

Two Kinds of Degree-denoting Relatives: Hebrew Versus Romanian¹

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A B S T R A C T

This paper conducts a contrastive study of Hebrew and Romanian, with supporting data from additional languages, which pursues both descriptive and theoretical goals.

On the descriptive level, it draws attention to a hitherto unnoticed and unanalyzed construction that has so far been detected in Romanian and Albanian only, and which although superficially similar to a kind of degree-denoting relative construction that is widely attested cross-linguistically (and thus, in both Hebrew and Romanian), nonetheless differs from it in subtle semantic and pragmatic ways, as well as in a more restricted range of expressive options. Observationally, the rare construction differs from the more common one in lacking the definite determiner that characterizes the latter, and is labeled for this reason 'B(are) D(egree-denoting) R(elative) C(lause) C(onstruction).'

On the theoretical level, this paper offers explicit compositional semantic analyses of the two constructions, which hopefully capture both the similarities and the differences between them. The constructions are examined against the background of an up-dated variety of the typology of RCCs proposed in Grosu & Landman (1998).

1. INTRODUCTORY REMARKS

This paper undertakes a contrastive study of Hebrew and Romanian, which focuses on two varieties of relative clause construction (henceforth: RCCs), one of which has not, to the best of my knowledge, been analyzed or even mentioned in earlier literature, and has so far been detected in Romanian and Albanian only. The other RCC is widely attested cross-linguistically, and is found, in particular, in Hebrew, Romanian, and a variety of Romance, Germanic, and Slavic languages; references to it may be found in the earlier literature.

The two constructions are quite similar superficially, the principal distinguishing feature being that the better known construction necessarily exhibits the definite article if the language has such an article, or, sometimes, a universal quantifier, while the less known one has no overt determiner; the distinction is clearly observable in Romanian and Albanian, both of which have definite articles. This superficial distinction correlates with subtle semantic and pragmatic differences, as well as with differences in the range of expressive options.

As will be seen, both constructions denote degrees on some scale, and may thus with some justification be described as 'degree relatives.' However, since this term has been used in a much wider set of contexts in the literature, it will be useful to take a look at the constructions that have been so labeled, in order to determine where the two constructions at issue stand in relation to the broader class. The remainder of this paper is organized as follows: In section 2, I re-examine the typology of RCCs proposed in Grosu & Landman (1998), in which degree relatives were characterized as a sub-instance of a larger class of 'third-type' relatives, and show that the third class is more varied than Grosu & Landman assumed. In section 3, I describe the two

constructions that form the focus of the paper, and bring out their similarities and differences. The construction with wide cross-linguistic distribution, which, in view of its explicitly definite status, will be called D(efinite) D(egree-denoting) R(elative) C(lause) C(onstruction), turns out to be a sub-variety of degree RCCs that were described in earlier literature, in particular, in Grosu (2000, 2002). The construction with restricted distribution, which will be called B(are) D(egree-denoting) R(elative) C(lause) C(onstruction), turns out to differ significantly from previously examined degree RCCs. In section 4, I propose analyses of the two constructions that capture and explain the similarities and differences between DD-RCCs and BD-RCCs. Section 5 summarizes the results of the paper.

2. ON 'THIRD-TYPE' RELATIVES

Grosu & Landman (1998) proposed a typology of RCCs that placed them on a continuum concerning the extent to which the relative CP and the CP-external material contribute to the meaning of the entire construction. One end of the continuum was marked by simplex nominals with no relative clause and the other end, by constructions that consisted entirely of a CP (and which were subsequently discussed in great detail in Grosu 2004). The bulk of the typology fell in between these two extremes, and consisted of the traditionally recognized classes of restrictive and appositive RCCs, and, importantly, of a third class of RCCs, which they dubbed 'maximalizers', and which, they proposed, are distinguished from restrictives and appositives by two properties: (i) a formal operation of maximalization, which gave the class of third-type relatives its name, and which takes place within the relative CP, mapping CP from a set (of any kind) to a singleton, and (ii) the interpretation of the 'pivot' NP CP-internally, regardless of whether it occurs within or without the relative clause in overt representation. Note that the semantic contribution of CP to the meaning of the entire RCC was assumed to be more significant in maximalizers than in restrictives, owing to the fact that the meaning of the pivot NP was taken to be an integral part of the meaning of the relative clause in maximalizers, in contrast to restrictives, where the NP was viewed as interpreted independently of the relative clause.

In retrospect and in the light of subsequent research, it seems to me that this view, while helpful as a first approximation, is nonetheless in need of certain refinements and changes. In particular, there are grounds for concluding that (i) and (ii) do not define exactly the same class. Furthermore, it will be useful to make more explicit certain assumptions that were implicit in Grosu & Landman (op. cit.). I thus propose to take a brief fresh look at that typology, which is now eleven years old, prior to considering where the two constructions that form the focus of this paper stand in relation to it.

Starting with (ii), it needs to be made clear that a CP-internal construal of NP does not in and of itself prevent a restrictive construal, because an intersective/conjoined construal can be obtained from a syntactic representation with a CP-internal NP by assuming that abstraction (or binding by a determiner) applies un-selectively. As it happens, such an analysis turns out to be optimal for the RCCs of Lakhota, whose pivot NP is CP-internal in overt representation. Grosu & Landman (op. cit., section 4), relying entirely on data provided in Williamson (1987), accepted Williamson's argumentation that the overtly internal NP needs to be CP-external in the input to semantics (they also showed that these RCCs satisfy all the diagnostics for a

restrictive construal). It turns out, however, that Williamson's argumentation for covert raising of the NP head was based on empirically incorrect data. Thus, consider the data in (1).

- (1) a. [DP[CP Mary[*NP owiža wq*] kaže] ki] he ophewathu.
 Mary quilt a make the Dem I-buy
 'I bought the quilt that Mary made.'
 b. *Šuka wqžini* ophewathu **šni**
 dog a-not bought.I Neg
 'I bought no dog.'
 c. [*Šuka wqžini* ophewathu] cha sape **šni**
 dog a-not bought.I Ind black Neg
 'No dog that I bought is black.'
 d. [*Šuka* eya ophewathu] ki *wqžini* sape **šni**
 dog some.Pl bought.I the a-not black Neg
 'None of the dogs I bought is black.'

(1a) (= Williamson's (4a)) illustrates an 'ordinary' RCC, with the pivot NP (in italics) within the relative CP, and a determiner outside CP. Williamson noted that Lakhota has negative concord, i.e., negative nominals need to be licensed by a clause-mate token of sentential negation, a phenomenon illustrated in (1b) (= Williamson's (18a)). In addition, she proposed that a negative internal head superficially violates the clause-mate requirement on negative concord, in the sense that the licensing token of sentential negation can only occur in the matrix, and offered (1c) (= her (21)) in support. To account for (1c), she proposed that NP undergoes covert raising and satisfies the clause-mate requirement at LF. However, Regina Pustet (p.c.), relying on extensive field work, recently informed me that such data are systematically rejected by native consultants, and that the only way to express something close in meaning to the purported sense of (1c) is by means of a partitive construction like (1d), where the clause-mate requirement is satisfied in overt representation. If so, there is no support for covert NP raising, and there is in fact at least one reason for not assuming it, namely, the fact – also pointed out by Williamson – that the NP head may occur within constituents that constitute syntactic islands in other languages (see her (15b)). In sum, the optimal analysis of Lakhota RCCs seems to be in terms of an input to semantics where the NP head is CP internal and gets un-selectively bound by abstraction (or by a determiner²), with the result that (1a), just like its English translation, gets interpreted as in (2).

