

Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf, second edition

Benjamin Lee Whorf

edited by John B. Carroll, Stephen C. Levinson,
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introduction by John B. Carroll

foreword by Stephen C. Levinson



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Foreword

Stephen C. Levinson

Whorf's Claims and Their Reception

This little book has had an extraordinary career.¹ Initially admired, then reviled, then rehabilitated, then once again attacked, it has proved unsinkable. This is all the more surprising given the contents: a handful of rather dated papers on Amerindian linguistics, a couple on ancient Mesoamerican writing systems (also now dated), four papers for a general audience about language differences, and some unfinished manuscripts found among the papers of the author after his premature death. This is not the kind of material that one would have expected to inflame the passions or rouse phlegmatic scholars of linguistics and psychology from their detailed and meticulous pursuits. How surprising, then, that Pinker (1994, 57) announces, "But it is wrong, all wrong," or that Deutscher (2010, 21) calls Whorf "that most notorious of con men." (For the other side of the story, see Lucy 1992a; Lee 1996, 2000.)

Why has this book caused such a row, a flaming controversy that continues over a half century later? One reason is that the ideas sketched in the book suggest that the structuring of

1. This foreword replaces the original by Stuart Chase, whom Whorf viewed as a dubious champion (Lee 1996, 16). I am grateful for suggestions from colleagues, especially Penelope Brown, Melissa Bowerman, Mark Dingemans, Nick Enfield, Penny Lee, and Pim Levelt.

particular languages is altogether too interesting to be left to the plodding philologists, and specifically that the implicit patterning in languages might have something to do with how we think, whatever the psychologists tell us. Simple exposure to this message has turned on generation after generation of students; suddenly the arbitrary rules and conventional clothing of languages seem to have a new significance. Over a beer, many eminent researchers in the language sciences will confess that they were first drawn into the study of language through the ideas associated with Benjamin Lee Whorf. In short, a seductive, revolutionary set of ideas is buried in these pages, and they are in a form that permits enough latitude of interpretation to rekindle the flames of controversy at any point.

Before we proceed, something should be said about how the book came about. Whorf's combined career, as businessman and linguist, is outlined in the introduction by John B. Carroll. Whorf had died in 1941 at forty-four. A dozen years earlier, when just a boy, Carroll had fallen under Whorf's spell, meeting him in the library where Whorf liked to work (Lee 1996, 8). When, after World War II, a number of conferences met to discuss ideas at the intersection of psychology and language—and thus inevitably Whorf's own ideas—the need for such a volume became apparent, and Carroll, now a psychologist, was the natural editor. Whorf published some thirty papers in his lifetime, many of which were concerned with ancient Mesoamerica, including one of the first works (Whorf 1933, not republished here) to argue systematically for the phonetic character of the ancient Mayan script.² Whorf's published oeuvre on

2. Whorf was wrong about many details, but as Tozzer put it in the introduction to the monograph, "With great acumen and courage Whorf dares to re-open the phonetic question" against the received view of the time (Danien and Sharer 1992, 35). Moreover, "his assumption that Maya writing recorded a Mayan language proved to be crucial to decipherment" (Sharer and Traxler 2006, 141).

the topical ideas about the connections between linguistics and psychology, including four popular papers, was thus relatively slight, and Carroll supplemented it with unpublished material (see Lee 1996 for supplementary information, including what Lee calls the Yale Report, an important manuscript that clarifies Whorf's position on many counts and is included in this second edition of his writings). The book we have consists of the fragments from the pen of a part-time academic whose life was cut tragically short. The fragments span some fourteen years, during the middle of which his work became much more sophisticated through personal contact with Edward Sapir, and the ideas are therefore not entirely consistent from beginning to end. This hampers both sympathetic exegesis and determined condemnation, since it is often possible to find an exclusion clause on the other side of the argument.

