

The Comparative Correlative in Standard English: An Analysis of the Internal Structures of the First and Second Clauses

Iwasaki, Eiichi

ABSTRACT

The present paper argues that the first clause of the English Comparative Correlative, exemplified by *The more chocolate that you eat, the quicker you put on weight* (Iwasaki and Radford 2009), is a relative clause whose antecedent is a *the more* phrase. This analysis agrees with and supports den Dikken's (2005) crosslinguistic analysis of the Comparative Correlative that the first clause is a relative clause but disagrees in the internal syntactic structure of the first clause. This analysis renders a solution to some of the unsolved syntactic phenomena on this construction. First, the ungrammaticality of the preposition pied-piping can be explained. Second, it is shown that the Doubly-Filled Comp Filter, as discussed since Chomsky and Lasnik (1977), is in fact non-existent, contrary to Abeillé and Borsley's (2008) claim that it exists in this construction. The postulation that the first clause is a relative clause with a *the more* phrase as an antecedent entails that *the* in the English Comparative Correlative is D^0 . Criticism based on the constituency of a *the more* phrase might be raised in objection to this postulation, but the present paper illustrates ample evidence to counter such arguments.

1 . INTRODUCTION

This article attempts to discuss the internal structure of each of the two clauses of the English Comparative Correlatives, exemplified by a structure such as (1):

(1) The more chocolate that you eat, the quicker you put on weight. (Iwasaki and Radford 2009: 3)

The present paper calls the first clause C_1 , the second C_2 , highlighting exclusively the internal syntactic structure of C_1 and C_2 . The present paper puts aside the issue of the structural dependency between C_1 and C_2 , which is discussed elsewhere such as Iwasaki (2010a). Throughout the whole discussion, the present paper heavily owes to Tani (2001) and Tani (2002) the distinction between the quantifier *more* and the degree adverb *more*.

The two most influential articles on Comparative Correlatives are Culicover and Jackendoff (1999) and den Dikken (2005). Culicover and Jackendoff (1999) argue that the English Comparative

Correlative exhibits a *sui generis* structure and many idiosyncrasies (echoed by Abeillé and Borsley 2008) that the current linguistic framework, Minimalism, cannot adequately explain. (Abeillé and Borsley 2008 direct criticism to Principles and Parameters.) In response to their claim, den Dikken (2005) analyzes various languages' Comparative Correlative constructions to show that, in all languages, the Comparative Correlative constructions appear to have relative clauses (as an initial clause) and that they can be analyzed within modern linguistic approaches. The present paper supports den Dikken's argument that C₁ is a relative clause but proposes a different internal syntactic structure of C₁ from den Dikken's.

In both of the major articles mentioned above, the syntactic analysis of C₁ is assumed to be as follows: the whole C₁ is a CP (Complementizer Phrase) with the *the more* phrase being in Spec-CP (Specifier Position of CP) and co-indexed with the trace (copy).

(2) [CP [The more chocolate]_i [C that] you eat t_i]¹.

However, this syntactic analysis poses several syntactic problems, as we will see in depth in Section 3.

In contrast, the present paper's syntactic structure of C₁ is that it comprises the antecedent (*The more*), the relative pronoun (*that*) and the restrictive clause (*you study*). In this analysis, the whole C₁ is a DP (Determiner Phrase), rather than a CP, following Kayne's (1994) analysis of a relative clause.

(3) [DP [D The] [CP more [CP [C that] [TP you study]]]]².

The present paper attempts to argue that the analysis of (3) surpasses that of (2): the analysis of (3) is appropriate to solve a number of syntactic problems that an analysis of (2) would bring about.

With regard to C₂, the present paper adopts Iwasaki and Radford's (2009) analysis that a *the more* phrase undergoes movement to Spec-FocP (the Specifier position of Focus Phrase) as follows.

(4) [FocP [the quicker]_i [Foc \emptyset] [TP you put on weight t_i]].

Putting aside the internal structure of the TP (Tense Phrase), suffice it to say that *the quicker* has moved from the trace (copy) within the TP. The present paper maintains Iwasaki and Radford's position throughout in so far as C₂ is concerned.

The organization of the paper is as follows. In section 2, as a preliminary issue, we classify the two kinds of adjectives in the English Comparative Correlative, namely, attributive and predicative adjectives and conduct preliminary discussion on them. In section 3, we propose that C₁ is a relative clause comprising a DP as we briefly saw above. In section 4, we will examine this hypothesis from various angles, including the properties of *the*, and the adverbial properties of the antecedent. In section 5, we will present some concluding remarks.

