Studies in the History of the Language Sciences
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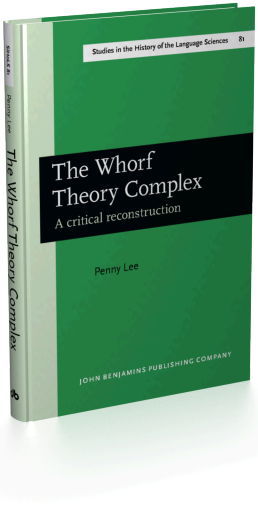
Preface

https://doi.org/10.1075/sihols.81.preface



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The Whorf Theory Complex: A critical reconstruction
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[**Studies in the History of the Language Sciences**, 81]
1996. xix, 324 pp.

PREFACE

Of linguistic scientists working in the decade 1931–1941, Benjamin Lee Whorf (1897–1941) is probably the most widely known today. References to his ideas about relationships between language, mind, and experience are often made in texts written for students of language, psychology, education, intercultural relations, and philosophy. And yet for most people knowledge of what he said is either second hand, or limited to a few frequently quoted statements, or perhaps to one or two of his published papers. Often Whorf's treatment of what he called 'the linguistic relativity principle' has been discussed only in the context of a famous paragraph by Edward Sapir (1884–1939) which Whorf prefixed to the paper entitled "The relation of habitual thought and behavior to language" which he wrote as a memorial to his mentor. The term 'linguistic relativity principle' as such is not mentioned in this paper, which predates other articles where definitions and more explicit explanations are provided.

Whorf's investigations of the role of language in cognition and the precise nature of relationships between linguistic thinking and human experience are of enduring interest because people like to think about what is involved in thinking. We are reflective beings and our capacity to think about our own behavior, including our own cognitive behavior, is crucially involved in what makes our species distinctive and powerful in the ecology of the world as a whole. It is quite possible that this capacity is a direct outcome of our ability to talk; that talking, as Whorf claimed, with its unique repercussions for our species' cognitive development, is what gives our thought processes their distinctive character and directs their reflexive potential. Certainly it is language in all its forms (including mathematical) which allows the most precise communication of thought, whether at the level of mundane personal and community interaction or in the most sophisticated reaches of science and philosophy. Awareness of the way we talk is at the heart of our ability to refine or extend the way we think and to focus our thinking for greater clarity and power. Awareness of other ways of talking can help us expand our conceptual repertoire, and in doing so, broaden our experiential universe.

Whorf's theorizing ranged over far more ground than has usually been acknowledged. Although most discussion of his ideas has been limited to consideration of what commentators have often preferred to call the 'Sapir-

Whorf' or the 'Whorf hypothesis' rather than 'the linguistic relativity principle' (which was Whorf's own term) this element is only one aspect of a complex of interweaving theoretical strands which I call 'the Whorf theory complex'. The more important insight, which provides the theoretical context for the notion of linguistic relativity itself, is that much of human thought is linguistic in character. It is a product of socialization — of linguistic enculturation. In the realm of linguistic thinking there is little point in arguing about whether language influences thought or thought influences language for the two are functionally entwined to such a degree in the course of individual development that they form a highly complex, but nevertheless systematically coherent, mode of cognitive activity which is not usefully described in conventionally dichotomizing terms as either 'thought' or 'language'.

Of course we remain capable of nonlinguistic thinking also as we mature and some of Whorf's theorizing deals directly with this issue. Taking what we would now regard as an essentially 'experientialist' stance, he examined the relation of language to experience in some detail, carefully differentiating between linguistic and nonlinguistic 'interpretations of experience'. His thinking in this regard is compatible in broad terms with that of psychologist, Jean Piaget (1896–1980), whose reasoning about the role of nonlinguistic cognitive development has provided foundations for important work in child language acquisition which is very compatible with Whorf's insights (e.g., Bowerman 1988, 1989). There are affinities too with philosopher Mark Johnson's (1987) current 'body in the mind' arguments about the grounding of concept formation and reasoning in the primary experiential interface of the human body with the rest of the world. Continuing work in cognitive linguistics suggests that, in contrast with philosophical assumptions that reasoning has an essentially mathematical character, much of it is imagic or metaphoric and elaborated from patterns involved in processing primary experiential data.