(2) BOUGHT (I, $\sigma(\lambda x. \text{QUILT}(x) \wedge \text{MADE}(m,x))$)

We may thus conclude that an analysis which relies on a CP-internal position of NP in the input to semantics is not inconsistent with an intersective/conjoined construal.

The next point that needs to be made is that a number of situations in which internal construal of NP is at least *prima facie* justified nonetheless allow analyses in which NP is CP-external in the input to semantics **and** NP and CP combine by intersection. Such situations involve RCCs with overtly CP-external NPs, in which NP is in some way **dependent** on an element internal to CP, and are known in the literature as RCCs with 'reconstruction' effects. An illustration can be provided in terms of the construction in (3), where the pronoun within the italicized NP can be construed as 'bound' by the boldfaced distributive universal quantifier.

(3) [The *relative of his_i* that **every student_i** invited ___ to dinner] was his_i mother.

Jacobson (2002, 2004) discussed this construction in considerable detail, and showed that it can be interpreted on the basis of its overt representation by assuming that the gap denotes a variable over functions from individuals to individuals, and by lifting NP from a predicate of individuals to a predicate of functions of the type just indicated³. If so, should one consider such RCCs restrictive? This depends on how broadly or narrowly we wish to define 'restrictive.' A very narrow characterization that comes to mind is that an intersective construal is straightforwardly obtainable in virtue of abstraction within CP, without any manipulation of logical types before or after abstraction. As we shall see, this characterization may arguably be too narrow in certain cases, but it constitutes a good initial approximation. Given this characterization, (3) is squarely excluded from the restrictive class under Jacobson's analysis, because both the gap and the external NP need to undergo type-shifting.

We now turn to the property of maximalization, i.e., property (i) attributed by Grosu & Landman to third-type RCCs. One immediate consequence of maximalization is that in view of the singleton status of CP, the RCC is felicitous with definite, and sometime universal, force, but not with existential force. Grosu & Landman (1998, section 2.5) suggested an explanation for this effect, which was spelled out more explicitly in Grosu (2002, example (10b)), where it was suggested that the effect arises out of a pragmatic conflict between the uniqueness of the singleton's membership and the implicature of possible non-uniqueness associated with existential quantification. An anonymous reviewer of an earlier version of this paper pointed out that this state of affairs is a special case of a more general principle, dubbed 'Maximize Presupposition', and invoked in Heim (1991) to account for the preferred status of the definite article in superlatives. Basically, this principle says that when a presupposition of uniqueness exists, this state of affairs should be 'acknowledged' by the determiner, so that the definite article, which has a stronger presupposition than the indefinite article, is preferred to the latter.

Importantly, maximalization is a sufficient condition for singleton status of the relative CP, with resulting infelicity of existential quantification, but the converse is not true, because CP may be a singleton for pragmatic reasons. Accordingly, infelicity of existential quantification does not, all by itself, indicate the need for a formal operation of maximalization. To see this, note that in a context where A gave B exactly one book, it is more natural for A to ask B the question in (4a) than the one in (4b), but nothing prevents the straightforward intersection of NP and CP, so that there are no grounds for viewing the bracketed RCC in (4a) as anything other than a *bona fide* restrictive.

- (4) a. Where is [the book I gave you]?
b. #Where is [a book I gave you]?

Concerning the typology of RCCs, we may assume that maximalization excludes an RCC from membership in the restrictive class only when it is required by the grammar, rather than by the pragmatic or world-knowledge considerations. In actual practice, there may be cases in which it is difficult to decide whether the trigger for maximalization is intra- or extra-grammatical, but in view of the existence of clear cases, this principle is a useful one.

Let us now reconsider the nature of third-class relatives, which Grosu & Landman proposed to characterize by means of properties (i) and (ii). To keep matters as simple as possible, we will limit ourselves to evaluating the appropriateness of (i)-(ii) with respect to overtly externally-headed RCCs, because the two constructions discussed in the ensuing sections belong to this syntactic type. So far, we have maintained property (i) unchanged, and have proposed that property (ii) be replaced with reconstruction effects, however these are to be analyzed. Do these two properties define exactly the same class? The answer is negative. Although the two classes overlap to a significant extent, they do not coincide. This can be appreciated in relation to the construction in (3), which happily allows existential quantification, as illustrated in (5), and thus does not qualify as a 'maximalizer.'

- (5) [A *relative of his_i* that **every student_i** invited __ to dinner] was his_i mother, another one was his_i father.

What emerges from the foregoing is that third-type relatives are not a fully unitary class, that the typology of RCCs is more complex than Grosu & Landman assumed, and that the characterization of hitherto unanalyzed RCCs needs to be done with care. With these points in mind, let us focus on the class of 'degree RCCs' and address the issue of their placement within the (partial) refined typology I have just sketched.

As Grosu & Landman (1998) pointed out, this term (due to Heim 1987), covered (at least) two types of construction that exhibit rather different properties, and need to be analytically kept apart. The two varieties are illustrated by the data in (6a) and (7).

- (6) a. He took away [the three books that *there* were __ on this desk].
 b. He took away [the three books that were __ on this desk].
 (7) a. Israel will never be able to recruit [the (million) soldiers that the Chinese paraded __ last May Day].
 b. Israel will never be able to recruit [the (three million) soldiers that *there* __ are in the Chinese army at the moment].

The variety in (6a), characterized by a gap in the *there BE* __ *XP* context and the primary target of Grosu & Landman's analytical effort, does not immediately reveal the involvement of degrees in its make-up, because the bracketed expression is not felt to denote degrees, but rather entities, in fact, the kind of entities denoted by the bracketed expression in (6b), an incontrovertible restrictive RCC. What makes (6a) initially puzzling, and thus, interesting, is that the relative CP cannot straightforwardly form a predicate of **individuals**, because its individual variable is existentially bound within CP. Carlson (1977) pointed out that CP can form a predicate of **degrees**, by abstraction over a free degree variable 'modifying' the existentially bound individual one, but this step left it unclear how the RCC can end up denoting individuals. Grosu & Landman proposed to solve this puzzle by pairing the degrees that constitute possible values of the degree variable with entities that these degrees measure, and by abstracting over these ordered pairs. The result is that CP denotes a predicate of ordered pairs of the kind indicated, and following an operation of maximalization which maps this predicate to a singleton, the correct sum of individuals can be recovered from the unique maximal pair in the singleton⁴.

Constructions like (6a) qualify as 'third-type' RCCs in a number of ways. First, as just noted, intersection of NP with CP is not straightforwardly available, so that such RCCs fall outside the restrictive class. Second, there is an arguable reconstruction

effect, in the sense that the external NP restricts a variable that lies in the scope of CP-internal existential quantification. Third, the RCC in (6a) differs from the one in (6b) in being infelicitous with existential force in any context. Thus, consider the data in (8).

- (8) a. #He took away [three books that *there* were ___ on this desk].
 b. He took away [three books that were ___ on this desk].

In a context where it is not assumed that there were just three books on the table, (8b) is unsurprisingly felicitous. In contrast, (8a) is infelicitous in the same context, an unexpected state of affairs if the RCC in this example is assumed to be restrictive. The infelicity of this example points to the conclusion that the relative CP denotes a singleton for grammatical, rather than pragmatic, reasons, and as indicated above, Grosu & Landman proposed to account for this state of affairs by assuming an operation of maximalization, which maps the output of abstraction (which is a set ordered by the part-of relation) to the singleton that contains the unique ordered pair formed by the maximal individual sum and the corresponding maximal degree. Is maximalization in this case coerced by grammatical considerations, or merely by pragmatic preferences? I believe the trigger is grammatical, and lies in the fact that entities need to be 'recovered' from their measures. Observe that entities can be unambiguously recovered from specific measures just in case the pair they form is unique, and in a set of pairs ordered by the part-of relation, only the maximal pair is unique. This is, I suggest, why maximalization operates in these constructions.