Apart from the fragmentary picture presented by the papers reprinted here, our reading of Whorf is hindered not only because we inhabit a distant intellectual clime but also because Whorf was not a characteristic child of his times. For example, the psychology of the time was heavily behavioristic (as was Leonard Bloomfield's linguistics, the leading theory of the day), and although Whorf admired Bloomfield and presumed the importance of conditioning (as in his emphasis on habitual language use and a kind of proto-connectionism he sketches), he drew more extensively on Gestalt psychology, as Lee (1996, 2000) shows in detail. Whorf, a chemical engineer by first training, was widely read and eclectic, and it is not easy to identify all the intellectual currents in his thought (for a review of the relevant contemporary thought, see Koerner 2002 and Levelt 2012).

With these caveats, let us try to identify some of the central ideas surrounding the notion of "linguistic relativity" that have made this book so provocative. The doctrine has the following central tenets (with page references to the current volume):

1. Thought and perception have a certain independence from language (207–208).
2. Nevertheless some aspects of thinking are deeply interconnected with language and the concepts it provides (84–87).
3. Some of these interconnections are backgrounded because the concepts are implicit in grammatical distinctions. Some grammatical concepts are especially covert in that they do not have direct exponents in surface forms. Such concepts may highlight specific percepts (e.g., number or shape of referents) and group them at the expense of others that may be prominent in other languages (116–119). They are recurrent categories that, given the structure of the language, we cannot fail to use (70–71).
4. Nevertheless such grammatical concepts, especially when they are covert, exist beyond our conscious awareness and may influence our classifications and reactions (133–134, 174).
5. These grammatical distinctions form an interconnecting web of concepts, which may represent in a partial and fragmented way (187–190) a particular take on the perceptual world associated with a language and culture.
6. The ways in which languages offer different such takes make them invaluable correctives to our own commonsense views about the nature of human experience (313–314).

From these premises, Whorf derives “‘the linguistic relativity principle,’ which means, in informal terms, that users of markedly different grammars are pointed by their grammars towards different types of observations and different evaluations of externally similar acts of observation” (282–283).

This perspective on language has had the polarizing effect described earlier. It suggests that linguistic difference is fundamentally interesting and important; that formal difference tends to imply conceptual difference; that conceptual distinctions may cohere in a system; and that when we lose a minor

language (as we are now doing at the rate of one a week), we lose a different protoscientific take on the world, something inestimably valuable.

This contrasts markedly with Chomsky's or Fodor's view that what is centrally interesting about language is universal, that formal differences are superficial, lack conceptual resonance, and mask underlying conceptual uniformity. The loss of languages arguably has no substantial impact on the goals of linguistics, which are to unearth the innate, underlying machinery.

These two diametrically opposed views account for much of the controversy surrounding this book. Is the diversity in our communication system, unique among animals, its essential hallmark or merely a smoke screen obscuring its essence (see Evans and Levinson 2009 for discussion)?

The flames have been further fanned by a systematic misreading of Whorf as an extreme empiricist. Whorf's language ("kaleidoscopic flux of impressions," "flux of experience," etc.) has suggested to many observers that he held that the "external world was essentially unstructured from the point of view of the speaker" (Lucy 1992a, 42). But Lee (1996, 89) shows that this is a serious misinterpretation, and indeed Whorf could hardly be clearer when he says that "the apprehension of space is given in substantially the same form by experience irrespective of language" (203) or "visual perception is basically the same for all normal persons past infancy, and conforms to definite laws" (209). His point was that the way in which percepts are organized conceptually, and thus given "meaning," relies crucially on language. Whorf's enthusiastic support for Gestalt principles shows clearly that he presupposed innate psychological principles (which led to muted reception of his ideas in the 1950s). An incomplete draft paper on cognitive universals unfortunately could not be completed before he died (Lee 1996, 220). The idea that Whorf claimed that "thought is the same thing

as language” (Pinker 1994, 57) is not based on a careful reading of this book. For these reasons, Whorf never remotely subscribed to what has been called “the strong version” of linguistic relativity, under which a language exerts a wholly deterministic effect on thinking, so that we are all locked in the infernal grip of our languages.