1 For readers whose expertise is outside of generative linguistics, it might be helpful to consider a parallel structure to (2) as in (i):

(i) [CP What_i [C did] you eat t_i]?

2 See Kayne's (1994) analysis of relative clauses: he analyzes (i) as (ii).

(i) the picture that Bill liked

(ii) [DP [D the] [CP [NP_i] picture] [CP that Bill liked t_i]]

More in (3) syntactically corresponds to NP *picture* in Kayne's analysis in (i), although the precise categorical status of *more* is by no means clear.

2. PRELIMINARY ISSUE: THE ATTRIBUTIVE ADJECTIVE AND THE PREDICATE ADJECTIVE

2.1. Attributive Adjectives

Let us classify and examine, first of all, the two types of the adjectives in English Comparative Correlatives. Iwasaki and Radford (2009) argue that *more* is a degree adverb when *the* operates in the same manner as *so* which modifies an attributive adjective; according to the analysis, just as “*so* + adjective + *a/an* + NP (Noun Phrase)” undergoes A’ movement, so “*the more* + adjective + *a/an* + NP” also undergoes the same type of movement.

(5) (a) I’ve never had [a [*quite so unpleasant*]_i experience].

(b) I’ve never had [[*quite so unpleasant*]_i an *t_i* experience].

(6) (a) It was rendered [an [*all the more delicate*]_i situation] by the presence of the President.

(b) It was rendered [[*all the more delicate*]_i a *t_i* situation] by the presence of the President.

(Iwasaki and Radford 2009: 6-7)

While the analysis that the (*all*) *the*-phrase forms a constituent seems fine, however, this analysis ascribing A’ movement of *all the more delicate* to the property of *the* is not necessarily plausible, given that even when the comparative phrase has no *the*, such A’ movement is possible. Consider:

(7) (a) It was rendered [a [more delicate] situation] by the presence of the President.

(b) It was rendered [[more delicate]_i a *t_i* situation] by the presence of the President.

The above cases show that a *more*-phrase without entailing *the* is eligible to undergo A’ movement. Therefore, it would be legitimate to conclude that *the* is not relevant to triggering A’ movement here.³

It seems worth mentioning that some varieties of English do allow the overt *of* between the fronted *the*-phrase and the indefinite article as in what follows, in the same way as in a *how/so*-phrase.

(8) (a) [[The more difficult] **of** a *t_i* book] he reads, the more time would be necessary.

(b) [[How difficult]_i **of** a *t_i* book] he read!

(c) [[So difficult]_i **of** a *t_i* book] did he read that it took a lot of time.

The parallelism between (8a) and (8b-c) appears to reinforce the argument that the *the*-phrase is a constituent and perhaps that it originates in the post-article position and subsequently moves to the pro-article position. (For further discussion related to this type of overt *of*, see Kennedy and Merchant (2000), Troseth (2004), and Wood (2002).) Whatever the theoretical details of the structures represented in (8), it is obvious that the relevant adjectives are the embodiment of the attribute use of adjectives.

However, the ungrammaticality of the types of structures in (9) below leads Borsley (2004: fn.

³ Of course, *more* alone cannot undergo A’ movement outside of a nominal. The movement to the edge of a nominal is possible only with the *more* (without *the*) but the movement to the edge of a clause is impossible without *the*.

4) to incorrectly conclude that a comparative expression in English Comparative Correlatives “cannot be an attributive adjective” with the following example.

(9) *The better books I read, the more I understand.

While Borsley’s observation above is tenable only in so far as such examples as in (9) is concerned, a more careful probe into empirical facts in English Comparative Correlatives reveals that they indeed allow attributive adjectives.

(10) (a) [[The more difficult]_i a *t_i* book] he reads, the more time would be necessary.⁴

(b) ??[[The better]_i a *t_i* book] you read, the more you understand.

That (10b) is not favored by many native speakers would be accounted for by the empirical observation that “inflectional comparatives are restricted to internal position” (Huddleston and Pullum 2002: 435). Huddleston and Pullum show the following as examples of this.

(11) (a) Kim is a better player than Pat.

(b) *Kim is better a player than Pat.

