Introduction

Gradable adjectives can be identified in (at least) two ways: in terms of their basic semantic characteristics, or in terms of their syntactic distribution. Semantically, gradable adjectives can be informally defined as predicative expressions whose domains can be partially ordered according to some property that permits grading. For example, the domain of the adjective tall can be ordered according to a measure of height, the domain of the adjective dense can be ordered according to a measure of density, and the domain of bright according to a measure of brightness. In contrast, adjectives like dead, octagonal, and former do not introduce the same kind of orderings on their domains. Although the domains of these adjectives are partially ordered—those objects for which it is true to say e.g., x is dead or a former x are distinguished from those objects for which these claims are false—it is not the case that objects can be dead, octagonal, or former to varying degrees. Distributionally, the class of gradable adjectives has two defining characteristics (cf. Klein 1980:6). First, gradable adjectives can be modified by degree adverbials such as quite, very, and fairly. According to this criterion, inexpensive, dense, and bright are identified as gradable adjectives, but dead, octagonal, and former are not, as shown by (1)-(6).

(1) The Mars Pathfinder mission was quite inexpensive.
(2) The neutron star in the Crab Nebula is very dense.
(3) The city lights are fairly bright tonight.
(4) *Giordano Bruno is very dead.
(5) *I want the new spacecraft to be quite octagonal.
(6) *Carter is a fairly former president, and Lincoln is an extremely former president.

Although non-gradable adjectives like dead do sometimes occur with degree modifiers, as in *Giordano Bruno is quite dead, such uses are marked, and tend to convey a sense of irony or humor. Such uses indicate that (at least some) non-gradable adjectives can be coerced into having gradable interpretations in contexts that are otherwise incompatible with their canonical meanings. Distributionally, the class of gradable adjectives has two defining characteristics (cf. Klein 1980:6). First, gradable adjectives can be modified by degree adverbials such as quite, very, and fairly. According to this criterion, inexpensive, dense, and bright are identified as gradable adjectives, but dead, octagonal, and former are not, as shown by (1)-(6).

Second, gradable adjectives can appear in a class of complex syntactic environments, which I will refer to as *degree constructions. Roughly speaking, a degree construction is a construction formed out of an adjective and a degree morpheme—a member of the set {er/more, less, as, too, enough, so, how, ...}. For concreteness, I will identify degree constructions as structures in which an adjective occurs in the environments specified in (7), where 'Deg' is a degree morpheme.

(7) [Deg (Adv)* __] [__ Deg]
Examples (15)-(17) show that non-gradable adjectives such as dead, octagonal, and former cannot appear in degree constructions.

(15) Giordano Bruno is too dead to fly on the space shuttle.
(16) The new spacecraft is more octagonal than the old one.
(17) How former a president is Carter?

Degree constructions, and comparatives in particular, have been the focus of much of the work on the syntax and semantics of gradable adjectives in the tradition of generative grammar. The syntactic complexity of these constructions was recognized and discussed in very early work (e.g., Lees 1961, Smith 1961, Pilch 1965, Huddleston 1967, and Hale 1970), and has formed the basis for important developments in the theory of phrasestructure, exemplified by Bresnan's (1973, 1975) detailed analysis of the syntax of comparatives and the adjective phrase and Jackendoff's (1977) investigation of X-bar theory, as well as important work on ellipsis (e.g., Hankamer 1973, Bresnan 1973, 1975, Chomsky 1977, Kuno 1981, Pinkham 1982, Napoli 1983, Hazout 1995). Recent work in the Principles and Parameters framework has sought to reevaluate and recast many of Bresnan's and Jackendoff's insights in light of more current thinking about phrase structure and the relation between lexical and functional categories (see in particular Abney 1987, Corver 1990, 1997, and Grimshaw 1991; see also Larson 1991 and Izvorski 1994).

On the semantic side, the interest in degree constructions can be explained very straightforwardly: they provide important insight into the core meaning of gradable adjectives. Simply put, there is a strong intuition that the anomaly which results from inserting adjectives like dead, octagonal, and former into the context of a degree construction is semantic, not syntactic. If this is true, then it is some aspect of the meaning of gradable adjectives that is responsible for the fact that they can occur in these constructions, and it is this component of their meaning which makes them different from non-gradable ones like dead, octagonal, and former.

