Comparative Quantifiers and Plural Predication

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1. Introduction

A quick inspection of the paradigm in (1) raises the following question: To what extent does the surface similarity of the underlined expressions reflect a deep/structural similarity?

(1) a. John read <u>more than three books</u>.
b. John read <u>more than half of the books</u>.
c. John read <u>more books than papers.</u>
d. John read <u>more books than Bill (did/read)</u>.
e. John read <u>more books than there are planets in the solar system</u>.

Somewhat surprisingly, there is little work addressing this question even though there are two distinguished traditions each concerned with a subset of the paradigm. On the one hand, Generalized Quantifier Theory (GQT) offers an analysis of expressions as in (1)a,b as run of the mill quantifiers, while the theory of comparative constructions, analyzes expressions as in (1)d,e as amount comparatives. The only disputed area is the status of (1)c which is claimed in Keenan(1987) to require an analysis as GQ employing a discontinuous 3-place determiner quantifier *more* … *than* … while Kennedy(2000) sketches a treatment in terms of comparative syntax and semantics.

The main goal of this paper is to present an argument in favor of a uniform analysis of all expressions underlined in (1) as comparative constructions. The argument is based on the observation that comparative quantifiers and amount comparatives impose the same constraints on their environment. More specifically, both require that the NP and VP predicates they combine with range over pluralities. I will present the outlines of a uniform analysis that explains these observations as a consequence of the

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∗ I would like to thank Stephen Crain, Kai von Fintel, Danny Fox, Elena Guerzoni, Irene Heim, Norbert Hornstein, Paul Pietroski, Uli Sauerland, Philippe Schlenker and the audience at WCCFL 20 for helpful comments at various stages of the preparation of this paper. All mistakes are mine.

degree function *MANY* providing the semantic core of both comparative quantifiers and amount comparatives. Because of space limitations, the discussion will focus on the analysis of comparative determiners like *more than three* which will receive a compositional treatment as comparative construction. Since this departs notably from the traditional GQT treatment, I begin with a quick review of the GQT analysis of comparative determiners.

2. Comparative quantifiers in GQT

In GQT, comparative quantifiers are treated entirely on a par with regular quantifiers. Following common practice in assuming that NPs and VPs denote sets of individuals, determiner meanings can be factored out mechanically as relations between sets of individuals (cf. Barwise and Cooper(1981) among many others). Comparative determiners are, under the GQT point of view no different. I.e. expressions like *more than n* are said to denote relations between sets of individuals just like *every/no/*etc.

(2) a. $[\![every]\!] = \lambda A.\lambda B.\ A \subseteq B$[1]
b. $[\![more\ than\ one]\!] = \lambda A.\lambda B.|A \cap B| > 1$
c. $[\![no\ fewer\ than\ two]\!] = \lambda A.\lambda B.\ |A \cap B| \geq 2$
d. $[\![exactly\ three]\!] = \lambda A.\lambda B.|A \cap B| = 3$

From a syntactic point of view this treatment appears unattractive because GQT seems to ignore that comparative determiners are morpho-syntactically more complex than regular determiners employing particles that have independent uses and meanings. This objection needs to be qualified: that the semantic value of comparative determiners is on a par with those of regular determiners does not necessarily mean that they aren't internally complex. The claim of GQT is not that there couldn't be a compositional analysis of comparative determiners. Rather, it is that whatever their internal make-up might be, it is irrelevant for the semantic import comparative determiners have on the sentence they appear in.[2] Comparative determiners are opaque domains relative to the determiner external material – not unlike idiomatic expressions. The pieces they are made of do not interact independently with the NP or the matrix and the lexical entries given by GQT simply recognize this fact by treating them as primitives with respect to their effect on clausal semantics. The core claim

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1. As a matter of convenience, no distinction is made between sets and their characteristic functions.
2. Nerbonne(1994) sketches an analysis of comparative determiners in which the composition is properly contained within the complex determiner. The classical GQT analysis can therefore be taken as abbreviation of his proposal.

