1990). In this sense, controlled processing can be said to lay down the 'stepping stones' for automatic processing (Shiffrin and Schneider, 1977, cited in McLaughlin et al., 1983). A great deal of practice is needed for this transition.

Restructuring refers to 'a process in which the components of a task are coordinated, integrated, or reorganized into new units, thereby allowing the procedure involving old components to be replaced by a more efficient procedure involving new components' (Cheng, 1985). In terms of language, this view means that language acquisition is not a simple process of linear or cumulative addition of new linguistic elements, but includes restructuring of the whole system incorporating these new elements. It is important to note that while restructuring takes place mainly through cognitive understanding of new linguistic elements and their relationship to the existing system of linguistic
knowledge, it also can take place through proceduralization of the knowledge and attainment of processing automaticity of the procedural knowledge.

McLaughlin (1990) states that while automatization of procedural knowledge is a process of accretion in itself, resultant liberation of processing capacity makes it possible to incorporate and compile an increasing number of information chunks, which may lead to restructuring of the knowledge. Thus, as McLaughlin points out, practice in the employment of linguistic procedural knowledge in L2 learning can have two different effects; it can lead to improvement of automaticity of its processing and it can also lead to restructuring learners' internal representational framework of the knowledge.

These are central issues in the cognitive theory of L2 acquisition. They are all concerned with how linguistic knowledge is used in actual linguistic performance. One of the most important implications for L2 acquisition in this perspective is the claim that 'the process by which new linguistic knowledge is internalized is different from the process by which control over this knowledge is achieved' as is pointed out by Ellis (1990a:7-8). Thus, it can happen that a L2 learner has internalized a fairly good linguistic knowledge of the language, but has not yet achieved control over the knowledge. In our terms, he or she may possess a well-developed declarative knowledge of the language, but he or she may lack in the corresponding procedural knowledge.

The possession of linguistic declarative and procedural knowledge, however, is not the whole story of L2 acquisition; processing automaticity of the procedural knowledge must be attained for fluent performance.

In order to clarify the situation and to make explicit what is necessary for L2 learners to attain in order to be a fluent user of the language, Figure 1 is presented as a framework of linguistic knowledge and performance domains. It is a slight adaptation of an earlier model (Yamaoka, 1990) which in itself is based on the model by Sharwood Smith (1986:244).

<table>
<thead>
<tr>
<th>Linguistic Knowledge</th>
<th>Linguistic Performance</th>
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<tr>
<td>Declarative Knowledge</td>
<td>Procedural Knowledge</td>
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<tr>
<td>Performative Skills</td>
<td>Performance Skills</td>
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*Figure 1 Knowledge and Performance Domains*

Linguistic knowledge is composed of two types of knowledge: declarative and procedural. One possible way to cultivating linguistic procedural knowledge might be by proceduralizing corresponding declarative knowledge. In this process, declarative knowledge might be said, figuratively, to serve as scaffolding for the development of procedural knowledge.

Performative skills refer to the processing smoothness of linguistic procedural
knowledge. This is in contrast to the cognitive side of the knowledge itself. Thus, linguistic procedural knowledge is seen to have two different aspects: the cognitive and the performative. Each of these must be attained before the learner is said to be a fluent speaker/hearer of a language. The attainment of performative smoothness is, to a greater extent, a matter of practice. Performance is what is actually observed.

Thus, failure in linguistic performance among L2 learners can be explained by the lack of any of the following three different resources. First, it may be a result of insufficiency in some part of declarative knowledge of the language. Second, it can be brought about by an absence of the relevant procedural knowledge. And third, it can originate from the fact that they have not yet fully automatized the procedural knowledge responsible for fluent linguistic performance.

The cognitive perspective of L2 acquisition research can shed light on these aspects of L2 acquisition, which UG based research does not cover. It can be expected to provide valuable insights into various phenomena observed in L2 acquisition.

