Gradation in modified APs

INTRODUCTION: Some research has been conducted on manner modification of stative predicates (Maienborn, 2005; Geuder, 2006; Katz, 2008), but less attention has been paid to APs modified by deadjectival Advs (Ernst, 2011). The goal of this talk is to present a compositional analysis of graded modified APs such as how/so extremely expensive. While the presence of extreme Advs (extremely, unbelievably, surprisingly) has been used as an indication of exclamativehood (Elliott, 1974; Zanuttini and Portner, 2003), previous literature (D’Avis, 2002; Castroviejo, 2008) does not provide a satisfactory fleshed-out compositional analysis that explains the interpretations delivered by the AP depending on the characteristics of the Adv and the A ((1)), why certain degree expressions can intensify these APs and others cannot ((2)), why mid-scale Advs are not possible in this configuration ((3)), and why intensified wh-interrogatives seem unacceptable ((4)).

(1) a. I can’t believe how extremely expensive this laptop is.
   b. I know how politically incorrect this decision is.
   c. How beautifully phrased these lyrics are!
(2) a. I didn’t think this laptop would be so extremely expensive.
   b. #I didn’t think this laptop would be very extremely expensive.
(3) #How fairly/reasonably/slightly long he can stay under water! (From Elliott 1974)
(4) #How extremely expensive was this laptop?

This paper argues that (a) the core A of extreme Advs denotes a property of degrees, (b) extreme Advs are themselves gradable, so they introduce an additional degree variable to be bound, (c) how and so target a degree variable, but, unlike very, too, etc., they do not impose any truth-conditional restrictions on it, and (d) the phrase how/so Adv A has two possible bracketings and, correspondingly, two potential interpretations, even though their availability hinges on whether or not the A and the Adv are gradable.

PROPOSAL: Extreme Advs function like manner Advs, but their core A denotes a property of degrees rather than a property of states or events ((5)). For instance, a degree can be extreme, surprising or unbelievable (but see Katz 2005; Nouwen 2005 for a qualification).

(5) a. [[extremely]]: λAλx.∃d[A(x, d) & extreme(d)]
   b. [[extremely expensive]]: λx.∃d[expensive(x, d) & extreme(d)]

What is special about extreme Advs is that they are themselves gradable. That is, a degree may be extreme to a certain extent. Their degree variable is the one targeted by how ((6)).

(6) a. [[how extremely] expensive] this laptop is
   b. λp.∃d’[p = λw.∃d[expensive(w)this-laptop,d’)]]

Certainly, the existence of Advs that do not characterize degrees suggests that a predicate modifier interpretation can also be the outcome of the configuration how Adv A ((7)).

(7) a. [[how politically incorrect]] this decision is
   b. λp.∃d[p = λw:[politically(incorrect)](w)(this-decision,d)]

In (7), the Adv is not gradable (its effect is to specify a kind of incorrectness), but the A is; hence, the acceptability of the sentence. However, if the Adv – but not the A – is gradable (cf. (8)), the felicitous interpretation is one where how targets the degree of Adj-ness of the Adv’s core A, as proposed for (6-b), the difference being that beautiful here denotes a (gradable) property of states rather than a property of degrees.

(8) a. [[how beautifully] phrased] these lyrics are
   b. λp.∃d[p = λw.∃s[phrased(w)s,these-lyrics] & beautiful(w)(s,d)]

Concerning (2), it can be shown that none of the possible compositional semantics for (2-b) yields a felicitous outcome. In the first interpretation ((9)), we need to accommodate that there
is a set of degrees of being extremely expensive, and that $x$ exceeds a contextually determined standard of this property. In the second one ((10)), the problem experienced has to do with distinguishing various high degrees in a so-called zone of indifference (Morzycki, ta).

\begin{enumerate}
\item [(9)]
\begin{enumerate}
\item $\lambda x.\exists d[\text{(extremely}(expensive))(x, d) \& d > \text{std}_{\text{(extremely}}}(\text{expensive})]$
\item $\lambda x.\exists d, d'[\text{(expensive}(x, d) \& \text{extreme}(d, d') \& d' > \text{std}_{\text{(extreme})}]$
\end{enumerate}
\end{enumerate}

As for (2-a), while the predicate modifier analysis would be awkward like in (9), so is a degree anaphor (referring back to a familiar referent), and the implication that the degree reached is high – which a minimal degree of extremeness is – need not be part of its truth-conditional meaning, so an analysis like (11) shouldn’t be problematic. Something along the same lines could be argued for how, which introduces existential quantification over $d'$ (e.g. (6-b)), but doesn’t need to be responsible for the high degree implication.

\begin{enumerate}
\item [(11)]
\begin{enumerate}
\item $\lambda x.\exists d[\text{(expensive}(x, d) \& \text{extreme}(d, d'))]$
\end{enumerate}
\end{enumerate}

The awkwardness of (3) – but see Chernilovskaya (2011) for counterexamples – is spelled out in ((12)): in both cases, we need to accept coercion of non-gradable properties (fairly long and fair). As predicted by this analysis, the degree argument of long cannot be targeted by how. Admittedly, reasonable can be deemed gradable, but not when applied to a degree of length.

\begin{enumerate}
\item [(12)]
\begin{enumerate}
\item $\lambda x.\lambda p.\exists d[p = \lambda w.([\text{fairly}(\text{long})](w)(x, d))]$
\item $\lambda x.\lambda p.\exists d'[p = \lambda w.\exists d[\text{long}(w)(x, d) \& \text{fair}(d, d')]]$
\end{enumerate}
\end{enumerate}

To account for (4), we can resort again to the zone of indifference. Inquiring about degrees of extremeness requires, on the one hand, the existence of a salient scale or a set of conventional units that make informative answers. On the other hand, as pointed out by Rett (2008), it requires that the speaker is positive that $x$ is expensive. Since these are pragmatic problems, it is expected that in the right context, sentences such as (4) are not ill-formed, which is borne out. Abels (2004) shows that intensified wh-questions are possible under presupposition filters.

\begin{enumerate}
\item [(13)]
If it is already this hot down there on the main floor, how unbearably hot must there be up on the balcony?
\end{enumerate}

In (13) the if-clause suggests that the speaker knows it is hot. This improves the sentence, because how unbearably hot entails that it is hot, so the speaker is interested in more specific information, namely the degree of unbearability of this heat.

**Broader Implications:** This proposal is relevant to the much debated issue of whether wh-exclamatives fare well with an interrogative semantics or rather they need to have in their semantics an evaluative or exclamative-only morpheme (Zanuttini and Portner, 2003; Abels, 2004; Rett, 2008). It also has implications for a theory of intensification, since a relevant distinction between so and very has been identified that indicates that there may be non-truth-conditional means of conveying threshold exceeding. Further research includes determining if very in how very expensive deserves a compositional analysis along the lines presented here.

### References