Part of the vituperation against Whorf is based on that crucial misreading. Part is also based on his analysis of Hopi, which he appeals to frequently in these pages as an example of a radically different organization of grammatical categories and their underlying conceptualizations, especially in the domain of time. Malotki (1983) published a long monograph on the temporal concepts encoded in Hopi grammar and lexis, in which he argued that Whorf’s claims about Hopi were empirically wrong in most details. Nearly every empirical scientist undergoes the discomfort of being proved wrong as science advances, and Whorf would undoubtedly have been pleased that Malotki had taken the trouble to get to the bottom of the facts. Whorf, it seems, was definitely wrong about the lack of spatial metaphors for time in Hopi (although we must remember that Whorf was working a half century earlier, when Hopi was less influenced by English). But Hopi does in fact use a highly unusual system of temporal reference, namely, a future–nonfuture tense system (Malotki 1983, 624). Now, as Lyons (1968, 306–311) points out, it is often questionable whether a future tense is actually a tense as opposed to a modal marker of *irrealis*, especially in the absence of any other tense notions, and this is exactly what Whorf was getting at (he was completely clear that there were tenselike morphemes; the question hung on their proper interpretation). Many other of Whorf’s points were correct. The word for “day” is, Malotki (1983, 241) admits, “quite remarkable” in being both nominal and verbal (thus, according to Whorf, belonging to a special word class) and co-occurs normally not with cardinal numbers but with ordinals,

as Whorf suggested. Readers should thus not take either Pinker's (1994, 63) or Deutscher's (2010, 143) casual dismissals of Whorf's claims to be well founded; they will find more careful treatment in the work of Lee (1991; 1996, 136–142).³

Whorf was a complex, multistranded thinker, and critics who rush (often without reading this book) to demonize or defend him usually do so for ideological reasons of their own, motivated by the great divide between those who wish to see deep significance in the structure of the ancient languages we have inherited and those who view those languages as mere variant clothings on a universally innate conceptual structure. Readers would do well to approach this book from a more neutral perspective, bearing in mind that the final four chapters were written for a popular audience.

Language and Thought: The Legacy

As mentioned earlier, Whorf's ideas provoked substantial discussion in the postwar years. Part of this discussion concerned the

3. Internal evidence makes it clear that, while accusing Whorf of unscholarly behavior (Pinker 1994, 63; Deutscher 2010, 142), neither Pinker nor Deutscher has actually read this book with any care. Deutscher (2010, 142), for example, claims that Whorf never visited the Hopi, whereas Carroll in his introduction (this vol., 21) makes it clear that he did; and Pinker (1994, 60–61) wrongly attributes some of Whorf's examples to Apache, pointing out that Whorf "did not actually study any Apaches; it is not clear he ever met one" (the examples at the bottom of Pinker's p. 60, in fact, come from Nootka [302, 310] and Shawnee [215–216, 267]). Detractors like Pinker often remark on Whorf's amateur status, but amateurism is not the right gloss for a man who published three or more scholarly papers a year, often in the top journals of his profession, taught at Yale, enjoyed the regard of the leading scholars of his day, and contributed enduring terminology to the discipline. Like Darwin, Whorf simply preferred the comfort and independence of his own means.

revival of ideas about “worldview” and possible correlations between language and culture (see Lucy 1992a, 69–95). These concerns play little role in debate today (though see Everett 2005 for a revival). A second strand of work has much more contemporary resonance, in which Whorfian ideas are put to experimental test. Brown and Lenneberg (1954) argued that to explore the relations between language and thought, the two must be independently assessed, and correlations demonstrated. They chose the color domain and showed that the ease of remembering color patches correlated with the ease of describing them in the language (English, in this case, but a follow-up study by Lenneberg and Roberts [1956] extended the demonstration to Zuni). Thus began a long tradition of work that explored language-specific coding in a domain and its effects on memory and recognition, to which we will return.