However, the cognitive theory of L2 acquisition is not without its limitations. Since the theory views L2 acquisition as the acquisition of a cognitive skill, it treats it in the same framework as it does any other cognitive skills. This presents a marked contrast to the competence model in which the language faculty is assumed to be autonomous and independent of other general cognitive faculties. The cognitive theory can not explain the function of linguistic constraints reflecting linguistic universals. Another potential problem with the cognitive theory lies in its relative immaturity of theoretical development. For example, in the original distinction between declarative and procedural knowledge by Anderson (1976), declarative knowledge is defined to involve learner's conscious attention. It is assumed that one can communicate verbally one's declarative knowledge. This is clearly in conflict, at least, with natural language acquisition where learners are not consciously aware of their internalized linguistic knowledge. This leads to another problem in the developmental framework of procedural knowledge by Anderson. While his position that language acquisition starts with declarative knowledge may apply to a certain type of L2 acquisition, it is not applicable to other naturalistic types of acquisition. As Mohle and Raupach (1989:214) states ‘learning via explicit rule instruction is only one possible way of acquiring cognitive skills.’ The cognitive theory has not yet developed enough to present a highly articulated theoretical framework for language acquisition research, may it be L1 or L2.

Summary and Discussion

The process of replacing each approach by another in L2 acquisition research is well motivated. There are justifiable reasons for each transition. When research
in one approach has reached its limit or a point of saturation, a new alternative replaces it. Transitions in approach may be said to be inevitable reflecting the multifaceted nature of language. No single approach can handle the whole picture of language acquisition. Each approach can shed light only on a small part of it. It is unwise to view these approaches to be mutually exclusive. Rather, they are better understood if they are interpreted to be complementary to each other. Leading figures in each approach are well aware of the necessity. For example, from the camp of researchers adopting the UG paradigm, White (1990:132) admits that 'UG certainly cannot provide an explanation of everything that goes on in L2 acquisition and does not claim to do so,' and from the camp with a cognitive orientation, McLaughlin (1990:126) observes that 'Such a cognitive psychological description of second language learning provides, none the less, a partial account, and need to be linked to linguistic theories of language acquisition.'

The characteristics of each approach correspond to the way L2 acquisition is defined in the respective approach. In the UG theory, for example, it is defined as the acquisition of the core grammar of the language plus its peripheral grammar. Knowledge of grammar here is believed to be represented in the mind of the learner at an abstract level independent of actual use of the language. It is declarative in nature. In contrast, the cognitive theory tries to define L2 acquisition in a more ordinary sense of the word. It states that the learner has acquired the language when he or she can produce and comprehend utterances fluently in that language. The kind of linguistic knowledge in this perspective is procedural and at the same time its processing is automatic.

The difference in the definition of language acquisition between these two approaches poses an important methodological issue in L2 acquisition research. It is more relevant to research based on the UG theory than to that in the cognitive perspective. It is concerned with the methodological inevitability on the side of the former that there can be no other way to tap competence than through some kind of performance.

It is necessary to note here that the UG theory is concerned primarily with the ideal speaker-hearer of a language. To be ideal means several things. Along with perfection of the linguistic knowledge possessed and homogeneity of the speech community he or she belongs to and freedom from the influence of nonlinguistic factors in employing such knowledge in performance, it also implies that he or she is a fluent speaker and hearer of the language. Not only has the ideal speaker-hearer internalized linguistic knowledge of the language (declarative knowledge), he or she possesses the capacity to employ it smoothly (procedural knowledge with its processing automaticity).

Chomsky (1980:51) admits a theoretical possibility that 'one could know a language without having the capacity to use it.' But so far as linguistic knowledge can only be viewed through windows of performance, performative
capacity must be presupposed in this type of research. While linguistic performance does not provide 'a criterion for the possession of [linguistic] knowledge,' it provides 'evidence for possession of [linguistic] knowledge' (Chomsky, 1980:48). Thus, the subject for linguistic inquiry must be able to show evidence of the knowledge via performance. Of course it is not the kind of spontaneous speech that researchers use for linguistic inquiry; it is a particular type of performance: most often grammatical judgment of given sentences.

Although in language acquisition research in general, spontaneous speech is used as the data for analysis, special types of performance are used in the research paradigm based on UG. In L1 acquisition research, an act-out task and a picture-identification task are used. (Younger children cannot make grammatical judgments properly.) It must be stressed that in order to perform these comprehension tasks, children must possess the capacity to use linguistic knowledge for comprehension. Considering the abundance of time and opportunity L1 learners have for utilizing the knowledge, it is probably safe to say that they have developed the processing capacity of the knowledge they have at the time. In other words, it is safely presupposed in L1 acquisition research that the subject possesses both declarative and procedural types of linguistic knowledge and processing automaticity of the latter type.

