COMPARATIVES WITHOUT DEGREES: A NEW APPROACH

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It has become common to analyse comparatives by using degrees, so that *John is happier than Mary* would in fact involve a comparison between the degree(s) to which John is happy and the degree(s) to which Mary is happy. I will argue that such analyses face serious conceptual and empirical problems. I will pursue an alternative analysis on which comparatives involve a comparison between particularized properties or tropes, the kinds of things nominalizations like *John's happiness* refer to.

Introduction

In this paper, I will explore a novel analysis of comparatives in which the notion of a concrete property manifestation or trope plays the central role, instead of, as is common, the notion of a degree. The analysis, I argue, has some major conceptual and empirical advantages over a degree-based account. Roughly, on that analysis, instead of analysing (1a) as in (1b) (Cresswell 1976, von Stechow 1984), with the adjective being taken to express a relation between objects and degrees, (1a) is analysed as in (1c) where what is actually compared being the kinds of things nominalizations of the adjective refer to:

(1) a. *John is happier than Mary is.*

   b. max d[happy(John, d)] > max d[happy(Mary, d)]

   c. [*John's happiness*] < [*Mary's happiness*].

That is, (1a) is taken to mean, roughly 'John's happiness exceeds Mary's happiness'.

There are other versions of the degree-based account, the differences among which won't matter much for our purposes, for example analyses that make use of quantification over degrees (Pinkal 1989, Moltmann 1992) or that make use of measure functions (Kennedy 1999, 2001). What is common to the degree-based accounts is that gradable adjectives express relations between individuals and degrees, or, on Kennedy's account, functions from individuals to degrees.

In a lot of the relevant literature it is left open what degrees actually are, as long as they come with the appropriate ordering. While Cresswell (1976) takes them to be equivalence classes of individuals, they are more often taken to be abstract objects such as numbers or intervals consisting of numbers (see also Klein 1980, 1991). As Kennedy (1999 2001) points out, degrees need to also come with a type or dimension, so that degrees of height are associated with a different dimension than degrees of weight or of beauty (see the next section).

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1. Problems for the degree-based account

An apparent piece of evidence for the degree-based account is the possibility of overt degree-phrases, expressions which seem to spell out the degree supposedly involved in the meaning of the adjective, as in (2):

(2) a. *John is two meters tall.*

   b. *John is two meters taller than Mary.*

The distribution of degree-phrases, however, presents at the same time a serious problem for the degree-based account: degree-phrases are not possible with all adjectives that permit the comparative. The relevant generalization must make a distinction between degree-phrase modifiers of the positive as in (2a) and socalled differential degree-phrases as in (2b), which modify the comparative. The generalization in question seems to be the following (cf. Schwarzschild, to appear). Differential degree phrases in comparatives as in (2a) are possible with any adjective associated with an established measurement scale. Degree phrases with the positive as in (2b), by contrast, are subject to certain general and idiosyncratic lexical restrictions. First, they are impossible with the negative of adjectives (* *two meters small / narrow / short*) (Kennedy 1999, 2001) and with excessives (* *two meters enormous*). Second, degree-phrases are impossible even with adjectives associated with an established measurement scale. Whether such an adjective accepts a degree-phrase seems a matter of lexical particuliarity, differing from language to language (*two kilo heavy* is bad, but the German equivalent *two kilo schwer* is fine) (Schwarzschild, to appear). Thus, a semantic analysis of degree phrases has to account both for the generalizations mentioned above and for the idiosyncratic lexical restrictions imposed by adjectives associated with a measurement scale. Moreover, it needs to account for the fact that the majority of adjectives allowing for the comparative *(beautiful white, soft, strange…)* do not allow for degree phrases even in the comparative construction.

What properties should degrees have? First of all, they are to come with a (total) ordering. For that purpose, they may be conceived of simply as numbers. However, as Kennedy (1999), emphasizes, taking degrees to be numbers is not enough if the aim is also to explain incommensurability in cases of comparative subdeletion, as in (3a), as well as its absence in cases like (3b):

(3) a. # *John taller than Mary is beautiful.*

   b. *The table is wider than the sofa is long.*

What is needed in addition to a numerical representation is a type or dimension specifying whether the scale in question is one of height, weight, beauty or whatever. In (3b) the types or dimensions are the same, whereas in (3a) they are different.