Having seen that the variety of degree RCC in (6a) falls outside the class of restrictives in more than one way, we now turn to the data in (7). While (7a-b) certainly allow construals comparable to that of (6a) (on which Israel contemplates the recruiting of actual Chinese soldiers), they can also have construals more plausible in our world, on which the soldiers defined in the matrix and those defined in the relative are distinct individuals having only the same cardinality. The reduced versions of (7a-b) can in fact be unambiguously paraphrased by means of an explicit predicate of numerical degrees, in particular, *number*, as shown in (9).

- (9) a. Israel will never be able to recruit [the number of soldiers that the Chinese paraded ___ last May Day].
 b. Israel will never be able to recruit [the number of soldiers that there ___ are in the Chinese army at the moment].

As pointed out in Grosu (2002, section 4), there are no grounds for viewing such constructions as anything other than *bona fide* restrictive RCCs. For one thing, they are not maximalizers, because they allow existential quantification in appropriate contexts. While substituting *a* for *the* in (7) yields an odd result (for pragmatic reasons, since the number of soldiers paraded by the Chinese on a specific day, or constituting the Chinese army at a specific moment, is normally assumed to be unique⁵), perfectly acceptable constructions can be obtained when the number of soldiers within the relative is defined relative to a multiplicity of situations, as in (10), for example.

- (10) a. This year, we were able to recruit [a number of soldiers that we had {never, rarely} managed to recruit ___ before].
 b. This year, we were able to recruit [a number of soldiers that there had {never, rarely} been ___ in our army before].

Another reason for viewing such RCCs as restrictive is that nothing seems to stand in the way of intersection of CP with the predicate of degrees in the matrix. Assuming that the relative in, e.g., (9a) has the essential form *the Chinese paraded n soldiers last May Day*, where n is a variable over numbers, abstraction will yield a set of numbers that can straightforwardly intersect with the predicate *number*.

At this point, we have laid the preparatory ground for addressing the constructions that form the focus of this paper. Before plunging into this enterprise, however, it seems to me appropriate to spell out explicitly what I view as right and what I view as wrong in the characterization of the typology of RCCs put forward by Grosu & Landman (1998).

A central thesis of these authors was that maximalization as a grammatical property of RCCs is found in a variety of syntactic garbs in the languages of the world, in particular, in free relatives, in correlatives, in certain externally headed relatives (e.g., (6a)), and in certain internally headed relatives (e.g., those of Japanese and Korean). I believe this thesis was essentially correct. What I believe was incorrect was the assumption that the class of maximalizers coincides with the class of RCCs whose pivot NP needs to be 'internally interpreted' (in a framework that relies on syntactic 'reconstruction'). We have already seen in (5) that the latter property does not imply the former one. An additional illustration of this state of affairs is provided by (9b), where the external noun *soldiers* needs to restrict the individual variable that is existentially bound within CP, but maximalization over numbers is inappropriate, given the acceptability of (10b). A comparable illustration can be provided in terms of RCCs externally headed by idiom chunks. Thus, consider (11).

- (11) a. He made [the *headway* that I expected him to *make* ____].
b. He made [a *headway* that I did not expect him to *make* ____].

The italicized items are chunks of a single idiom, and such data have often been viewed as strong arguments for syntactic reconstruction. Nonetheless, (11b) is acceptable, showing that we do not have maximalization. The reason for the acceptability of (11b) is essentially the same as in the case of (10b): The noun *headway*, which has the essential interpretation of *progress*, allows an implicit degree modifier, and abstraction applies to a degree variable of this type. Thus, (11b) has a meaning that can be made more explicit by means of the less idiomatic formulation *he made an amount of headway that I did not expect him to make*.

3. Two Degree RCCs: General Characterization

The two degree RCCs that form the focus of this paper are, at least impressionistically, closer in meaning to data like (9) and the degree-denoting construal of (7) than to data like (6a) and the entity-denoting construal of (7), in that, just like the former two types of data, they denote degrees, rather than entities. One of these constructions has wide cross-linguistic distribution, and is illustrated with data from Hebrew, French, Romanian, and English in (12) and (13), where the English data in the (d) sub-cases constitute adequate fluent translations for the data in the corresponding (a)-(c) sub-cases. The other construction differs superficially from the first only in failing to exhibit the definite article (in languages that have such an

article). It is far more limited in cross-linguistic distribution, being so far identified only in Romanian (and apparently in Albanian⁶), as can be seen by comparing (12)-(13) with (14)-(15), where only the (c) sub-cases are acceptable.

- (12) a. [Tish'a-t ha-kilogramim she-mit'an ha-yad shelxa **shokel** ___]
nine-CS⁷ the-kilos that luggage-CS the hand your weighs
 lo yimneu mimxa la'alot la-matos.
 not prevent from-you to ascend to-the-plane
- b. [Les neuf kilos que **pèse** ___ ton bagage à main] ne t'empêcheront pas de
the nine kilos that weighs your luggage of hand Neg you will.PL not of
 monter dans l'avion.
climb in the plane
- c. [Cele nouă kilograme cât **cântărește** ___ bagajul tău de mână] nu te vor
the nine kilos how-much weighs luggage-the your of hand not you will.PL
 împiedica să te urci în avion.
prevent Subj Refl climb in plane
- d. [The nine kilos that your hand-luggage **weighs** ___] won't prevent you from
 boarding the plane.'
- (13) a. [Shesh ha-shaot she-seret ze **nimshax** ___] hayu yoter mi-ma-she
six-CS the-hours that film this lasted were more from what-that
 ha-kaxal haya mesugal lisbol.
the-audience was able to-endure
- b. [Les six heures qu'a **duré** ___ ce film] ont été plus que le public
the six hours that lasts this movie have been more that the audience
 n'a pu supporter.
not has been-able to-endure
- c. [Cele șase ore cât a **durat** ___ filmul ăsta] au fost mai mult decât
the six hours how-much lasts movie-the this have been more much than
 a putut suporta publicul.
has been-able to-endure audience-the
- d. [The six hours that this movie **lasted** ___] were more than the audience
 was able to endure.'
- (14) a.#[Tish'a kilogramim she-mit'an ha-yad shelxa **shokel** ___]
nine kilos that luggage-CS the hand your weighs
 lo yimne'u mimxa la'alot la-matos.
 not prevent from-you to ascend to-the-plane
- b.#[Neuf kilos que **pèse** ___ ton bagage à main] ne t'empêcheront pas de
nine kilos that weighs your luggage of hand Neg you will.PL not of
 monter dans l'avion.
climb in the plane
- c. [Nouă kilograme cât **cântărește** ___ bagajul tău de mână] nu te vor
nine kilos how-much weighs luggage-the your of hand not you will.PL
 împiedica să te urci în avion.
prevent SubjM Refl climb in plane
- d.#[Nine kilos that your hand-luggage **weighs** ___] won't prevent you from
 boarding the plane.'
- (15) a.#[Shesh sha'ot she-seret ze **nimshax** ___] hayu yoter mi-ma-she
six hours that film-CS this lasted were more from what-that
 ha-kaxal haya mesugal lisbol.
the-audience was able to-endure

- b.#[Six heures qu'a **duré** __ ce film] ont été plus que le public
six hours that lasts this movie have been more than the audience
 n'a pu supporter.
not has been-able to-endure
- c. [Şase ore cât a **durat** __ filmul ăsta] au fost mai mult decât
six hours how-much has lasted movie-the this have been more than
 a putut suporta publicul.
has been-able to-endure audience-the
- d.#[Six hours that this movie **lasted** __] were more than the audience
 was able to endure.'