As Lucy (1992a) and Lee (1996) pointed out, Brown and Lenneberg’s explorations of interrelations between language and thought do not draw in any detail on Whorf’s ideas, which focused on implicit categories in grammar. Carroll, the editor of this book, followed up directly with an experiment that exploited the shape specification in Navajo verbs: Navajo-speaking and English-speaking children on the Navajo reservation were tested in a triads task where shape was pitted against color, and yielded a result in the predicted direction (Carroll and Casagrande 1958), although other nonlinguistic factors were also clearly at work. Only a thin strand of work on grammatical categories and their effects on cognition followed this until Lucy (1992b) systematically tested the effects of grammatical number in English versus Yucatec: he showed that true Whorfian effects could be found in memory; lack of plural coding correlates with failure to notice the numbers of entities.

With the rise of the cognitive science movement in the late 1950s, interest in Whorfian ideas was more or less fully eclipsed for the reasons already sketched: mental life, it was argued, is

built on a great foundation of innate cognitive machinery on which language difference could be expected to have only the most superficial impact. Our thoughts, indeed, are supposed to be couched in a universal mentalesse (Fodor 1975). One specific study was thought to bury Whorf: Berlin and Kay (1969) showed that underlying the apparent “kaleidoscopic flux” of the color spectrum there seem to be clear universal perceptual attractors, which channel the possible color categories recognized by different languages. Actually, this study hardly engaged with Whorf’s position, since he recognized perceptual universals and downplayed the importance of lexical distinctions; but by now few were reading him carefully, and “Whorfianism” came to stand for an extreme empiricism and a view of unbounded linguistic variation that he never held. Whorf thus became a bogeyman and whipping boy, branded an incompetent amateur, mystic, or worse.⁴

It was not until the 1990s that general interest revived in language difference and its possible effects on cognition, spear-headed by anthropological linguists, but running parallel with the growth of linguistic typology and a growing interest in mapping language variation. A Wenner-Gren conference in 1991 seriously reopened the issues (Gumperz and Levinson 1996), and Lucy’s (1992a,b) review of the issues and demonstration of the cognitive effects of grammatical coding showed the feasibility of such research, based on careful linguistic analysis and cross-cultural comparison. Brown and Levinson (1993) showed systematic effects of spatial language on memory and inference for spatial scenes, work that was taken seriously in psychology (Levinson 1996). A long-running controversy began over the role of linguistic distinctions in spatial thinking (see Li

4. “No one is really sure how Whorf came up with his outlandish claims, but his limited, badly analyzed sample of Hopi speech and his long-time leanings toward mysticism must have contributed” (Pinker 1994, 63).

and Gleitman 2002; Levinson et al. 2002; Levinson 2003a; Haun et al. 2011; Li et al. 2011).

Meanwhile another strand of work was showing the impact of linguistic categories during child development (Bowerman 1996), as reflected in a broad conference in 1995 (Bowerman and Levinson 2001), in which the special role that language may play in connecting domains and forming concepts was explored from many different angles. Bowerman and Choi (2001), for example, summarize a series of studies showing that by as early as eighteen to twenty-one months, children learning English versus Korean become sensitive to cross-cutting spatial semantic distinctions: *in* versus *on* (containment versus support) for English and *kkita* versus *nehtha* (tight fit versus loose fit) for Korean. Further work using nonlinguistic behavioral measures showed that while prelinguistic infants from both language backgrounds can discriminate between “tight-fit containment” and “loose-fit containment,” learners of English gradually lose sensitivity to this distinction, while learners of Korean retain it (Choi 2006; McDonough, Choi, and Mandler 2003). This suggests an early specialization toward the categories of the target language.

This work fitted well with new considerations coming from psycholinguistic processing, where it was clear that online language production requires a regimentation of thinking in the categories specific to the language (Levelt 1989), so that cross-linguistic differences must exist in “thinking for speaking” (Slobin 1987, 1996). These ideas are quite close to Whorf’s, who (in an often-misunderstood passage [272–274]) emphasized the “obligatory” nature of grammatical coding, a point also made by Boas and others. Whorf went on to predict that we should be able to identify different patterns of gesturing according to the online categories required (198). We now know that different gestural patterns indeed correspond to the grammatical distinctions made in languages (Kita and Özyürek 2003). One theoretical argument also suggests that these language differences must

have more than temporary, online effects during speaking; language use is our most practiced skill, and long-term repercussions are bound to arise from the need to code experience in language-specific ways (Levinson 1997, 2003b).