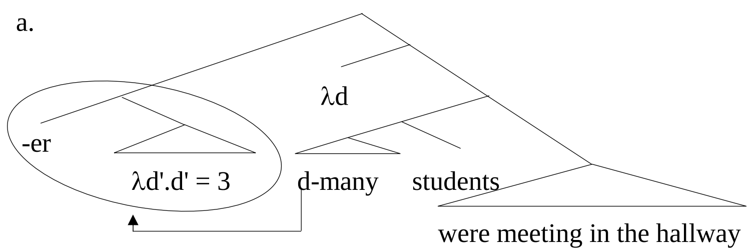
of GQT is then that there are no interactions between the pieces comparative determiners are made of and elements in the DP or the matrix. The argument presented in this paper goes directly against this position since it shows that an essential part of comparative determiners (the degree function *MANY*) constrains the environments in which a comparative determiner can appear.

3. Comparative quantifiers as comparative constructions

To get off the ground, I will present without further argumentation a simplified version of the analysis of comparative quantifiers as comparative constructions proposed in Hackl(2000).[3] Following the traditional analysis of comparatives, three components are assumed to be essential: 1. a degree function denoted by *MANY*, 2. a comparative relation given by *-er* (*MANY+er* is spelled out as *more*, cf. Brensnan(1973)) and 3. expressions that describe the degrees that are compared by the comparative relation. The comparative morpheme *–er* is assumed to have the semantics of a degree quantifier ((3)d) that takes two sets of degrees as arguments. Its internal argument is given by the *than*-clause while its external argument is provided by the matrix after the degree quantifier [*–er than 3*] – base-generated in the argument position of *many* – has raised to a clausal position to yield an interpretable structure.

(3) a. More than three students were meeting in the hallway.
b. $[[MANY]] = \lambda d.\lambda f_{<e,t>}.\lambda g_{<e,t>}.\ \exists x$ st. $f(x) = 1\ \&\ g(x) = 1\ \&\ |x| = d$
c. $[[\text{-}er]] = \lambda D_{<d,t>}.\ \lambda D'_{<d,t>}.\ \max(D) < \max(D')$[4]
d. $[[\text{-}er\ than\ 3]] = \lambda D'_{<d,t>}.\ \max(\{d: d = 3\}) < \max(D')$

(4) a.



b. "The number of students meeting in the hallway is bigger than 3"

3. The simplifications concern for the most part the internal make-up of the *than*-clause which is irrelevant for the purpose of the present paper.
4. $\max = \lambda D_{<d,t>}.\iota d$ st. $D(d) = 1\ \&\ \forall d'\ [D(d') = 1 \rightarrow d' \leq d]$. cf. Schwarzschild and Wilkinson(2000) for reasons to assume the maximality operator closing off the nuclear scope argument of *-er*).

According to the structure in (4) a comparative quantifier like *more than three students* is syntactically decomposed into a degree quantifier [*-er than three*] and an individual quantifier [*d-many students*]. This decomposition follows to a large extent what Heim(2000) calls the classical tradition. The only unorthodox assumption concerns the semantics of the degree function *MANY*. Rather than assuming that *MANY* is a scalar adjective, the claim in (3)b is that *MANY* denotes a "gradable determiner" i.e. a degree function that after absorbing the degree argument returns a determiner meaning.[5] Naturally, the question arises what kind of creature a gradable determiner is i.e. what is the content of the claim that *MANY* is a degree function and whether we can find empirical support for this idea.

3.1. Degree functions express measure functions

"Degree function" is loosely used to refer to any function that takes a degree argument. For instance, a scalar adjective like *tall* which denotes a gradable property is a degree function because it maps a degree of height d to the (characteristic function of the) set of individuals whose height is d.

(5) $[\![tall]\!] = \lambda d{:}\ d \in D_{Height}.\lambda x{:}\ x \in D_e.\ x$ is d-tall

The core intuition underlying the claim that expressions such as *tall* are degree functions is that they express measure functions.[6] Measure functions, abstractly speaking, relate individuals with degrees (points or intervals on a scale), i.e. they are functions of type $\langle e,d \rangle$. Importantly, not any old mapping between individuals and degrees qualifies as measure function. Only those are measure functions that relate individuals with degrees in an **order preserving** fashion (cf. Krantz et. al.(1971)). Intuitively, the requirement of order preservation is – e.g. in the case of *tall* – that taller individuals are mapped to bigger degrees of height. To illustrate the significance of this simple observation, consider how the inference in (6)a-c is explained assuming that *tall* is a degree function. If *tall* is a degree function, the inference in (6) is not guaranteed unless we add the requirement that *tall* denotes an order preserving mapping from degrees to sets of individuals as suggested in (6)'.