While the (c) sub-cases of (14)-(15) seem to have essentially the same truth conditions as the corresponding sub-cases of (12)-(13), they seem to have subtly different **preferred** conditions of use, and turn out, upon closer examination, to be distinctly more restricted in the range of meanings they allow under various lexical manipulations. In view of the superficial difference between them, i.e., presence vs. absence of the definite article, we will call them D(efinite) D(egree)-RCC and B(are) D(egree)-RCC respectively.

Both the RCCs in (12)-(13) and those in (14)-(15) differ from those in (7) and (9) (and also from those in (6) and (8), for that matter) with respect to the properties of their CP-internal gap position. While the gap in, e.g., (7a) and (9a) is the internal argument of a predicate that selects individuals, the gap in all the examples in (12)-(15) is the internal argument of a predicate that selects degrees (on a scale that the predicate specifies). This can be seen by contrasting the italicized expressions in (16) and (17).

(16) The Chinese **paraded** *ninety soldiers*.

(17) a. Bill **weighs** *ninety kilos*.

b. The movie **lasted** *six hours*.

To be sure, the expressions in these two sets of examples are not entirely dissimilar. For one thing, they exhibit a certain similarity in internal structure, in the sense that both consist of a numeral and a noun, with the difference that the noun in (16) denotes an individual, while the nouns in (17) denote abstract measure units, which may function as classifiers in expressions like *ninety kilos of wheat*. This similarity is reflected, for example, in the fact that **restrictive** relativization may 'target' the position of the numeral in both cases, as can be appreciated by noting the parallelism between (10a) and (18) (the important shared property is that the RCCs are existentially quantified and felicitous in both cases).

(18) a. Bill weighs [a number of kilos that he has {never, rarely} weighed __ before.

b. This movie lasts [a number of hours that {no, few} other movies known to me last __].

At the same time, the expressions in (17) denote not merely a set of measure units, but in fact a degree, viewed as a point on a scale; for example, *ninety kilos* may be viewed as the upper endpoint of an interval on the weight scale, the lower endpoint of the interval being zero. Now, when the gap of relativization occupies the position of the entire internal argument of, say, *weigh* or *last*, not just that of its numeric sub-element,

the resulting RCC is generally felicitous only with definite force, as can be seen by comparing the (a), (b), and (d) sub-cases of (12)-(13) with those of (14)-(15).

Why is this so? The answer, I submit, needs to be sought in the fact that the boldfaced predicates are relations between individuals and degrees that they possess; for example, *weigh* relates an individual to its weight. Since the weight of an individual is typically viewed as unique (*modulo* the nicety noted in footnote 5), the relative in the various sub-cases of (12) denotes a singleton, in particular, the one whose unique member is the degree of weight possessed by 'your' hand-luggage, and this results in infelicity of the RCC under existential quantification for reasons already familiar. Now, the attribution of a unique weight to an entity follows from our view of the world (see footnote 5), not from strictly grammatical considerations. If so, are the RCCs in (12)-(13) restrictives? At this point, a slight flexibility in our characterization of restrictives (hinted at in section 2) may be needed to provide a positive answer. The reason some flexibility is needed is that the external NP, i.e., *nine kilos* in (12d), is most naturally construed as denoting a degree, i.e., an individual of a special kind, and an individual cannot intersect with the singleton denoted by CP. To allow intersection, it is necessary to lift NP by means of the operation IDENT (Partee 1987), which yields the set of degrees that are identical to ninety kilos. So, depending on how we strictly we define the class of restrictive RCCs, we may say either that DD-RCCs are restrictive or that they are 'almost so.'

Before turning to a consideration of BD-RCCs, it is important to establish two further points about DD-RCCs. The first point is that the numerical element within expressions like those in (17) need not be precise, with the result that what is denoted may be not a point on a scale, but rather a point included in an interval whose limits may be defined with varying degrees of precision. This can be appreciated by examining the various sub-cases of (19). In (19b-c), for example, the relevant interval runs from twenty kilos to infinity and from zero to ten kilos respectively, in (19d-e), the ends of the interval are left vague, but we understand the interval to begin above zero and to end not too high (e.g., from two to eight kilos). As for (19f), its optimal characterization may well be not in terms of inclusion in an interval, but rather in terms of an unspecified degree that is claimed to be too great or small⁸ (more exactly, to be measurable in terms of too many or of few kilo-units). I return this point in section 4.1 (see (40) and the discussion thereof).

- (19) a. Your hand-luggage weighs *almost twenty kilos*.
 b. Your hand-luggage weighs *at least twenty kilos*.
 c. Your hand-luggage weighs *at most ten kilos*.
 d. Your hand-luggage weighs *(just) a few kilos*.
 e. Your hand-luggage weighs *(just) a couple of kilos*.
 f. Your hand-luggage weighs *{too many, few} kilos*.

Putting the last point aside for the time being, I note that the italicized expressions in (19) may also occur as CP-external NPs of RCCs, as illustrated in (20). Comparable data can be constructed in other languages, in particular, in French and Romanian (illustration omitted)⁹.

- (20) a. [The *{almost, at least} twenty, many} kilos that your hand-luggage weighs ___*] may cause you serious problems.
 b. [The *{at most ten, mere couple of, few} kilos that your hand-luggage weighs ___*] will cause you no problems.

Now, observe that the RCCs in (20) exhibit the definite article, and note that suppression of the article leads to infelicity (comparable effects are detectable in French). The reason for this is essentially the same as for data like (12a,b,d), i.e., it is traceable to the fact that the relative CP is a singleton. True, the set denoted by NP (after lifting) is itself a singleton in (12), and not a singleton in (20) (where it includes the infinitely many degrees that are a part of an interval), but this does not affect the singleton status of the output of intersection, since the (non-null) intersection of a singleton with any set is itself a singleton.

The second point that needs to be established in relation to DD-RCCs is that although the degree variable associated with the CP-internal gap does not syntactically (and thus, semantically) 'modify' an individual variable, as is the case, for example, in (7) and (9), the two kinds of data are nonetheless similar in that the degree variable in DD-RCCs denotes a degree **attributed to something**, not just an abstract degree; in particular, it provides a measure of the individual denoted by the subject of the verb whose internal argument the gap is. Accordingly, we may expect DD-RCCs to also allow readings analogous to (6a), that is to say, readings on which the RCC denotes entities possessing a certain measure. As observed in Grosu (2002, section 4), this expectation is fulfilled. I provide illustrations in (21)-(22), using data that concern the scales of linear spatial distance and temporal duration respectively. Note that the RCCs in (21) denote a concrete stretch of road, not an abstract spatial length, and those in (22) denote a specific time period, not an abstract length of time¹⁰. The contrast in denotation between the RCCs in (12)-(13) and those in (21)-(22) is, of course, coerced by the matrix predicates. In (21), a spatial length construal is excluded by virtue of the fact that an abstract length cannot have potholes, and in (22), a strict duration construal is excluded by the fact that an abstract duration cannot be simultaneous with an actual event.