It is important to notice that the same presupposition is held in L2 acquisition research based on the UG theory. Here, such tasks as an act-out, a picture-identification, an elicited imitation are used to elicit data along with a grammatical judgment task. These methodological selections imply the same logic in L2 acquisition research; in order to show evidence for possession of linguistic knowledge, L2 learners must be able to perform these tasks. Thus, it must be a presupposition that they have both declarative and procedural knowledge of the language. But importantly it is not always the case that the presupposition is met with L2 learners. As is pointed out earlier, they can develop declarative and procedural knowledge of the language to different degrees. Many L2 learners may lack in the procedural knowledge in spite of their declarative knowledge of the language. And even if they may possess both of them, they still can be primitive in the functional automaticity of the procedural knowledge. In either case, they may fail to provide evidence for possession of declarative knowledge of the language. It is not necessarily the case that the results of L2 learners with these tasks can be interpreted to reflect their underlying competence directly.

It must be stressed that L2 acquisition research done so far in the paradigm of the UG theory sometimes fails to recognize the potential problem in interpreting the data gathered through such tasks. The typical of such a case can be seen in the research carried out with the data gathered by the elicited imitation task. Elicited imitation requires the subject to reproduce the sentence orally just after he or she hears it in an interview situation. Oral production
presupposes the capacity to utilize linguistic knowledge for oral production. Thus, failure in the task does not necessarily indicate that the learner lacks in the knowledge itself. It is wrongly assumed in some research (e.g. Flynn, 1987, 1989) that failure in elicited imitation directly reflects lack of the knowledge.

The origin of the mistake may be traced to a simplistic assumption that the research paradigm of the UG theory can be equally applicable to L2 acquisition research. In the paradigm, subjects are native speakers of the language and they can be justifiably expected to have both linguistic knowledge and the capacity to use the knowledge. Researchers here can be indifferent to the capacity of their subjects because its possession is a theoretical precondition. Thus, it is a serious mistake to preserve the same indifference in L2 acquisition research where the indifference can not always be justified.

The distinction between declarative and procedural knowledge of language, and the corresponding definitional difference of language acquisition may be related to another argument in L2 acquisition research. The issue of interlanguage variability is one of them. The interpretation of the variability phenomenon changes according to the way of defining language acquisition; what is the nature of linguistic knowledge acquired? In the UG theory the knowledge is assumed to be homogeneous, and thus, L2 researchers in this theoretical framework attribute the variability to extraneous performance factors (Gregg, 1990). When the knowledge is envisaged, however, in a wider context, that is ‘knowledge of how to produce or comprehend’ (Tarone, 1990:395), a different interpretation is conceivable. Here, the knowledge is interpreted to be heterogeneous; different kinds of knowledge are utilized in different situations. The argument on interlanguage variability is really ‘an argument about what needs to be explained and what facts need explaining’ (Ellis, 1990b:390).

References


第2言語習得研究の変遷について

山 田 俊比古

1970年代に開始された第2言語習得研究の変遷の過程を、主要な研究アプローチの変化として議論する。取り上げる主要なアプローチと、そのアプローチによる研究が集中的に行われた時期は次のとおりである。

(1) 教授的アプローチ（60年代）
(2) 記述的アプローチ（70年代）
(3) 説明的アプローチ（80年代）

それぞれの時期の研究について、そのアプローチを動機づけたもの、アプローチの特徴、研究成果およびその限界について述べる。

90年代の特徴として、普遍文法理論に基づく研究のさらなる隆盛と、そのアンチテークノでの認知的アプローチによる第2言語習得研究の活発化を予測する。後者のアプローチによる研究が扱うべき領域を、前者が指摘する領域として位置づけ、その研究が持つ重要性を強調する。

研究アプローチの変遷は、活発な研究分野が持つ必然的で健全な過程であり、それぞれのアプローチを排他的ではなく、相補的なものとしてとらえる必要のあることを具体的に示す。