some as overly abstract, overly mutable, and vastly underdetermined by data (as if all deep scientific theories were not, at least initially, vastly underdetermined by data). In the computer industry, I have heard the quip that every time a generative grammarian is fired, the efficacy of the machines increases by 5 percent. In those quarters we are in fact witnessing the triumph of brute computational force, admittedly without any claim that those machines indeed mimic what the human mind can do. There are also psycholinguists, child psychologists, cognitive psychologists, neurolinguists, and philosophers of mind and language who have grown impatient with the apparently endless changes in the theory. The news of another turn in generative grammar has not been well received in some quarters, and has confirmed some in their antecedent skepticism. There are linguists who are actively exploring other avenues in syntactic theory, staying closer to traditional models (notably exploring combinations of generativism with the older structuralist phrase structure grammars). Much will be said in this dialogue that is apt to dispel such skepticism and counter these conservative moves.

In my view, the central ideas of generative grammar that are especially chosen as targets for skepticism, and that are most persuasively defended in this book, are these:

1. Words, and groups of intimately associated words (constituents), can be moved from one place to another, generating closely related sentences and *preserving certain salient properties* (e.g., the power to select types of arguments; to refer to a particular entity; to be coreferring; to specify an agent, an object, etc.). Syntactic principles must be *invariant* with respect to these movements (or "transformations" in the terminology of the 1950s and 1960s). An obvious, but all-important, consequence is that syntactic principles in this theory, unlike the "rules" of traditional grammars, cannot be directly sensitive to word order as it is manifested at face value in linguistic expressions.

2. There are essential linguistic entities that have no physical manifestation (called by Chomsky "empty categories") but that are nonetheless present to the mind of the speaker and the hearer and can have manifest effects on the audible and visible elements. (Chomsky's first instances—in hindsight—were of the following kind: The sentence *He saw the man standing at the bar* somehow literally contains the declarative sentence *The man was standing at the bar*, and English speakers all intuitively understand that it does. Therefore, the words *the man was* are mentally present, though they have no physical—that is, phonological—manifestation. No traditional grammar ever paid attention to such facts.)

3. When one or more elements are moved from one place to another, a silent residue (e.g., a "trace," or a "chain" of such traces) is left behind. This is a crucial ingredient of the theory.

4. These silent elements (or chains thereof) cannot occur just anywhere in a sentence, nor are they linked arbitrarily to other manifest or silent elements. Systematic relations, expressed by specific principles, concerning the nature and proper management of silent elements, and the obligatory links within each chain, constitute an essential component of syntax, one that applies uniformly to all languages. It is not at all obvious why the basic design of natural languages should display such elegance and compactness.

This dialogue makes it clear that such central ideas of generative grammar, once suitably reinterpreted and generalized, are correct, revolutionary, and immensely productive for the scientific understanding of linguistic phenomena. Old and new critiques notwithstanding, they are in fact some of the central notions out of which, little by little, the Minimalist Program has arisen.

Nothing ensures that there will not be further important changes in the theory in the near future. In fact, everything suggests that, happily, there will be. That's how all natural sciences advance and grow. Chomsky revealingly insists that it is to be *hoped* that linguistic theory will change the next time a bright graduate student walks into the office to discuss his or her work. This book is ideally suited to explain *why* these revisions and redirections have been essential to the progress of linguistic theory. It may provoke rethinking of an attitude in some quarters of applied linguistics, that the changes in linguistic theory proper are to be deplored, that it may be a waste of time to "experiment" on the consequences of a theory that is destined to be basically revised in a few years—a troubling attitude that can only lead researchers (as Chomsky has mentioned in class lectures) to confine themselves to working on some peripheral and unimportant, and therefore unchanging, aspect of linguistics, or to remain stuck with hypotheses and predictions that have already proven wrong. Why should applied linguistics be exempt from the toil and trouble of doubts, revisions, and fresh starts? In my opinion, much of the new wave of disillusionment arises from sheer impatience, but impatience is hardly ever a reliable counsel in scientific matters. Many of the deep and fascinating questions (let alone the tentative answers to them) that are at the core of the field these days, and that are presented in this dialogue, would have been simply unthinkable ten or fifteen years ago. This is how progress "happens" to a scientific domain.