- (21) a. [xamishim ha-kilometrim she ha-kvish nimshax ___ mi-arad
fifty-CS the-kilometers that the-road goes-on from Arad
 le yam-ha-melax] meleyim be-borot.
to sea-the-salt full in-potholes
- b. [Cei cincizeci de kilometri cât se întinde ___ șoseaua dela Arad
the fifty of kilometers how-much Refl stretches road-the from Arad
 la Marea Moartă] sunt plini de hârtoape.
to sea-the dead are full of potholes
- c. [The fifty kilometers that the road {stretches, goes on for} ___ from Arad to the Dead Sea] are full of potholes.
- (22) a. [Shesh ha-shaot she-ha-seret ha-ze nimshax ___] hitraxashu bo-zmanit
six-CS the-hours that the-film the-this lasted took-place co-temporally
 im mahapekha she hayta be bangla-desh be-shavua she avar.
with revolution that was in Bangla-Desh in-the-week that passed.
- b. [Cele șase ore cât a durat ___ filmul] au coincis cu o revoluție
the six hours how-much lasts movie-the have coincided with a revolution
 care a avut loc in Bangla-Deș săptămâna trecută.
which has had place in Bangla-Desh week-the last
- c. [The six hours that the movie {lasted, went on for} ___] coincided with a revolution that took place in Bangla-Desh last week.

Having provided a characterization of DD-RCCs, and having sketched the range of possible lexical substitutions and of possible alternative construals, we now turn to a consideration of BD-RCCs. In virtue of what has been said about the (a), (b), and (d) sub-cases of (14)-(15), the corresponding (c) sub-cases should have no right to exist. Since their existence is not in doubt, the data in this paper having been extensively checked with large numbers of native speakers in Romania, the inescapable conclusion is that they are not existentially quantified counterparts of the (c) sub-cases in (12)-(13), but something different. That BD-RCCs are not existentially quantified emerges clearly from the intuition that, e.g., the bracketed expression in (14c) describes the **total** weight of 'your' hand-luggage, just like the bracketed expression in (12c). That is to say, the expression in (14c) is **not** interpreted as an elliptical partitive. In fact, native speakers asked to characterize the difference in meaning between data like (12c) and (14c) have considerable initial difficulty, and typically say that the distinction is exceedingly subtle. After some thought, however, they assent to the following characterization: While it is difficult to think of situations in which one of them would be completely impossible, one can think of situations in which one of them would be more felicitous. In particular, in a situation where neither the speaker nor the hearer knows the exact weight of the hand-luggage but the speaker wants to take an educated guess, (14c) would be perfectly natural, but (12c), less so.

There is one further semantic property that DD-RCCs and BD-RCCs share: In both cases, the degree is necessarily construed **in relation to** some entity it measures, rather than in isolation. What this means is that one hypothesis concerning the nature of BD-RCCs that may come to mind (and has in fact been suggested to me) cannot be correct. The hypothesis in question is that the relative clause is appositive, and that (12a), for example, is a synonymous variant of incontrovertibly appositive constructions like those in (23), which are common cross-linguistically. On this view, the deviance of the (a), (b) and (d) sub-cases of (14)-(15) would presumably be blamed on inappropriate lexical material at the left periphery of the relative clauses.

- (23) a. Tish'a kilogramim, (zot omeret,) ma she-mit'an ha-yad shelxa shokel,
nine kilos this says what that luggage-CS the hand your weighs
 lo yimneu mimxa la'alot la-matos.
not prevent from-you to ascend to-the-plane
- b. Neuf kilos, (c'est à dire,) ce que pèse ton bagage à main,
nine kilos (that is to say) that Czer weighs your luggage of hand
 ne t'empêcheront pas de monter dans l'avion.
Neg you will.PL not of climb in the plane
- c. Nouă kilograme, (adică,) atât cât cântărește bagajul tău de mână,
nine kilos (i.e.) that-much how-much weighs luggage-the your of hand
 nu te vor împiedica să te urci în avion.
not you will.PL prevent SubjM Refl climb in plane
- d. Nine kilos, (that is,) what your hand-luggage weighs, won't prevent you
 from boarding the plane.

This hypothesis has little initial plausibility from a prosodic perspective, because the relative clauses of BD-RCCs are not, and in fact must not, be flanked by prosodic pauses, in contrast to the relatives in (23), which must be. More seriously, the hypothesis is inappropriate on semantic grounds. In (23), where the appositive (or parenthetical) material is not a constitutive part of the characterization of *nine kilos*, the main clause predication can be anything that can be coherently predicated of such

expressions in the absence of an appositive/parenthetical, as suggested by the felicity of the data in (24).

- (24) a. Tish'a kilogramim, (zot omeret,) ma she-mit'an ha-yad shelxa shokel,
nine kilos this says what that luggage-CS the hand your weighs
 hem (gam) ha-mishkal shel ha-kelev sheli.
they also the-weight of the-dog my
- b. Neuf kilos, (c'est à dire,) ce que pèse ton bagage à main,
nine kilos that is to say Dem that weighs your luggage of hand
 sont (aussi) le poids de mon chien
are also the weight of my dog
- c. Nouă kilograme. (adică,) atât cât cântărește
nine kilos namely that-much how-much weighs
 bagajul tău de mână, sunt (deasemeni) greutatea câinelui meu.
luggage-the your of hand are also weight-the dog-the-Gen my
- d. Nine kilos, (that is,) what your hand-luggage weighs, {is, are} (also) the weight of my dog.

In contrast, the coherence of a predication applied to a DD-RCC is constrained by the content of the relative, as illustrated by the infelicity of the data in (25), which make the incoherent claim that nine kilos **as the weight of a piece of hand-luggage** is the weight of a dog. Importantly, a comparable BD-RCC exhibits the same kind of incoherence, as shown in (26) (cf. with (25c)).

- (25) a.#Tish'at ha-kilogramim she-mit'an ha-yad shelxa shokel
nine-CS the-kilos that luggage-CS the hand your weighs
 hem (gam) ha-mishkal shel ha-kelev sheli.
they also the-weight of the-dog my
- b.#Les neuf kilos que pèse ton bagage à main
the nine kilos that weighs your luggage of hand
 sont (aussi) le poids de mon chien
are also the weight of my dog
- c.#Cele nouă kilograme cât cântărește bagajul tău de mână sunt
the nine kilos how-much weighs luggage-the your of hand are
 greutatea câinelui meu.
weight-the dog-the-Gen my
- d.#The nine kilos that your hand-luggage weighs are (also) the weight of my dog.
- (26) #Nouă kilograme cât cântărește __ bagajul tău de mână sunt
nine kilos how-much weighs luggage-the your of hand are
 (deasemeni) greutatea câinelui meu.
also weight-the dog-the-Gen my

In sum, the appositive hypothesis cannot be maintained.

Having noted a number of properties shared by DD- and BD-RCCs, we will now note two important differences between them, which strongly suggest that the two constructions need to be differently analyzed, despite their superficial similarity.

One difference concerns the range of possible lexical substitutions in the CP-external NP head. Recall that in the case of DD-RCCs, the range of variation seems to coincide with the one found in the internal argument position of verbs like *weigh* (see (19)-(20) and remarks thereon). In the case of BD-RCCs, the range of variation is

more limited, as illustrated by the contrast between the Romanian DD-RCCs in (27) and the corresponding BD-RCCs in (28).