The most obvious semantic difference between tall, old, bright and dense on the one hand, and dead, octagonal, and former on the other, is the presence of a domain in the former whose members can be partially ordered according to some gradient property. If degree morphemes are sensitive to the ordering on the domain of a gradable adjective (i.e., if their meaning is such that they require the adjectives with which they combine to be associated with partially ordered domains), then the distribution of gradable and non-gradable adjectives illustrated by the examples above can be explained. Degree constructions, then, provide an empirical foundation upon which to build an investigation of the semantic characteristics of gradable adjectives and, more generally, the expression of ordering relations in natural language.

The intuition that the core meaning of gradable and non-gradable adjectives determines their felicity in degree constructions, combined with the general hypothesis that the syntactic distribution of meaningful expressions should follow from the interaction of their meanings with the meanings of the expressions with which they combine, provides the foundation for the thesis of this dissertation. Specifically, I will argue that gradable adjectives denote measure functions – functions from objects to abstract representations of measurement, or degrees – and degree constructions denote properties of individuals that are characterized as relations between degrees, and I will support this proposal by showing that it provides principled explanations of a wide range of semantic properties of gradable and non-gradable adjectives and degree constructions. The dissertation is organized as follows: Chapter 1 provides a detailed introduction to the semantic characteristics of gradable adjectives and the core facts that any theory must explain, and introduces the two most prominent approaches to the semantic analysis of gradable adjectives. The first, articulated in the work of McConnell-Ginet 1973, Kamp 1975, Klein 1980, 1982, 1991, van Benthem 1983, Larson 1988, and Sánchez-Valencia 1994, builds on the hypothesis that gradable adjectives are of the same semantic type as other predicates – they denote (possibly partial) functions from individuals to truth values. The second, articulated in the work of Black and pitcher 1979, Builds on the hypothesis that gradable adjectives are of the same semantic type as other predicates — they denote (possibly partial) functions from individuals to truth values, but, unlike the first approach, also takes into account the distribution of gradable and non-gradable adjectives in degree constructions.
values—but differ in having partially ordered domains. I survey the basic claims of this type of analysis, then discuss several sets of facts which are problematic for it, concluding that the analysis, in its basic form, cannot be maintained. The second account, adopted by a number of researchers on gradable adjectives and comparatives (see e.g., Seuren 1973, Cresswell 1976, Hellan 1981, Hoeksema 1983, von Stechow 1984a, Heim 1985, Lerner and Pinkal 1992, 1995, Moltmann 1992a, Gawron 1995, Rullmann 1995, Izvorski 1995), analyzes gradable adjectives as relations between objects and abstract representations of measurement, or degrees, and degree constructions are analyzed as expressions which quantify over degrees. I show that this type of approach contains the machinery necessary for an explanation of the data which are problematic for the vague predicate analysis. I conclude by laying out some additional facts involving the scopal properties of comparatives which are problematic for this type of theory in its basic form.

Taking the observations about the scopal properties of comparatives as a starting point, chapter 2 develops an alternative to the relational analysis discussed in chapter 1 in which gradable adjectives are analyzed as functions from objects to degrees (cf. Bartsch and Vennemann 1973). I argue that propositions in which the main predicate is headed by a gradable adjective have three primary semantic constituents: a reference value, which denotes the degree to which the subject is ϕ, a standard value, which corresponds to another degree or to a proposition, and a degree relation, which is introduced by a degree morpheme and which defines a relation between the reference value and the standard value. Building on a syntactic analysis in which gradable adjectives project extended functional structure headed by a degree morpheme (as in Abney 1987, Corver 1990, 1997, and Grimshaw 1991), I show that this analysis supports a straightforward compositional semantics for degrees and degree expressions, and that it explains the scopal properties of comparatives which are problematic for the traditional scalar analysis.

Finally, chapter 3 addresses the ontological status of degrees, arguing that degrees should be analyzed as intervals on a scale, or extents, rather than points on a scale. I lay out a new model of the semantics and syntax of comparatives, which I call the extent-based model, and I show that this model has a number of advantages over the traditional scalar analysis. I argue that the difference between positive and negative adjectives is a sortal one: positive adjectives denote functions from objects to positive extents, and negative adjectives denote functions from objects to negative extents. After setting this analysis into the semantic framework developed in chapter 2, I show that it explains a number of the phenomena which are problematic for the traditional scalar analysis of comparatives, and that it provides a more natural and intuitive account of the scopal properties of comparatives.