There is a danger that in thinking of the conceptual system (in either its mathematical or imagic dimensions) as something which underpins language — as it certainly does in some fundamental respects — we may find it difficult to think of it also as interpenetrating language and being directed by it over time in the course of ontogenesis. Too many linguists today, just as philosophers, psychologists, and linguists have generally done in the past, continue to dichotomize language and thought, taking the fact of their separability in some respects as unnecessarily fundamental to their operation in others. But if patterns of imagery used in reasoning are significantly acquired in the course of linguistic enculturation and constantly reinforced in the most mundane as well as the most esoteric talking done in daily life, then there are good arguments for understanding these patterns as elements of systems of linguistic thinking where what

is conceptual is inseparable from what is linguistic. The point is, that without the imagery and the patterns of conceptualization which it constitutes, the associated language is meaningless. Human language is essentially meaningful and formalistic use of the term 'language' to mean something divorced from that languaging activity[1] which constitutes the bulk of mature understanding, imagination, and reasoning, goes against the way the word is used ordinarily.

Certainly some kinds of thinking, such as practical problem solving, remain largely or perhaps even entirely nonlinguistic in character throughout life and may be thought of as operating with limited connections to linguistic thinking. The patterns of understanding we acquire before language through our primary interface with the world and continue to consolidate in the mind/brain throughout life are also nonlinguistic in essence even after they have been incorporated into systems of linguistic thinking. But Whorf argued that what is distinctive in a species specific sense about our thinking taken as a whole is its linguistic character. And in providing something very much like what we would now call a connectionist explanation of linguistic organization in the mind/brain he made it clear that any mental activity which activates any linguistically acquired linkages or connections at all must be considered part of the overall function of linguistic thinking.

When it comes to classical conceptions of reasoning, philosophers themselves have observed that patterns of grammar are involved in structuring reasoning processes. Whorf, with others of his day, emphasized that the kind of thought which Westerners have traditionally considered most typically human is (whatever else it may be) very much a cognitive elaboration of grammatical patterns acquired in the course of linguistic enculturation.

In this book I try to present something of the scope and detail of the Whorf theory complex, showing where the linguistic relativity principle fits into the whole and suggesting where further theoretical and practical work needs to be done to validate or clarify Whorf's insights. My conclusions are based on investigation of a much wider range of original writings than has been dealt with in previously published work. As well as Whorf's published papers, mainly in the collection edited by John B. Carroll (b.1916) in 1956 as *Language, Thought, and Reality: The selected writings of Benjamin Lee Whorf*, I have also

[1] I use the term 'language' as a verb in order to deal lexically with speech and thought as a single function when such a concept is logically required by the rest of what is being said. According to this way of talking we have the capacity to language and are languaging beings, or beings who language. Whorf (1940i:2) set a precedent for the nonnominal use of the word when he referred to what is "languageable", putting the word into inverted commas. I have followed Humberto R. Maturana (1987) who writes of "languaging", "our languaging", "the domain of languaging", "manners of languaging", "operational relations in languaging" and so on (as well as being "in language"), all without inverted commas. If we can say that we breathe, talk, think, walk, or sing, there is no reason why we should not also say that we language.

referred to a large selection of his unpublished correspondence, notes, and other writings held in the Yale University archives. Additional letters and notes have been located in collections of papers left by several of his contemporaries. But the work of reassessing Whorf's ideas has only just begun. Not only is there much more work to be done on papers currently available to scholars but additional documents retained by the Whorf family may also prove important in revealing the detail of his thinking when these eventually become available to researchers.

