Hilary Clinton is not Mitt Romney rich: Nouns Modifying Degree and Dimension of Adjectives
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Overview
Adjectives are able to attributively modify nouns in many languages. This paper presents novel data showing that not only can noun phrases appear as attributive modifiers for adjectives in English, but this pattern is extremely productive to a degree that has not yet been studied, showing that these are not simply idiomatic. Attributive noun phrase modifiers (NP-modifiers) are proposed in this paper to be ambiguous between two constructions; one which restricts the degree of the adjective and is incompatible with degree morphology (degree NP-modifiers; 1), and one that looks at some other dimension of the adjective that is compatible with degree morphology (dimension NP-modifiers; 2).

(1) a. Mary is *Usain Bolt* fast.
   b. MEANING: Mary, like Usain Bolt, is very fast for her comparison class.

(2) a. The elephant is more *Andre the Giant* tall than the giraffe (who is *Yao Ming* tall). ¹
   b. MEANING: (Given an elephant and giraffe of the same height) the elephant is tall in a bulky way like Andre the Giant, more so than the giraffe who is tall in a lanky way like Yao Ming.

NP-Modifiers
NP-modifiers are available with a great variety of NPs; proper nouns (as in (1,2)), (bare singular) common nouns (3) and even more elaborate noun phrases (4). Some definite nominals are even allowed in NP-modifiers (5), seemingly those categorized as strong definites by Schwarz (2009). NP-modifiers are available along the entire range of adjectives, whether relative or absolute (see Kennedy & McNally (2005); Kennedy (2007)). The critical distributional distinction between the two readings is whether or not they can appear with degree morphology–more Andre the Giant tall can never mean closer to Andre the Giant’s height. This distinction is evidence that the degree NP-modifiers attach at the DegP level as degree quantifiers, whereas the dimension NP-modifiers attach lower than the DegP level, thus when NP-modifiers are stacked as in (6) only the highest one can be a degree NP-modifier.

(3) Mary is *cheetah* fast.
(4) His ID was suspicious, but not three little kids in big trenchcoat sneaking into a movie suspicious.
(5) The bus driver is the *vice principal* mean.
(6) He’s *skateboarder* famous, but not Tony Hawk *skateboarder* famous.

Degree NP-modifiers
Degree NP-modifiers appear similar to both (irregular) measure phrases, which denote degrees, and the equative construction, which denotes a degree quantifier. *Yao Ming tall, one Yao Ming tall* and *as tall as Yao Ming* in their simplest case are true for things whose degree of height is the same as Yao Ming’s. Yet, this paper shows how degree NP-modifiers crucially differ from both of these other constructions. Where measure phrases are poorly suited for indirect comparisons, and is restricted to specific adjectives; degree NP-modifiers have neither of these restrictions, (note (1), fast does not appear with direct measure phrases *20 mph fast, and if Mary is a sixth grader, (1) simply means she’s one of the fastest sixth graders, not as fast as Usain Bolt.).

Further, both the equative (Rett, 2008) and measure phrases (Schwarzschild, 2005) encode the greater than or equal to relation, but the degree NP-modifier selects a different relation. Where the other relations can be fully defined using just ordinal positions on the scale, the relation encoded by degree NP-modifiers requires distances between items in a comparison class.

To exhibit this, imagine that a group of basketball players keep track of their dunking percentages. The line in (7) represents each person’s dunking percentage as a corresponding mark on the number line. Cait makes 90%, Alex makes 78%, and Nisha makes 74%. The intervals marked note the distinction between x good and as good as x, the purple, red and blue above the line represent Cait, Alex and Nisha good, but the tan, green and orange lines below the number line represent as good as Cait, Alex or Nisha respectively.

