1. INTRODUCTION

English auxiliaries show a complex but systematic set of interrelationships between their characteristic construction types. It has often been assumed that, for its proper description, this requires the resources of movement defined over structures (as in the tradition stretching from Chomsky, 1957, to Pollock, 1989, and onwards). An alternative, within Phrase Structure Grammar, has been to appeal to the resources of lexical rules (Flickinger, 1987; Pollard and Sag, 1987) or their antecedent metarules. In this chapter I will give an account of the grammar of these characteristic constructions in Head-driven Phrase Structure Grammar (HPSG), without using lexical rules or movements interrelating structures, but relying solely on the organization of information within an inheritance hierarchy to make relevant generalizations. The demonstration that lexical rules are not required in this area substantially enhances the possibility that lexical rules could be banished from the armory of HPSG in favor of mechanisms of lexical inheritance (extending the kind of approach to valence alternations developed in Kathol, 1994, Bouma, 1997, and to inflectional and derivational relationships in, for example, Krieger and Nerbonne, 1993; Riehemann, 1994). The demonstration is the
more convincing because of the complexity of the interrelationships between auxiliary constructions, and of their interface with negation, which at first sight seems to require a more powerful device than simple inheritance.

This chapter is a development of the lexicalist analysis of auxiliaries given in Warner (1993a). The structures posited and much of the argumentation for them are essentially carried over. But the desire to avoid the device of lexical rules, which played a major role in Warner (1993a), has led to an entirely new analysis. The interrelationships proposed between structures are radically different since they are constrained by the need to state them within a hierarchy of unifiable information, whereas lexical rules permit what looks to the practicing grammarian like a more potent ability to manipulate relationships between feature structures.¹

2. AUXILIARY CONSTRUCTIONS IN HEAD-DRIVEN PHRASE STRUCTURE GRAMMAR

Head-driven Phrase Structure Grammar characterizes linguistic information (lexical or phrasal signs and their components) in terms of feature structures and constraints on those feature structures, where a constraint is, in effect, a partial description.² Feature structures (or attribute value matrices) are themselves defined within a hierarchy of types. Appropriate features are defined for each type, and appropriate values for each feature. Thus the type category will be defined as having values for attributes HEAD and VALENCE. The values of HEAD correspond broadly to part of speech, and one of the subtypes involved here is verb. This is defined as having attributes AUX (with Boolean values \{+ , −\}) and VFORM, with values corresponding to the major morphosyntactic subcategories of verbs: \{fin, bse, etc.\} (finite, base infinitive, etc.). In parallel fashion, VALENCE will be defined as having attributes SUBJ (subject), SPR (specifier), and COMPS (complements), which have as their values lists of synsem objects (that is, of feature structures which characterize syntactic and semantic information) corresponding to the subject, specifier, and complements of the category in question.

Within this framework, I assume that auxiliaries (modals, be and appropriate instances of do and have) share a type verb with nonauxiliary verbs, being distinguished from nonauxiliary verbs as [+AUX] versus [−AUX], that they occur in structures which are like (1) for the reasons argued in Gazdar, Pullum, and Sag (1982) and Warner (1993a), and that they head their phrase.