One major problem this account faces is: how can it be decided what numbers to choose as the degrees in question? It is quite obvious that there are no good reason to choose any particular system of numbers over any other to represent degrees. Even when a comparative involves an adjective that has a measure system associated with it, there is no reason to choose that system, when no explicit reference is made to it, rather any other

system the speaker may be familiar with. The choice of a measure system thus is, within limits, arbitrary in cases when an established measure system exists. The choice of any particular scale of numbers would be *entirely* arbitrary in cases of adjectives *not* associated measure system (*beautiful, white* etc). The problem of such indeterminacy in the right choice of a system of objects to represent degrees is just the same as is familiar from the philosophy of mathematics, as regards the choice of one set-theoretical construal of numbers over another (Benaceraff 1965). Degrees have certain properties, such as standing in certain relations, being associated with entities (relative to a dimension), but any additional properties such as being '1' as opposed to '100' would be enforced artificially by the choice of a measure system alone. While the problem in the philosophy of mathematics is a fundamental one, in the present case, there is a straightforward way of avoiding it, by using tropes instead of degrees.

A somewhat related problem besides that of the semanticist's choice of appropriate degree objects is for the language *user* to have cognitive access to what he is saying when apparent reference to a degree is made. If a speaker is not able to spell out what degree exactly is involved in the semantic structure of a comparative sentence, how can she actually know what she is saying? This is essentially the meaning-intention problem that Schiffer (1987) discussed in the context of modes of presentations being implicit arguments in attitude reports. Of course, this problem does not arise, if comparatives involve simply quantification over degrees, as in (1a). However, there are cases when reference to particular degrees would take place, as in (4):

(4) *John is as happy as Sue is. Bill isn't that happy.*

In (4), *that* refers to the degree of happiness shared by John and Sue. The meaning-intention problem arising here is that the speaker would not have a clue as to what the degree object is he makes reference to with the utterance of *that* (besides it being the degree of happiness shared by John and Sue)

2. The proposal

The point of departure of my analysis is that comparatives such as (5a) are, roughly, equivalent to (5b):

 (5) a. *John is happier than Mary.*
     b. *John's happiness is greater than / exceeds Mary's.*

(5a) and thus (5b) involves a simple comparison ('greater than' in all cases) between things of the sort John's happiness and Mary's happiness. What are these entities, that is, the referents of nominalizations like *John's happiness*? What *John's happiness* stands for is best viewed as the concrete manifestation of happiness in John, that is, as particularized property or *trope*, to use the term that has become most common in contemporary metaphysics (Williams 1953, Mulligan/Simons/Smith 1984, Woltersdorff 1970, Moltmann 2004). Intuitively, the happiness of John is what you get when you abstract away from all of John's properties except his happiness – which is why tropes have also

been called 'abstract particulars' (Campbell 1990).

Tropes need to be sharply distinguished from related sorts of entities, namely states (which happen to have enjoyed greater popularity in recent linguistic semantics). Tropes are not states in that they are focused entirely on the way the property manifests itself in the individual; states, by contrast, only care about the holding of the property of the individual. This means that tropes, but not states can be compared with respect to the extent to which they instantiate the property in question, as seen below:

(6) a. *John's happiness is greater than Mary's happiness.*

   b. ?? *John's being happy is greater than Mary's being happy.*

The approach I am proposing has the following immediate advantages:

[1] No appeal to a dimension or type of degree needs to be made, to provide a natural account and its absence of incommensurability in subdeletion (what matters here will be whether the tropes being compared are of the same nature or not).

[2] No abstract, rarely explicit entities need to be invoked, rather all that is used is entities speakers obviously make reference to independently, namely with nominalizations of adjectives.

[3] The ordering involved can nonetheless be read off the entities directly: given two tropes of redness, for example, it is clear from their nature which one is greater than the other.