(6)	a. Bill is exactly 6 feet tall.	a'. Bill's height is exactly 6 feet.
	b. John is taller than 6 feet.	b'. John's height is bigger than 6 feet.
	c.=>John is taller than Bill.	c'.=>John's height is bigger than Bill's.

5. See Hackl(2000a,b) for evidence supporting the idea that *MANY* is a gradable determiner rather than a gradable adjective.
6. Cf. Bresnan(1973), von Stechow(1984), Kennedy(1997).

Note that the notion of a Krantz-measure function (type $\langle e,d\rangle$) is not immediately applicable to *tall* and functions of type $\langle d,et\rangle$ in general. However, we can recover for each function of type $\langle d,et\rangle$ the corresponding Krantz-measure function as follows: a function of type $\langle d,et\rangle$ that maps any given degree in its domain to the (characteristic function of) set of individuals <u>expresses a measure function</u> iff all individuals in a given set are related to the same degree and individuals in different sets are related to degrees in an order preserving way. In other words, order preservation between degrees and sets of individuals can be reduced to order preservation between degrees and individuals. Rather than dwelling on technical details, I limit myself to pointing out one important aspect of the claim that degree functions express measure functions. Clearly, the notion of an order preserving mapping between degrees and (sets of) individuals presupposes that the individuals are orderable in a way that reflects the ordering of the degrees on the scale associated with the measure function. Since this requirement will play in important role in the discussion to come, I will highlight it by adding a corresponding definedness condition on the individuals that e.g. *tall* is predicated of.

(7) $[\![\textit{tall}]\!] = \lambda d \in D_{Height}.\lambda x \in D_e$ & x is orderable wrt. height. x is d-tall

3.2. Extension to *MANY*: measuring cardinalities

The lexical entry for *MANY* given in (3)b stipulates that *MANY* denotes a gradable determiner that takes two predicative arguments after absorbing the degree argument. Following the reasoning from above, we need to show how a function from degrees to determiner meanings can be seen to express a measure function. This is prima facie not obvious. However, a natural suggestion analogous to the discussion of gradable adjectives is to recover the notion of a Krantz-measure function by demanding that the individuals in the extension of the NP and VP arguments of *MANY* are related to degrees of cardinality in an order preserving way. Again, I will limit the discussion to locating the corresponding presupposition that the entities *MANY* measures are orderable with respect to cardinality and simply add a definedness condition to the lexical entry of *MANY* that is inherited by the individuals in the extension of the NP as well as the VP.

(8) $[\![\textit{many}]\!] = \lambda d \in D_{Card.}.\lambda f \in D_{\langle e,t\rangle}$ & $\forall y\ [f(y)=1 \rightarrow$ y can be ordered non-trivially wrt. cardinality. $\lambda g \in D_{\langle e,t\rangle}$ & $\forall y\ [f(y)=1 \rightarrow$ y can be ordered non-trivially wrt. cardinality. $\exists x\ f(x)=g(x)=1\ \&\ |x| = d$

The definedness condition in (8) raises the following question: What kinds of individuals do the predicative arguments of *MANY* range over, i.e.

what sorts of individuals are orderable with respect to cardinality? Note that regular individuals can be ordered with respect to cardinality only trivially: every individual occupies the same place in the order and is therefore mapped to the same degree. Because of the "non-triviality" clause in (8) the possibility that the NP and VP argument of *MANY* range over regular individuals is therefore precluded. What we need instead are predicates that range over individuals that correspond to sets of individuals, i.e. pluralities.

I will assume a treatment of pluralities along the lines of Link(1983) where pluralities are modeled as individual sums (i-sums) of atomic individuals. The domain of discourse is a complete atomic Boolean algebra with $\oplus$ ("individual sum formation") denoting the Boolean join operation and the corresponding "individual part of relation" $\leq_i$ providing the inherent ordering relation. Furthermore, I assume the familiar *-operator which applies to 1-place predicates and guarantees that the extension of the predicate it applies to is closed under i-sum formation. To illustrate, consider the effect of the *-operator on the set A={a,b,c} as given in (10). The inherent ordering of *A can be transparently represented in a Hasse-diagram (10)b.