8

It is vital to recognize that syntactic objects and principles, as masterfully presented in this dialogue, are basic, not derived. (Chapter 4 outlines an interesting attempt to axiomatize "syntactic objects," further refined in an appendix by Jairo Nunes and Ellen Thompson.) In the eyes of the theoretician, these objects possess the same status as, say, particles and fields in physics, and genes in biology. These entities and principles do not in the least resemble those to be found in other cognitive domains, such as perception, motor control, or reasoning. In this sense, they are language-specific, even though they are universal (i.e., true of all human languages, present or past, actual or possible) and even though Minimalism vastly expands the bounds of "virtual conceptual necessity" (i.e., of what about the basic design of human languages must be as it is because it could not possibly, conceivably, be otherwise). This increased emphasis on "necessity" correspondingly restricts the options for possible varieties of languages and for linguistic explanation. It even restricts the latitude for linguistic description. In fact, trying to dispense with a particular technical apparatus makes the task of description much harder, and success in description yields much deeper explanation. Failure to understand cannot be papered over with technicali-

ties that conceal real problems by way of elaborate nomenclature. Therefore, increased emphasis on necessity does not imply that syntax ceases to be autonomous and that the principles of Universal Grammar can now be deduced from general features of functional design, or from truths of reason alone. These principles in fact do have strong intrinsic plausibility and elegance, but they remain language-specific. They are also level-specific, because phonetics, phonology, and (at the opposite extreme) pragmatics are governed by other principles and countenance other basic entities. This is why it remains crucial to stress that syntax interfaces with sounds and meanings, but has a structure of its own. It is not an interface of some sort. Or rather, it is not an interface of *any* sort. There are computations at the syntactic level that are primary and not constrained by anything that is external to them, but that in turn constrain their realizations into sounds and meanings. This is a difficult, though vital, point, and this dialogue contributes significantly to the field by discussing it as clearly as could possibly be done, given the present state of our knowledge.

It is also important to stress that the Minimalist criteria advanced by the present theory, as well as the principles of Universal Grammar advanced by previous versions of the theory, are in an important sense uncaused. To be more precise, they are caused by human nature, presumably by the structure and functioning of our brain, via a quite long, presently unknown, chain of progressively ascending abstract invariants—but they are still, in the Minimalist framework, uncaused by the invariants characterizing other nonlinguistic components of the mind. The autonomy and the primacy of syntax, *pace* the adaptationists, appear to be amply vindicated. The dialogue argues for this position very convincingly.

Finally, having granted that details will continue to change, let us consider what would remain of the theory even if important aspects of it one day proved to be incorrect, or only very approximately correct. The permanent acquisitions are, in my opinion, clear-cut and decisive. Adopting just for the sake of argument a kind of ultraminimalist attitude on the Minimalist Program, the least that can be said is that a theory *like* this *might* be true. The dialogue will persuade us that it is rational to believe at least this much. Thus, one of the remarkable qualities of this field is that a system of considerable complexity, and clearly central to human life, appears to begin to yield, in part at least, "to something with the feel of scientific inquiry" (in Chomsky's own words). But if the central ideas expounded in this dialogue might be true, then syntax might really be autonomous, underived from other linguistic or generally cognitive levels, unconstrained by use or need, and not "learned" under any standard interpretation of this term. It might, therefore, be internally specified (up to the fixing of parameters). Then any attempt to show that it is *necessary* to explain the nature of language by means of forces and principles that are external to it cannot be right. Reductionist neurobiological assumptions are unwarranted, and it can be safely stated that the meandering evolutionary course that has led our species to possess the initial state of the language faculty that we do possess does not have to be steered by any direct selection. More likely, it is to be charted (as it is for so many other biological

organs and traits) following the lines of elaborate, internally constrained, and largely seren-
dipitous morphogenetic transformations. Making all this very clear is one of the signal
merits of the dialogue. These permanent gains are far from insubstantial, even if one were
to take a very prudent attitude toward particular aspects of the theory. But we need not
be, after all, so damn uptight. Let's rather see what the theory says, and why. Chances are
some aspect is, at least in the main, already correct.