These developments served to reopen the discussion of possible relations between languages and thinking in productive ways. The subsequent strands of work are ongoing. One strand has focused on lexical difference, and in particular on color (Davidoff, Davies, and Robeson 1999). Careful work has shown that speakers of languages that make different color distinctions perceptually warp the color space (Winawer et al. 2007), owing to participation of the left hemisphere of the brain, where language circuitry is predominant (Gilbert et al. 2005; Regier and Kay 2009). Further, this left-hemisphere effect kicks in only when infants acquire the relevant linguistic terms (Franklin et al. 2008). Such work makes clear that even if language diversity is constrained by universal factors, the available differences are sufficient to generate cognitive diversity.

Color categories make a remarkable parallel with the findings from sound systems. Here it is uncontroversial that learning a language changes one's perceptual sensitivities in early childhood, so that it becomes increasingly hard to discriminate alien sound distinctions crucial to another language (Kuhl 2004). Whorf, the inventor of the concept of the allophone, was keenly aware of the relativity of speech sounds both across languages and within languages (Lee 1996, 46; 2000, 50), but as we saw, he insisted on a language-independent raw perception and so refrained from making the analogy between speech sounds and conceptual categories.

The effects of language on cognition have now been reported from many different domains, as we have partially reviewed, including space and motion, time, number (both grammatical and lexical), gender, mass/count distinctions, color, and so forth (Boroditsky 2003; Wolff and Holmes 2010; Gentner and

Goldin-Meadow 2003), although the interpretations are by no means undisputed (Gleitman and Papafragou 2005).

Still, Whorf might be disappointed that so much of the work on the relation of language to cognition has focused on lexical coding. He was more interested in the grammatical coding of concepts because he felt that it was especially here that the unseen hand of language could direct our thoughts, and because in this domain a single set of distinctions (as in gender, number, tense) might recur in different parts of the linguistic system. Here research remains relatively slight to this day (see though Bowerman 1982 on *un*-prefixation in English child language). The idea of covert categories with grammatical “reactances” is also little explored, although research with some resonance to Whorf’s ideas can be found in studies of the lexicon. For example, detailed work on the grammar of verbs reveals covert semantic distinctions at work (Levin and Rappaport Hovav 2005), and large-scale structures in the lexicon appear to show underlying implicit semantic oppositions that recur in different parts of the language (Levinson and Burenhult 2009).

Whorf’s papers for general audiences had the specific aim of opening readers’ eyes to the wonders of alien tongues (cf. Evans 2010). Whorf believed passionately in the virtues of linguistic diversity for what it can teach us about the limitations of our selves. He would have deplored the accelerating loss of languages and been a powerful advocate for the documentation of endangered languages, now more urgent than ever.

A Note on the Second Edition

This book reissues all the Whorf papers of the first edition, the text of which has been rekeyed, the artwork rescanned, and the pages reset with a new interior design and new cover. It also includes the original introduction by John B. Carroll, which incorporates the core biographical details about Whorf’s life

used as a starting point by most later commentators. In addition, this edition also contains the “Yale Report,” authored solely by Whorf, although George Trager, whose name appears as coauthor, was probably intended to revise it. Lee (1996, 130) argues that this report is a central document in Whorf’s mature oeuvre, even though it exists only in semi-draft form; her edited version of the manuscript first appeared in Lee 1996, 251–276. We thank Yale Library Manuscripts and Archives and John Benjamins Publishing Company for permission to reprint it here. Penny Lee also provided key words for the indexes, the first edition having none, and took responsibility for the expanded and updated list of publications relevant to Whorf and his ideas selected from bibliographic searches by Karin Kastens at the MPI for Psycholinguistics. She would like to extend her very sincere thanks to E. F. Konrad Koerner and John E. Joseph for their much-valued and timely assistance with the name index (which would have been a much sketchier thing without the depth and detail of their historical knowledge) and, more importantly, for their support and consistent interest over some fifteen years in the possibility of a new edition of Whorf’s writings.

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