(9) Let A be (the characteristic function of) a set. *A is (the characteristic function of) the smallest set that satisfies the following two conditions:
   (i) $A \subseteq {}^*A$
   (ii) $\forall x \forall y[\, x \in {}^*A \ \&\ y \in {}^*A \rightarrow x \oplus y \in {}^*A]$

(10) a. ${}^*A = \{a, b, c, a \oplus b, a \oplus c, b \oplus c, a \oplus b \oplus c\}$
   b.

	$a \oplus b \oplus c$		$\rightarrow$	3
$a \oplus b$	$a \oplus c$	$b \oplus c$	$\rightarrow$	2
a	b	c	$\rightarrow$	1

If, as argued above, the entities measured by *MANY* are pluralities in the sense of Link, we need to define the order preserving mapping from i-sums to degrees of cardinality as indicated by the arrows in (10)b. I.e. atomic individuals are mapped to cardinality 1, i-sums with two atomic i-parts are mapped to cardinality 2 etc. Note that it is crucial in order to get the desired result that the measure function expressed by *MANY* has access to the atomic parts of the pluralities. In fact, the atomic i-parts of the i-sums provide the unit of counting. This much in place, we can give the lexical entry of *MANY* as in (11) where the definedness condition is now expressed as the requirement that the arguments of *MANY* are *-ed predicates. Furthermore, the counting operation is specified to recover the atomic parts of the pluralities as units of measurement/counting.

(11) $[\![MANY]\!] = \lambda d \in D_{Card}.\lambda{*}f \in D_{\langle e,t\rangle}.\lambda{*}g \in D_{\langle e,t\rangle}.\exists x {*}f(x) = {*}g(x) = 1$ & x has d-many atomic parts.

The lexical entry for *MANY* is now explicit enough to generate predictions as to how a comparative determiner should interact with its environment, specifically its NP and VP arguments. We expect that both the NP and VP argument of comparative determiners range over pluralities, that the unit of counting is given by the atomic i-parts of the pluralities and that languages that encode the *-operator morphologically flag the arguments of comparative determiners accordingly. Furthermore, we expect exactly the same facts to hold for amount comparatives. The next two sections evaluate these predictions for English.

3.3. Plural morphology on NPs

For languages like English it is fairly uncontroversial that plural morphology on NPs has semantic import. I will follow Link(1983) and assume that it encodes the *-operator. One piece of evidence in support of this claim comes from the fact that plural marked DPs refer cumulatively. I.e. for any two individuals in the extension of a predicate it is also true that their i-sum is in the predicate extension. This property can be seen at work when we consider the validity of the inference in (12)a-b. Note that the singular form in (12)c is ungrammatical.

(12) a. John is a student. Mary is a student. Sue …
b.=>John and Mary and Sue … are students.
c. *John and Mary and Sue … is/are a student.

Assuming that plural morphology on nouns encodes the *-operator together with the semantics of *MANY* given in (11) predicts that the NP argument of comparative determiners as well as the NPs in amount comparatives that describe the compared degrees are plural marked. This prediction, seemingly trivial, is nevertheless worth pointing out given that for GQT, the presence of plural morphology on the restrictor of a comparative determiner (and quantificational determiners in general) is entirely unexpected and causes in some cases severe problems.[7] Recall that according to GQT comparative determiners are just like any other quantificational determiner in that they denote relations between sets of individuals. Plural morphology on the NP gets in the way and either needs to be ignored or assumed to trigger a type-shifting operation to overcome

7. E.g. Roberts(1987) showed that the truth-conditions predicted for *most/ more than half* are incorrect if the plural marked NP argument of *most* is assumed to range over pluralities. Cf. Yabushita(1989) for a general proof.

compositional difficulties. Furthermore, the parallel behavior of amount comparatives goes unnoticed in GQT. The account presented here on the other hand predicts plural morphology on the NP argument of comparative determiners as well as amount comparatives as a function of the degree function *MANY* which provides in both cases the semantic core of the construction.[8] In the discussion below, I distinguish three kinds of nouns – regular count nouns, collective nouns and essentially plural nouns – discuss how in each of those the general prediction reveals non-trivial properties of these nouns and show that the same properties are observed in amount comparatives.