What is offered here is not a biography of Whorf, although glimpses of his personality and private life are sometimes included where they seem pertinent to his intellectual work. The best current biographical introduction is still Carroll's introduction to the collected writings. It is the source generally used in summaries of what is known of Whorf's personal life and rather than draw from it as others have done I would rather refer readers to the original.

Ben Whorf, as he was known to his peers, remains in some respects an enigma to us today. Well accepted as a scholar in his own day by linguists, anthropologists, and archeologists, he was, nonetheless, something of a maverick from the point of view of many — a member of the *avant-garde* according to Frank T. Siebert (1990, p.c.), an elegant business man according to Henry M. Hoenigswald who met him in Trager's office at Yale in the late 1930s (1990, p.c.) and, in his daughter's words, 'a free thinker'. When other linguists were afraid that the excesses of what they called 'mentalism' would seduce them from real science (by which they often meant behaviorism), Whorf was able to think more clearly about what was involved and argue for a more moderate stance while at the same time accepting most of their basic empiricist premises. He could do this because his thorough training in the physical sciences gave him a more broadly informed understanding of scientific inquiry than most of his linguist contemporaries. He also seems to have had a more comprehensive conception of the mind than most linguists and psychologists.

In contrast with most of their colleagues who went on to prominence in the 1940s and 1950s, neither Whorf nor Sapir was afraid to read nonbehaviorist psychology, both incorporating ideas from gestalt theory, for instance, into their own work. In Whorf's case this produced some of his most thought provoking constructs: the notions of 'isolates of experience' and 'isolates of meaning' and arguments associated with the use of these terms which are crucial to his experientialist stance and central to his understanding of linguistic relativity. Being a chemical engineer by training and profession, Whorf's understanding of the world and the human mind was also strongly influenced by his knowledge of chemistry and physics. For instance, he once called a talk on linguistics devised for a lay audience "The chemistry of thought". His interest in modern physics

was strong throughout his life and, like the philosopher, Alfred North Whitehead (1861–1947), whom he evidently read, and the physicist, David Bohm (1917–1992) in more recent times, Whorf drew conclusions about the structure and organization of the mind/brain which have strong affinities with concepts in Eastern philosophy as well as modern physics. This was no accident. As a theosophist Whorf was familiar with patterns of explanation and reasoning originating in Asia and incorporated these into his own particular blend of physics inspired psycholinguistics. The result was an emergent science of the mind which, while fundamentally empiricist in orientation, is also deeply philosophical and humanist in temper and firmly grounded throughout in the science of linguistics.

Whorf's theories were emergent rather than fully developed mainly because of his personal circumstances. Although he had begun the study of language as an independent scholar and a young man in the 1920s, his work only really took off in directions which were acceptable to linguistic science after he met Sapir in 1928 and began to study part time under him in 1931. Details of this early influence are summarized briefly below and provided in more detail in chapter one. Whorf's conventional linguistic studies during the years that followed were focused on Hopi and Aztec, complementing earlier work he had done on a range of languages, especially Hebrew, Nahuatl, and Maya. Although he maintained and developed his interest in the role of language in cognition throughout this time, he tended to share his most revolutionary ideas only with close colleagues. In 1938 however, at the height of a phase of intense intellectual activity, he discovered he had cancer. After the setback of a major operation followed by the primitive form of radiotherapy available at the time, he eventually began to write again, producing five of his best known papers before succumbing to the disease in mid 1941[2].