- (27) a. {Cele câteva kilograme (nenorocite), puține-le kilograme} cât cântărește
the couple-of kilos miserable few-the kilos how-much weighs
 bagajul tău de mână nu te vor împiedica să te urci în avion.
luggage-the your of hand not you will.PL prevent SubjM Refl climb in plane
 'The {(miserable) couple of, few} kilos that your hand-luggage weighs won't prevent you from boarding the plane.'
- b. Mult prea multele kilograme cât cântărește bagajul tău de mână
much too many-the kilos how-much weighs luggage-the your of hand
 te vor împiedica cu siguranță să te urci în avion.
you will.PL prevent with certainty SubjM Refl climb in plane
 'The far too many kilos that your hand-luggage weighs will certainly prevent you from boarding the plane.'
- (28) a. {Câteva kilograme (nenorocite), #puține kilograme} cât cântărește
couple-of kilos miserable few kilos how-much weighs
 bagajul tău de mână nu te vor împiedica să te urci în avion.
luggage-the your of hand not you will.PL prevent SubjM Refl climb in plane
- b. #Mult prea multe kilograme cât cântărește bagajul tău de mână
much too many kilos how-much weighs luggage-the your of hand
 te vor împiedica cu siguranță să te urci în avion.
you will.PL prevent with certainty SubjM Refl climb in plane

Thus, while the version of (28a) with 'a (miserable) couple of kilos' is fine, the one with 'few kilos' and (28b) are deviant¹¹.

The second difference concerns the alternative interpretation that is in principle available to DD-RCCs, and which is illustrated in (21)-(22), i.e., the option of denoting, in appropriate contexts, entities measured by degrees, rather than degrees. As shown by the contrast between (21b)-(22b) and (29a-b) respectively, this option is not available to BD-RCCs.

- (29) a. #[Cincizeci de kilometri cât se întinde __ șoseaua dela Arad
fifty of kilometers how-much Refl stretches road-the from Arad
 la Marea Moartă] sunt plini de hârtoape.
to sea-the dead are full of potholes
- b. #[Șase ore cât a durat __ filmul] au coincis cu o revoluție
six hours how-much lasts movie-the have coincided with a revolution
 care a avut loc în Bangla-Deș săptămâna trecută.
which has had place in Bangla-Desh week-the last

Taking stock of what has been established in this section, we have seen that DD-RCCs possess the principal properties of degree constructions discussed in earlier literature, in particular, the ability to denote either degrees that are the measure of some entity or entities that are measured by some degree (cf. (12)-(13) and (21)-(22) with the two senses of (7)). In contrast, BD-RCCs, while sharing certain properties with DD-RCCs, also differ from them in non-trivial ways. In the next section, I will propose analyses of the two constructions, a central goal of which is to capture these shared and distinguishing properties¹².

4. The Analysis of DD-RCCs and BD-RCCs

In this section, I propose compositional semantic analyses for the two constructions discussed in section 3. My working hypothesis is that these constructions do not differ in the internal analysis of the relative CP, the differences lying in the construal of the external material and in the ways in which this material relates to the relative CP.

4.1. The Analysis of DD-RCCs

We begin our analytical task with the kind of DD-RCC illustrated in (12) (for convenience, I use the English data in (12d)). I assume a conservative configurational syntax, with CP an adjunct of NP, and the constituent [NP CP] a complement of the Det(erminer).

Concerning the compositional semantics, there are (at least) two conceivable ways of proceeding, depending on how fine-grained we want our analysis of the relative-internal gap to be. Note that the italicized expressions in (17) can in principle receive either an 'atomic' analysis as the proper name of a degree, or a more fine-grained analysis that takes into account its internal structure (see the paragraph that follows (17)). Correspondingly, the gap can be taken to denote a variable over degrees, represented as δ , or may be assigned internal structure and be represented as $n(\mu)$, where n and μ are variables over (real) numbers and measure units (or classifiers) respectively¹³. The former analysis is arguably sufficient in certain cases, but the more detailed one is also necessary in other cases, for example, when the n variable is the target of abstraction, as in (18) (another situation where the fine-grained analysis appears to be needed; see discussion of (40)).

For the 'rougher' analysis of (12d), the verb *weigh* can be analyzed as denoting a function from degrees to functions from individuals to truth values, of type $\langle \delta, \langle e, t \rangle \rangle$, and its translation is provided in (30) (using the relational notation). Note that the verb restricts the scale on which the degrees are placed.

$$(30) [[\textit{weigh}]] = \lambda\delta\lambda x. \textit{WEIGH}(x, \delta)$$

(30) applies first to the degree variable, yielding $\lambda x. \textit{WEIGH}(x, \delta)$, and then to the subject of *weigh*, yielding $\textit{WEIGH}(\textit{YHL}, \delta)$ (where *YHL* = your hand-luggage). At the relative CP level, abstraction over the degree variable yields a predicate of degrees, of type $\langle \delta, t \rangle$, which is shown in (31). For reasons already noted in section 3, this predicate is a singleton.

$$(31) \lambda\delta. \textit{WEIGH}(\textit{YHL}, \delta)$$

The next step concerns the combination of CP with NP. Since the latter denotes a degree, as proposed earlier, it needs to be lifted to a predicate of degrees in order to intersect with CP. This is straightforwardly achieved by means of the operation IDENT (Partee 1987). Using $9k$ as the name of the degree denoted by NP, IDENT has the effect shown in (32).

$$(32) 9k \rightarrow \lambda\delta. \delta = 9k$$

To allow intersection of the predicates denoted by NP and CP, the syntactic adjunct CP is shifted to the type of modifier of NP, of type $\langle\langle\delta,t\rangle,\langle\delta,t\rangle\rangle$. The shifting operation is shown in (33), where P is a variable of the type of predicates of degrees, i.e., $\langle\delta,t\rangle$. Application of (33) to (31) yields (34), and application of the output to (32) yields (35).

$$(33) CP \rightarrow \lambda P \lambda \delta. P(\delta) \wedge CP(\delta)$$

$$(34) \lambda P \lambda \delta. P(\delta) \wedge \text{WEIGH}(\text{YHL}, \delta)$$

$$(35) \lambda \delta. \delta = 9k \wedge \text{WEIGH}(\text{YHL}, \delta)$$

Since (35) was derived by the intersection of two singletons, it is itself a singleton, a state of affairs that licenses, in fact, requires, the application to it of a definiteness operator, for reasons noted in section 2. The output of this operation is a degree, and the matrix predicate, i.e., *won't prevent you from boarding the plane*, abbreviated as WPYBP, is applicable to individuals defined broadly enough to include degrees. (12d) ends up translated as in (36).

$$(36) \text{WPYBP}(\sigma(\lambda \delta. \delta = 9k \wedge \text{WEIGH}(\text{YHL}, \delta)))$$

This concludes the presentation of the rough analysis of (12d). We now turn to a consideration of the data in (20), using one of the versions of (20a) (reproduced as (37) below) for purposes of illustration.

$$(37) [\text{The } \textit{at least twenty kilos} \text{ that your hand-luggage weighs } ___] \\ \text{may cause you serious problems.}$$

Here, the rough analysis must be minimally different from the one just presented, because the italicized expression cannot be viewed as the proper name of an **atomic degree**, but rather as the name of (a plurality of degrees corresponding to) an **interval** on the weight scale. To allow intersection with CP (which I assume is analyzed as before), the proper name at issue (abbreviated as $20\text{-}\infty k$) needs to be lifted into the set of degrees that are a part of this interval, as shown in (38).

$$(38) 20\text{-}\infty k \rightarrow \lambda \delta. \delta \sqsubseteq 20\text{-}\infty k$$

Intersection with the singleton denoted by CP yields a singleton, just as before, and the remainder of the derivation continues along the lines indicated above.

The analysis proposed for (37) can be extended to most of the remaining sub-cases of (20); in particular, it can be extended to any DD-RCC whose CP-external NP is one of the italicized expressions in (19a-e). Furthermore, the analysis proposed for data like (12) may be incorporated into the one proposed for (37), since identity may be viewed as the limiting case of the part-of relation. It is doubtful, however, that this analysis can be plausibly extended to DD-RCCs based on the italicized expressions in (19f), because there are facts which suggest that such expressions are understood as denoting not intervals, i.e., pluralities of degrees, but rather pluralities of measure units. The facts just alluded to concern the (im)possibility of using such expressions in copular constructions whose subject incontrovertibly denotes a degree.