For the formal semantic analysis of comparatives using degrees, the idea is that the comparative operator acts also as a nominalization operator, introducing tropes into the semantic structure, just in the way nominalizations do. How then do tropes get introduced, what do they depend on? On might think that tropes depend on just the property expressed by the adjective and the individual. But this is wrong, as this would not capture the fact that tropes constitute the particular *way* the property is manifested in the individual. Thus, in (6a) the two tropes are distinguished not only by one involving Mary and the other John, but also by the fact that one is a greater manifestation of the property than the other. This means tropes depend also on the actual world (as well as perhaps the time in question). Thus (5a) would have to be analysed as in (7a), where f is the same function involved in the semantics of the nominalization as in (7b):

(7) a. $f(John, [happy], w) > f(Mary, [happy], w)$

   b. $[happiness]^w = \{<f(d, [happy], w), d> \mid d \,\varepsilon\, D(w)\}$

Note that adjectives, in the positive, now simply express properties. It is only comparative adjective that will express a relation between individuals and tropes as in (8):

(8) $[happier] = \{<d, t> \mid [f(d, [happy], w) > t\}$

The formal analysis has another nice feature in that it predicts that, as on Kennedy's (1999) version of the degree-based account, there will be no scope interactions of a degree quantifier with negation and other quantifiers. Thus if (9a) is analysed as in (9b), no degree quantifier can take scope over the negation, and if (10a) is analysed as in (10b),

no degree quantifier can take scope over *few men* either:

(9) a. *John is not happier than Mary*

    b. not f(John, [*happy*], w) > f(Mary, [*happy*], w)

(10) a. *few men are happier than Mary*

    b. few men x: f(x, [*happy*], w) > f(Mary, [*happy*], w)

3. Further evidence for tropes from modifiers

One major piece of evidence for tropes comes from the range of modifiers adjectives may take. Whereas some adjectives allow for modifiers that could be viewed as predicates of degrees modifiers (*very, much, highly*, *two meters, ten kilo*), the full range of modifiers adjectives allow can only be considered predicates of tropes, not of degrees. At least four classes of such modifiers can be distinguished:

[1] modifiers making reference to the particular way the property is manifested, as in *extraordinarily / unusually / exquisitely / strangely beautiful* or *intensely / uniformly / profoundly red*

Clearly degrees cannot be exquisite, strange, intense, or uniform. But tropes, the particular ways properties manifests themselves in objects, naturally can.

[2] modifiers making reference to the perceivability of the property manifestation, as in *visibly / perceivably happy*

Degrees as abstract objects are not perceivable, but tropes, as concrete objects, certainly are.

[3] modifiers making reference to the causal (including emotional) effect of the property manifestation, as in *horribly / astonishingly / fatally weak*

Degrees as abstract objects, on most philosophers' views, are not possible relata of causal relations, but tropes are (for philosophers that accept tropes).

[4] modifiers making reference to the role of the property manifestation as an object of action, as in *deliberately silent*

Degrees as abstract objects certainly are not objects of actions, but tropes quite plausibly can be.

Adjectival modifiers thus generally are best viewed as predicates of tropes. Does this then mean that tropes should be taken as additional arguments of adjectives, parallel to the Davidsonian account of adverbial modifiers, as in the analysis of (11a) in (11b)?

(11) a. *strangely beautiful*

    b. λx[∃t[strange(t) & beautiful(x, t))]

I do not think this is required. Rather adverbial modification itself can be viewed as involving a form of implicit nominalization, so that (11a) will be analysed as in (12):

(12) λx[beautiful(x) & strange(f(x, [*beautiful*], w))]

4. Remaining Issues

To sum up, the trope-based approach that I have sketched has some major advantages

over the familiar degree-based accounts: first of all in that tropes are independently needed as objects of reference of nominalization; second in that they are far more acceptable philosophically and allow avoiding the problems of indeterminacy and meaning-intention associated with degrees.

Using tropes thus allows for a novel approach to comparatives quite different from the older vagueness-based analyses of Kamp (1975) and Klein (1980) that tried to do without degrees.

The account still has to deal with some important further issues, though, such as the semantics of degree-phrases (in which case I would say reference to degrees does indeed take place), comparatives with adjectives of negative polarity (*John is smaller than Mary*), and the observation that there are in fact two kinds of gradable adjective nominalizations: 'neutral' ones (*John's height*, which allows John to be small) and 'positive ones (*John's tallness*, which requires John to be tall).

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