Whorf himself did not talk about his work in terms of a complex of interweaving strands of theme and theory in the way I do, although he certainly had a focused 'research program' in the sense used by Imre Lakatos (1927–1974) in 1970. Its broad goal was to find out more about the human mind through study of language. He also had a strong sense of his own innovativeness and a sometimes desperate passion to share his insights. In his last highly productive years his primary goal seems to have been to get his ideas out into the public domain in whatever form he could. It is for this reason that some of his most perceptive, clearly stated, and subtle insights are to be found, not in papers for linguists but

[2] Details of Whorf's final illness were given to the author by medical doctor and linguist, Frank T. Siebert Jr. who was acquainted with Whorf in the late 1930s and who was told the details of his operation by Charles F. Voegelin in 1939. Whorf also mentioned his operation and the debilitating treatment which followed in a letter to George L. Trager (Whorf 1938e).

in articles written for scientifically trained graduates of his alma mater, The Massachusetts Institute of Technology, Cambridge, Mass. (MIT), or for readers of the Indian journal *The Theosophist.* In spite of the constraints he worked under, Whorf's writing is coherent and often elegant, with range and depth that have been acknowledged and respected by some commentators but too frequently ignored by many. Hasty and inadequate reading of his work, or readings which fail to take into account the intellectual climate and assumptions of his day, have too often led to unwarrantedly superficial interpretations of his ideas. In an attempt to at least partially redress this situation I have tried to bring relevant historical background information to the fore as well as pulling strands of thought together from scattered sources, many of which may be difficult for readers to locate independently.

The history of Whorf's debt to Sapir, for instance, is an interesting one. Many of the ideas about the nature of the human mind which Whorf elaborated in his last years occur in embryonic form in his earliest work, before he came under Sapir's influence. Examples include interest in semantic 'connection', mental 'rapport systems', 'psycholinguistic patterning', and (within a theory of 'oligosynthesis') a chemical explanation of conceptual structure and organization. To these ideas Whorf added Sapir's 'points in the pattern' insight about the organization of systems of information acquired in the course of socialization, the paradigm case being that of the internalized phonemic system which we can now appreciate more fully in the light of its affinity with systems and connectionist thinking. An explicitly Einsteinian use of the term 'relativity' in relation to language is found first in Sapir. (The phrase 'linguistic relativity' comes into Whorf's currently accessible writings only eighteen months before his death). When Whorf learned about gestalt phenomena in human perception the interest in pattern and configuration which he shared with his contemporaries in linguistics and anthropology seems to have taken on a new character for him and provided the impetus for the development of a comprehensive approach to the study of all aspects of language which he called 'configurative linguistics'. This methodology, which is yet to be fully evaluated or developed, includes much that is of value to modern investigators, particularly those who wish to study language in the context of culture or whose primary interest in language is conceptualist.

In summary, Benjamin Whorf was an extraordinary person whose theories about linguistic thinking developed more than half a century ago anticipated in several respects ways of talking and thinking about language in cognition which are only now gaining currency in cognitive science. His linguistics, from his earliest investigations through to the work influenced by Sapir and gestalt psychology, was always conducted as a means of finding out more about the way

we think. It was also profoundly humanistic in a way which has much to offer science in general and which needs to be central to the human sciences.

At a time when awful conflicts involving struggles for food, territory, and power overwhelm some people while others play at an ever accelerating rate with technology which is both the product and instrument of human intellectual development — or use that technology to shift intra species conflict into yet more horrific dimensions — we do well to take a closer look at Whorf's ideas. Our survival as a species, he argued, may depend on "future developments of thinking". These in turn have to do with relational operations "on the mental or intellectual plane", operations which are "inescapably bound up with systems of linguistic expression" (Whorf 1937c[LTR]:83-84)[3].

The study of language provides us with our most immediate and challenging access to the study of those aspects of cognition which are distinctively human. Just as talking provides a basis for all science and human development, understanding the way we talk can help us understand and, where necessary, redirect the way we think.

[3] Page numbers for all of Whorf's writings which were reprinted in 1956 in *Language, Thought, and Reality* are indicated by the initials LTR in the citation. The date in all citations and the first date in bibliographical listings is the date of writing except where a question mark indicates that the year is not certain. Whilst this may lead to some discrepancies in relation to other works on Whorf, my purpose in using the date of writing in this book is to make it easier for readers to track developments and changes in his thinking.