Thus, compare the data in (39) with those in (40).

- (39) a. The weight of your hand-luggage is *twenty kilos*.
 b. The weight of your hand-luggage is *almost twenty kilos*.
 c. The weight of your hand-luggage is *at least/most ten kilos*.
 d. The weight of your hand-luggage is *(just) a few kilos*.
 e. The weight of your hand-luggage is *(just) a couple of kilos*.
 (40) #The weight of your hand-luggage is *many/few kilos*.

(39a) clearly equates the degree denoted by the subject with the one denoted by the post-copular expression, and (39b-e) express the inclusion of the degree denoted by the subject into an interval defined by the post-copular expression. (40) is, however, unacceptable, and has the intuitive feeling of an attempted equation of sortally incompatible entities, much as in (41b), for example, which is not an acceptable way of conveying the content of (41a).

- (41) a. The duration of the movie is six hours.
 b.#The movie is six hours.

I thus propose to conclude that the italicized expressions in (40) are, for some reason, construed only as denoting measure units¹⁴, which are **sortally** different from degrees (they may well also be distinct in logical type, but the sortal distinction is what matters here; see footnote 13). If so, it follows that the versions of (20) with *many/few kilos* need to be analyzed in terms of abstraction over measure units, not over degrees. This in turn requires the more fine-grained analysis of the gap that was noted at the beginning of this section.

I now proceed to illustrate this approach with respect to the version of (20b) with *few* (reproduced as (42) for convenience).

- (42) [The few kilos that your hand-luggage weighs ___] will cause you no problems.

As indicated at the beginning of this section, the gap is interpreted as $n(\mu)$. The verb *weigh* is translated as in (43).

- (43) [[weigh]] = $\lambda\mu\lambda x.WEIGH(x, (n(\mu)))$

Following application of (37) to its two arguments, the n variable needs to undergo Existential Closure at the IP level, and subsequent abstraction over the μ variable yields (44) as the translation of the relative CP.

- (44) $\lambda\mu\exists n[WEIGH(YHL, (n(\mu)))]$

Now, although the number of measure units is not specified, we know it is unique, because the entity denoted by YHL has a unique weight, definable in terms of a unique number of kilos. I suggest that this state of affairs coerces singleton status for (44), the unique member of this set being the sum of measure units that makes up the weight of YHL. In the external NP, *kilos* is interpreted as $\lambda\mu.KILOS(\mu)$, and *few kilos* is interpreted as $\lambda\mu.KILOS(\mu) \wedge FEW(\mu)$ (in words: the set of sums of measure units of the type 'kilo' that are made up of few atoms). This set can intersect with (44), yielding (45). Since (44) is a singleton, (45) is a singleton, too. Following application of the definite article to (45) and of the matrix predicate to the output of this operation, (42) translates as in (46).

- (45) $\lambda\mu. \text{KILOS}(\mu) \wedge \text{FEW}(\mu) \wedge \exists n[\text{WEIGH}(\text{YHL}, (n(\mu)))]$
 (46) $\text{WCYNP}(\sigma(\lambda\mu. (\text{KILOS}(\mu) \wedge \text{FEW}(\mu) \wedge \exists n[\text{WEIGH}(\text{YHL}, (n(\mu)))]))$)

4.2. THE ANALYSIS OF BD-RCCs

In proposing an analysis of BD-RCCs, the following points need to be kept in mind: The analysis must capture the fact (i) that the denoted degree or interval is necessarily understood **in relation to** an entity that it measures or includes the measure of, and (ii) that it expresses the **total measure** of the relevant entity (if it is an atomic degree), or includes the **total measure** of that entity (if it is an interval). Furthermore, the analysis needs to exclude in a principled way (iii) constructions headed by expressions like *many/few kilos* (see (28)), and (iv) constructions that purport to denote entities measured by degrees (see (29)). Finally, given the apparent absence of principled factors that can motivate the presence/absence of BD-RCCs in a language, (v) the analysis needs to 'blame' the presence/absence of BD-RCCs on the presence/absence of some language-specific feature.

Syntactically, I propose to assume no configurational difference between DD-RCCs and BD-RCCs (other than the absence of the definite article in the latter). Semantically, I propose to assume that the CP-external material denotes an atomic degree in cases like (14c), and an interval in cases like the acceptable version of (28a) (as well as in comparable cases where the CP-external material is, e.g., *zece kilograme cel mult/puțin* 'ten kilos at most/least'). The crucial question is how to capture property (i) above, i.e., that the degree/interval is not considered in isolation, but as a property of an entity. There may well be a number of solutions to this problem, but the only one that 'works' and that I can think of at the moment relies on an extension of the machinery used by Landman (1989) to characterize 'restricted individuals', such as those described by expressions like *John as a judge*, in situations where John is, e.g., also a hangman. If we think of abstract degrees as having 'instantiations' or 'realizations' as a property of some entity, we can conceive of such instantiations as 'restricted degrees', and this is what I propose to build on in this section.

Landman constructs his analysis on the basis of the intensional logic of Thomason (1980), in which the basic logical types are the type *e* of individuals and the type *p* of propositions, so that predicates are of type $\langle e, p \rangle$. Landman proposes to represent both unrestricted and restricted individuals as intensional generalized quantifiers of type $\langle \langle e, p \rangle, p \rangle$. The unrestricted expression *John* denotes the set¹⁵ of properties that John in all his aspects has, i.e., $\lambda P.P(j)$, and the restricted expression *John as a judge* denotes a possibly different set of properties, namely, the set of properties that John **as a judge** has, a set that Landman represents as in (47).

- (47) $j \uparrow J(\text{UDGE})$

In analyzing BD-RCCs, I assume that CP is analyzed just as in comparable DD-RCCs up to the stage where it needs to be shifted to modifier status. Thus, the CP of (14c) will translate just like the one of (12c), i.e., as (31) (reproduced below for convenience).

- (31) $\lambda\delta. \text{WEIGH}(\text{YHL}, \delta)$

However, the role of CP as a modifier is different in the two constructions. Instead of intersecting with a predicate, as in (33) (reproduced below), it needs to specify how a degree is instantiated. Assuming that the head of CP, i.e., C, carries a licensing feature (call it [ζ]), this feature allows the mapping of CP to a function from degrees to restricted generalized quantifiers of degrees, as in (48)¹⁶.

- (33) a. $CP \rightarrow \lambda P \lambda \delta . P(\delta) \wedge CP(\delta)$
 (48) $CP \rightarrow \lambda \delta . \delta \uparrow (\lambda \delta' . \delta' = \sigma(CP))$

What (48) says is that the degree denoted by NP is restricted by the property of being identical to the unique member of the singleton denoted by CP.

Application of (48) to (31) yields (49), which can be applied to the degree denoted by NP, yielding (50) as the translation of the BD-RCC; in words: the set of properties possessed by the degree 'nine kilos', in a situation where the latter is restricted by the property of being identical to the weight of your hand-luggage. This expression, a generalized quantifier, can now be applied to the matrix predicate (lifted to a property), yielding (51) as the translation of (14c); in words: the set of properties possessed by 9kg as the weight of your hand-luggage includes the property of not subsequently preventing you from boarding the plane.