Count nouns like *student* range over regular individuals. Plural marking turns *student* into a predicate that is true of all i-sums of students. The atomic parts of *students* are of course single students. Hence the units of counting are regular individuals. (13) shows that plural marking of *student* is required in comparative quantifiers as well as amount comparative constructions. We note further that regular individuals are counted.

(13) a. More/(no) fewer than five student*(s) came to the party.
b. More student*(s) than professor*(s) came to the party.
c. More student*(s) than Bill thought came to the party.

Collective nouns like *committee*, *team*, *trio*, *couple*, *group*, etc. don't range over regular individuals. Instead they seem to range over groups of individuals. Given this, it is initially surprising that even collective nouns need to be plural marked in comparative quantifiers as well as amount comparatives cf. (14).

(14) a. More/(no) fewer than two committee*(s)/couple*(s) are meeting.
b. More/no fewer trio*(s) than quartet*(s) were/*was in the room.
c. John met with more/no fewer couple*(s)/team*(s)/group*(s)/… than there are/*is a committee*(s)/Bill had expected.

If plural marking is required even with collective nouns, it follows from the proposal that the individuals in the extension of singular collective nouns cannot be measured by *MANY* with respect to how many atomic parts they have. I.e. these individuals are not pluralities in the sense of Link. Instead, they seem to be atomic (group-)individuals whose members are linguistically not transparent.[9] Indeed cumulative inferences with collective nouns are based on group-individuals rather than regular individuals. Consider a

8. The success of the argument depends partly on the extent to which determiners like *several, both, all,* etc. can be shown to reduce to the comparative case or require plural morphology for independent reasons.
9. Cf. also e.g. Schwarzschild(1996), Winter(1998).

situation in which both (15)a and b are true, i.e. Mary is involved with two people. None of the versions in (15)c can be inferred (in fact they sound rather awkward). Instead, (15)d has to be used to convey the valid inference. This pattern is parallel to the cumulative inference discussed in (12) with one important difference: the atomic individuals entering in to the cumulative inference are couples rather than John, Mary and Bill.

(15) a. John and Mary are a couple/team.
b. Mary and Bill are a couple/team.
c.=/>??John and Mary and Bill are (a) couple(s)/team(s).
d.=>John and Mary and Mary and Bill are couples/teams.

A parallel point can be made when we consider the units that are counted with collective nouns. Take (16)a for example from which we seem to be able to infer (16)b since every couple consist of exactly two people.

(16) a. No fewer than two couples came to the party.
b.=>No fewer than four people came to the party.

This means that the entities that are counted in (16) are couples rather than people being in a couple relation. This is exactly as expected if the atomic elements in the extension of *couples/teams/groups* etc. are couples/teams/ groups etc. rather than their members.

"Essentially" plural nouns like *colleagues*, *siblings*, *neighbors*, *twin brothers*, etc. – not unlike collective nouns – seem to range over groups of individuals rather than regular individuals unless they are used relationally (e.g. *twin brother of John*). After all, one can't be a twin-brother all by oneself just as much as one cannot be a couple all by oneself. We note that plural morphology is required on these nouns in comparative quantifiers and amount comparatives.

(17) a. More than three twin-brother*(s)/neighbor*(s)/etc. came.
b. More/no fewer /twin-brother*(s)/neighbor*(s) than cousin*(s)/ friend*(s) were/*was in the room.
c. There were more/no fewer twin-brother*(s)/colleague*(s)/ neighbor*(s)/friend*(s) than there were cousin*(s)/Bill expected.

Unlike collective nouns, the units of counting made available by essentially plural nouns are not e.g. pairs of twin-brothers parallel to the pairs of individuals in a couple. Instead regular individuals are counted. From (18)a for instance we can't conclude that at least four people came as we did in the case of couples. All that can be inferred is that at least two people came.

(18) a. No fewer than two twin-brothers/colleagues came to the party
b.=/>No fewer than four people came to the party
c.=>No fewer two people came to the party

Since the units of counting are regular individuals, the proposal predicts that in the extension of essentially plural nouns are i-sums whose atomic parts are regular individuals rather than group-individuals. Confirmation comes again from cumulative inferences which are valid for regular individuals as shown in (19).