¹ It is not necessary, only explanatorily simpler, to offer a parallel modifier within this sentence, ex. Ebanezer Scrooge rich is available to mean miserly or stingy without a comparison.
The relative size of the interval represented by $x \text{ good}$ is dependent on the proximity of $x$ to other items in its comparison class on the scale in question. Note, $\text{Cait good}$ has a larger distance between the minimum and Cait’s degree than $\text{Alex good}$ has. One could attempt to explain these size differences pragmatically—$\text{Alex good}$ has the same size window, but since $\text{Nisha good}$ is available and Nisha’s degree is closer for those below 76%, $\text{Nisha good}$ is chosen. However, then not $\text{Cait good}$ should access to that larger interval. This fails, since someone with 75% is $\text{Nisha good}$ but not $\text{Alex good}$.

**Dimension Reading** The other reading of an NP-modifier shifts the dimension upon which the adjective is evaluated upon. With multi-dimensional adjectives (particularly here disjunctive multidimensional adjectives, see Sassoon (2013, in progress)) an NP-modifier can restrict the dimensions in question to particular ones that the NP satisfies.

(8) **Context:** Patient A has mono, Patient B is bleeding out. Patient C has whooping cough.

a. Patient C is more Patient A unhealthy than Patient B, though Patient C is more unhealthy. (under the reading of Patient A unhealthy being afflicted by a disease rather than a wound)

b. Patient C is more Patient A unhealthy than Patient A; Patient C is very Patient A unhealthy.

These even work, as in (2) with adjectives typically thought to be of a single dimension. Looking at single dimensional adjectives we can see that only certain additional dimensions can be made reference to. Thus the dimensions accessible to the NP-modifier must be a part of tall already.

**Null Operators** This paper argues that the NP-modifiers are actually built up of an NP and a null operator that then attaches to the adjective. The null operator used for degree NP-modifiers (9), is called $\text{SIM}$ for ‘similarity’ and the one used with dimension NP modifiers (10), $\text{DIM}$ for ‘dimension’\(^2\). (9) denotes a relation between the degree of $y$ in its comparison class ($CC_y$), and $x$ in its own; stating that the relative degree of $x$ within its class, must be closer to $y$’s relative degree than any other $z$ in $CC_y$. $h_{P|CC_x}$ is used here to represent the homomorphism between the scale of $P$ considering the comparison class $CC_x$ to a universal scale, and is necessary to obtain indirect comparisons (Bale, 2011). This paper’s homomorphism works similarly to the proposal from Bale (2011), but differs in that it respects the distance between points on the scale, not just order.

(10) makes crucial use of the set $D(P)$ which is the set of dimensions available within the adjective $P$ (those quantified over (Sassoon, 2013, in progress) as well as those not typically quantified over like the extra dimensions in $\text{tall}$ mentioned above). $\text{DIM}$ selects some dimension $Q$ within $D(P)$, and then creates a new gradable adjective of type $<d,et>$ along that dimension, presupposing that both $y$ and $x$ have sufficiently high enough degrees along $P$.

\[
(9) \; \text{SIM} = \lambda y. \lambda P_{<d,et>}. \lambda x. \forall z \in CC_y \left[ h_{P|CC_x}(x) - h_{P|CC_y}(z) > h_{P|CC_x}(x) - h_{P|CC_y}(y) \right]
\]

\[
(10) \; \text{DIM} = \lambda y. \lambda P_{<d,et>}. \lambda d. \lambda x : \left[ \text{POS} P \right]_{CC_x}(x). \exists Q_{<d,et>} \in D(P) \left[ \left[ \text{POS} Q \right]_{CC_y}(y) \land Q(x, d) \right]
\]

**Conclusion** This paper presents productive NP-modifiers in English and shows that they are not simply idioms. Degree NP-modifiers show that indirect comparison must maintain distance relations, not just precedence relations between items in different comparison classes. Even simple unidimensional adjectives have a set of related dimensions inherent in their meaning available to Dimension NP-modifiers.

\(^2\)Both presuppose that $y$ surpasses the standard for the adjective $P$ in its own comparison class $CC_y$, $\left[ \text{POS} P \right]_{CC_y}(y)$, and for space it is excluded from these denotations.
References