- (49) $\lambda \delta . \delta \uparrow (\lambda \delta' . \delta' = \sigma(\lambda \delta'' . \text{WEIGH}(\text{YHL}, \delta'')))$
 (50) $9\text{kg} \uparrow (\lambda \delta . \delta = \sigma(\lambda \delta'' . \text{WEIGH}(\text{YHL}, \delta'')))$
 (51) $9\text{kg} \uparrow (\lambda \delta . \delta = \sigma(\lambda \delta'' . \text{WEIGH}(\text{YHL}, \delta'')))$ (WPYBP)

The analysis I have proposed captures well the intuitive import of BD-RCCs, and accounts for the fact that they seem to have the same truth conditions as minimally different DD-RCCs. Thus, to say that the weight which is nine kilos and is also the weight of YHL is included in the property of not preventing you from boarding the plane is equivalent to saying that the properties of 'nine kilos' in the special situation where it is the weight of YHL include the property of not preventing you from boarding the plane. The fact that a BD-RCC is more natural than a DD-RCC in situations where the degree named by NP is not assumed to be known to the participants in a conversation (see section 3) is plausibly attributable to the fact that the name of this degree is in the scope of the sigma operator in (36), but not in (51). In fact, what is taken for granted in data like (12) and (14c) is only that the weight of YHL is unique (note that this weight is in the scope of the sigma operator in both cases).

The proposed analysis also takes care of all the points noted at the beginning of this section. Point (v) is taken care of by localizing the distinction between languages like Romanian and Albanian from languages like Hebrew, French and English in the featural composition of the relative C ([ζ] constitutes the minimally needed stipulation, pending discovery of a more principled account, in case one exists). Point (i), the necessary bond between a degree/interval and a measured entity is captured by appeal to restricted degrees. Point (ii), the fact that the total measure of an entity is denoted follows from the fact that CP denotes this total measure, and that CP is equated with or is a part of a (sum of) degree(s). Point (iii), the deviance of BD-RCCs headed by expressions like *many/few kilos* is accounted for by the fact that the denotation of such expressions is sortally distinct from degrees/intervals. Point (iv),

the non-existence of BD-RCCs that denote measured entities, follows from (48), which restricts the interpretation of CP to a degree denotation.

5. SUMMARY OF RESULTS

This paper has begun by taking a fresh look at the typology of RCCs proposed in Grosu & Landman (1998), and has argued for the conclusion that the class of non-appositive and non-restrictive RCCs is less uniform than was assumed in that paper, and that the criteria for membership in the restrictive class need to be sharpened.

Against this background, two degree-denoting RCCs have been examined in some detail. One kind, the DD-RCC, had been briefly and informally brought up in earlier literature (in particular, in Grosu 2002), and this paper examined its properties more carefully and provided explicit compositional analyses. The other kind, the BD-RCC, is, as far as one can tell at the moment, a *sui generis* construction insofar as the relation between NP and CP is concerned, with a highly restricted cross-linguistic distribution, and which exhibits interesting similarities with the more common type, but also unmistakable differences. The analysis of BD-RCCs has appealed to more complex formal mechanisms than those needed to analyze DD-RCCs. It is left to future research to investigate whether empirically adequate analyses that are technically 'simpler' are possible.

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ENDNOTES

¹ I am most grateful to Hadas Kotek for insightful discussion of earlier versions of this paper, and for checking the Hebrew data. I am also grateful to Alexandra Cornilescu for drawing my attention to the existence of BD-RCCs in Romanian, a fact of which I had no prior knowledge. Next, I wish to thank Dalina Kallulli for providing data from and information on Albanian. Last, but certainly not least, I wish to thank two anonymous reviewers of an earlier version of this paper, whose sharp critical remarks have led to substantive changes and ultimately to a hopefully improved version, and, it goes without saying, the Israel Science Foundation for its generous support.

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² This suggestion concerning determiners was made in Bonneau (1992), in order to account for the absence of island effects.

³ Jacobson in fact argued that this analysis is conceptually and empirically preferable to one based on syntactic reconstruction.

⁴ The specific implementation of this last step need not concern us here (the interested reader may consult the article at issue for details).

⁵ Strictly speaking, the Chinese paraded not only the maximal number of soldiers they paraded, but also all the lower natural numbers of soldiers. However, the maximal number has special salience in this case. Thus, if one wants to assume maximalization here, it is arguably pragmatically driven.

⁶ As Dalina Kallulli kindly informed me, Albanian resembles Romanian in allowing both data like (12c) and data like (14c), as illustrated by the following example.

- (i) [Nëntë kile(t) që peshon bagazhi yt] nuk janë problem.
nine kilos(-the) that weigh luggage your not are problem
 '(The) nine kilos that your luggage weighs are not a problem.'

Although I have not been able to check as broad a range of data in Albanian as I did in Romanian, the bracketed structure in the reduced version of (i) nonetheless seems to be interpreted in essentially the way in which the one in (3c) is, thus suggesting that the grammar of Albanian allows BD-RCCs. For further parallelisms between such data in the two languages, see footnote 11.

⁷ CS = construct state.

⁸ Note the paraphrases in (i), which some speakers in fact prefer to (19f).

- (i) Your hand-luggage weighs {a lot, very little}.

⁹ Data like (20) are hard to construct in Hebrew, presumably due to the necessary use of the Construct State in DD-RCCs. This matter constitutes a topic for a separate paper, and will thus not be investigated here.

¹⁰ The analysis of such data may require some adaptation of Grosu & Landman's analysis of (6a), in particular, insofar as the formation of ordered pairs of degrees and entities is concerned, but the principal ingredients of the analysis, i.e., maximalization and 'extraction' of the entity member out of the maximal ordered pair, need not be affected. Since this type of data is not of central concern in this paper, I will not go into the details of the needed analytical modifications here.

¹¹ A comparable contrast between DD-RCCs and BD-RCCs exists in Albanian, as illustrated below with respect to 'few.'

- (i) [* (Ato) pak kile që peshon bagazhi yt] nuk janë problem.

the few kilos that weigh luggage your not are problem
*(The) few kilos that your luggage weighs are not a problem.'

¹² One issue that will not be addressed in this paper concerns the possibility of a synchronic and/or diachronic explanation for the presence of BD-RCCs in certain languages, to the exclusion of others. At the moment, I can see no plausible synchronic licensing factors in Romanian, and am in no position to investigate the diachronic steps by which this construction arose. The investigation of this issue with respect to Romanian and/or Albanian is left to future interested researchers.

¹³ The precise type of the variables δ and μ need not concern us here. Landman (2004, pp. 13-15) discusses expressions like *three kilos* in modifying contexts like *three kilos of wheat*, and assigns to expressions like *kilo* and *three kilos* the types $\langle d,n \rangle$ and $\langle d,t \rangle$ respectively, where d , n , and t are the types of individuals, numbers, and truth values respectively.

What matters for present purposes is that degrees and measure units are sortally different, a state of affairs that will become especially relevant in relation to copular constructions and BD-RCCs (see section 4.2).

¹⁴ The contrast between (40) and (19f) suggests that the post-copular position is subject to stricter requirements than the position of the internal argument of verbs like *weigh*. The point can be sharpened by considering (i), which is, if anything, more crashingly deviant than (40). In contrast, 'bare' measure-unit expressions are possible in contrasts like (19f), as shown in (ii) (contrastive focus is needed to avoid triviality).

- (i) ##The weight of your hand-luggage is kilos.
- (ii) My hand-luggage weighs **kilos**, not **tons**!

¹⁵ I follow Landman in loosely referring to these generalized quantifiers as 'sets of properties', even though it would be more correct to refer to them as 'properties of properties.' Hopefully, this will create no confusion.

¹⁶ In constructions where NP denotes an interval of degrees, the operation that shifts CP to modifier status takes the form in (i).

- (i) $CP \rightarrow \lambda\delta.\delta \uparrow (\lambda\delta'. \sigma(CP) \sqsubseteq \delta')$