(19) a. John and Mary are colleagues/neighbors/siblings.
b. Mary and Sue are colleagues/neighbors/siblings.
c.=>John and Mary and Sue are colleagues/neighbors/siblings.

Before moving on, I would like to point out a potentially serious counter example to the proposal. It is well known that comparative determiners that employ the numeral *one* take NP arguments in the singular (20)a. This is unexpected for the proposal and needs to be treated as the marked case. That this exception is tied to the idiosyncratic item *one* rather than the meaning can be readily seen by contrasting it with the denotationally equivalent numeral *1.0* which requires plural morphology cf. (20)b.[10] Notice further, that in amount comparatives plural morphology is required even if the standard of comparison provided by a than-clause is necessarily the degree 1 cf. (20)c.

(20) a. More/(no) fewer than one apple/*apples are in this salad.
b. More/(no) fewer than 1.0 *apple/apples are in this salad.
c. More student*(s) than there are even prime number*(s) came.

From these observations, I conclude tentatively that the reason for singular morphology triggered by *one* is not in the semantics per se.[11]

To summarize, we have seen that NPs in comparative determiners as well as amount comparatives need to range over pluralities. In languages like English this is achieved via plural morphology which was assumed to encode the *-operator that maps regular predicate extensions to extensions ranging over i-sums of the atomic individuals in the original predicate extension. This fact shows that the surface similarity between comparative quantifiers and amount comparatives run deeper and strongly suggests that a common analysis should be given. The next section gives essentially the same argument looking at possible VP-extensions of comparative quantifiers and amount comparatives.

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10. Cf. e.g. Krifka(1989) for the same observation.
11. The archaic determiner *many a* as in *many a student* might also be a problem.

3.4. Comparative quantifiers and *-ed VPs

Recall that the lexical entry for *MANY* given in (11) requires that both the NP and VP argument of comparative determiners range over pluralities. Furthermore, it is required that both predicates range over pluralities whose atomic parts are commensurable. I.e. for the degree function *MANY* to yield a true after absorbing all its arguments, there has to be a plurality that satisfies both the NP and the VP conditions and has d-many atomic parts.

(11) $[\![MANY]\!] = \lambda d \in D_{Card}.\lambda {*f} \in D_{\langle e,t\rangle}.\lambda {*g} \in D_{\langle e,t\rangle}.\exists x {*f}(x) = {*g}(x) = 1$ & x has d-many atomic parts.

As in the case of NP predicates, it is possible to distinguish between VP predicates ranging over regular individuals, predicates ranging over group-individuals and essentially plural predicates. Prototypical examples are *have blue eyes, meet/are similar* and *be a good team*/*constituted a minority/weigh 800 lbs/be numerous*. Since it less clear that plural morphology in languages like English has the same semantic effect on VPs that it has on NPs I will not rely on morphology and use instead cumulative inferences as in (21)-(23) directly to support the classification.[12]

(21) a. John has blue eyes.
b. Mary has blue eyes.
c.=> John and Mary have blue eyes.

(22) a. John and Mary were meeting/are similar.
b. Mary and Sue were meeting/are similar.
c.=> John and Mary and Sue were meeting/are similar.

(23) a. John and Mary constituted a minority/weighed exactly 800 lbs.
b. Mary and Sue constituted a minority/weighed exactly 800 lbs.
c.=/> John and Mary and Sue constituted a minority/weighed exactly 800 lbs.
d.=> John and Mary and Mary and Sue constituted a minority/weighed exactly 800 lbs.

Given this classification of VP-predicates, the general expectation about how various predicates interact in comparative quantificational structures and amount comparatives mentioned above has the following instantiations: 1. NP predicates ranging over regular individuals like *student* are compatible with VP predicates ranging over regular individuals like

12. Cf. e.g. Dowty(1986), Winter(1998) for a classification of intuitively collective predicates like *meet/be similar* etc. and *be a good team/be numerous* into two distinct classes.

have blue eyes as well as essentially plural VP predicates like *meet.* This is so because both NP and VP predicates are *-ed if they are the arguments of *MANY* and range over pluralities whose atomic parts are regular individuals. They should be incompatible however with genuine collective predicates like *be numerous/be a good team* because the atomic parts of genuine collective predicates are group-individuals. 2. For the same reasons essentially plural NPs (e.g. *colleagues*) should be compatible with individual predicates like *have blues eyes* as well as essentially plural predicates like *meet* and incompatible with genuine collective predicates*.* 3. Collective NPs like *couple* on the other hand should be compatible only with genuine collective VPs like *be a good team* and incompatible with individual and essentially plural VP predicates because the atomic parts of collective NPs are group-individuals rather than regular individuals. The data in (24) - (25) show – with the notable exception of (25)b[13] – that these predictions are borne out for comparative quantifiers as well as amount comparative constructions as exemplified in (26)-(28).

(24) a. More than 3 students/colleagues have blue eyes/were meeting.
b. #More than 3 students/colleagues constituted a minority/ weighed exactly 800 lbs.

(25) a. #More than 3 committees/groups have blue eyes.
b. More than 3 committees/groups were meeting in the hallway.
c. More than 3 committees/groups constituted a minority/ weighed exactly 800 lbs.

(26) a. More students/neighbors than colleagues/students have blue eyes.
b. More students/colleagues have blue eyes than Bill had expected.
c. #More teachers than groups of students have blue eyes.
d. #More groups of students have blue eyes than Bill had expected.

(27) a. More (groups of) students than teachers/colleagues were meeting.
b. More (groups of) students/colleagues were meeting than expected.

(28) a. #More students/neighbors than teachers/colleagues were numerous constituted a majority/weighed exactly 800lbs.
b. #More students/colleagues than expected were numerous/ constituted a majority/weighed exactly 800lbs.
c. More groups of students than Bill had expected were numerous/ constituted a majority/weighed exactly 800lbs.

Note that the requirement that the NP and VP argument of *MANY* have to match with respect to the atomic individuals of the pluralities they range

13. I have nothing insightful to offer why (25)b is grammatical. Surely, it goes back to the question why *the committee is meeting* is grammatical.

over is not simply due to a requirement that there couldn't be any mismatches between NP and VP. Winter(1998) following Dowty(1986) for instance points out that the definite plurals and bare numeral DPs based on individual or essentially plural NPs are compatible with genuine collective VP predicates. Furthermore, as the data in (29)b show even some quantifiers – interestingly comparative quantifiers – allow for exceptions if the genuine collective predicate is in a generic environment. While the episodic case yields the same awkwardness as before, the generic example doesn't. This is surprising because true quantifiers are still incompatible with generic genuine collective predicates – cf. (29)c.

(29) a. #More than 3 students constituted a majority/weigh 800lbs/be a team that participates in the race.
b. More than 3 students can constitute a majority/weigh 800lbs/be a team that participates in the race.
c. #All the/no/none of the/most of the students can constitute a majority/weigh 800lbs/be a team that participates in the race.

Again, the exceptional behavior of comparative quantifiers is paralleled in amount comparatives as shown in (30). Notice further that cumulative inferences over regular individuals are valid with generic genuine collective predicates (cf (31) vs (31)'). These observations support the claim that the sensitivity of comparative quantifiers for genuine collective predicates is to be stated in terms of the atomic parts made available by the predicate.

(30) a. More students than professors can constituted a majority/weigh 800lbs/be a team that participates in the race.
b. More students than John had expected can constituted a majority/weigh 800lbs/be a team that participates in the race.

(31)	a. John and Mary were a group.	a'. J. and M. are a group.
	b. Mary and Sue were a group.	b'. M. and S. are a group.
	c.≠> John, Mary and Sue were a group.	c'.=>J., M. and S. are a group.

4. Conclusion

The observations presented in this paper show that the surface similarity between comparative quantifiers and various amount comparative constructions should be taken as a reflection of a deep/structural similarity and therefore support a uniform treatment. As first step towards this goal, I sketched an analysis of comparative determiners like *more than three* as comparative construction. According to this analysis, the semantic core in both types of constructions is provided by a gradable determiner *MANY. MANY* determines their distribution by imposing a requirement on the predicates it combines with that they range over pluralities whose atomic parts are commensurable. Future research has to show whether the analysis can be extended to cover more complicated comparative determiners like *more than half* as well as amount comparatives like *more books than Bill* thereby providing a framework within which an analysis of all amount comparative constructions can be given.

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