Similar to the ungrammaticality of (11b), (10b) has the inflectional comparative *better* although it is combined with *the*.⁵ Again this confirms the claim that A’ movement within a nominal should be ascribed to the property of *more*, rather than *the*: if *the* hold a trigger (whatever the precise feature it is) to A’ movement, (10b) would be perfectly grammatical.

This would account for why such a syntactic analysis as (10b), repeated as (12a) below, is implausible for many native speakers (though there are a few people who accept it).

(12) (a) ??[_{QP} [The better]_i [_Q a] [_{NP} *t_i* book]] I read, the more I understand.⁶

(b) [_{QP} [The more difficult]_i [_Q a] [_{NP} *t_i* book]] I read, the more I understand.

(QP: Quantifier Phrase)

Given that the inflectional adjectives should be restricted to the position after the indefinite article, *the better* cannot move to the position preceding the indefinite article and hence (12a) results in the extreme awkwardness. In contrast, adjectives modified by *more* are eligible to do so; therefore, (12b) turns out to be grammatical. The grammaticality of (12b) is a piece of counterevidence against Borsley’s above argument.

Borsley (2004: fn.4) presumably fails to draw the line between the inflectional adjective and the “*more* + adjective” in the English Comparative Correlative, and hence incorrectly argues that the English Comparative Correlative does not have a predicative adjective. His claim captures the phenomenon with the inflectional adjective but otherwise is incorrect.

Koizumi (2006:75) claims that *the* is more similar to quantifiers such as *any* and *no* in the following cases from Bresnan than degree words such as *as*, *how*, and *so* in that it modifies *more*.

(13) (a) John isn’t any more reliable a fellow than Bill.

4 See Tani (2001: 255) for relevant discussion.

5 Although (11) has the inflectional comparative, it seems that negation words (*any/no*) make it possible for the relevant expressions to be fronted.

6 When an indefinite article is replaced with the definite, then the sentence becomes grammatical.

(i) The better the book I read, the more I understand.

See Section 2.2 for further examples of this type.

(b) *John isn't an any more reliable fellow than Bill. (Bresnan 1973: 288)

(14) (a) John is no more reliable a fellow than Bill.

(b) *John is no more reliable fellow than Bill. (Bresnan 1973: 288)

However, the present paper argues, contra Koizumi, that *any* in (13a) and *no* in (14a) are degree adverbs, forming constituents *any more reliable* and *no more reliable* respectively.⁷ If we replace “*more + adjective*” with *better*, such cases as corresponds to (15b), (16b) would be (marginally) grammatical even after indefinite quantifiers.

(15) (a) We don't have [*any better* a solution] than dismissing incompetent employees.

(b) (?) We don't have [an *any better* solution] than dismissing incompetent employees.

(16) (a) Syntax is [*no better* a choice] than semantics for students of sociolinguistics.

(b) (?) Syntax is [a *no better* choice] than semantics for students of sociolinguistics.

It seems plausible to assume that “*any + adjective*” / “*no + adjective*” can move from within nominal expressions to the positions preceding them. This parallels with A' movement by *so/the* pied-piping their following expressions.

In the cases in (15), (16), *any/no* are not quantifiers but adverbs modifying adjectives. This is clear since “*any + adjective*” / “*no + adjective*” can be placed after nouns, as in the following.

(17) (a) (?) We don't have [a solution] *any better* than dismissing incompetent employees.

(b) (?) Syntax is [a choice] *no better* than semantics for students of sociolinguistics.

On the other hand, there seems to be another type of *any/no* which functions as quantifiers, modifying NPs. This is an issue to be investigated later.

It should be noted that *how many / how much* are not at all parallel to the structure in which *more* as a degree adverb functions in the English Comparative Correlative, such as in (18), since the latter's “*how + Adj*” is only viable with a singular nominal: consider the ungrammaticality of what follows.

(18) (a) *how difficult problems

(b) *how difficult discussion

The degree adverb *how* only functions in link with a singular nominal, not possible with the plural or mass nominal. (See Huddleston and Pullum (2002: 920) and Tani (2002: 165-6) for relevant discussion.) In contrast, *how many people* and *how much money* are totally grammatical and hence this would mean that *how* in the two phrases is essentially different from *how* in the type of the expression exemplified by *how difficult a problem*. This means that *many* in *how many* does not at all have the same syntactic status as the adjective in *how difficult a problem*. In conclusion, *how* in *how many people* and *how much money* does not have a parallel syntactic status with the *how* in a structure like *how difficult a problem*.⁸

7 I am grateful to Andrew Radford (p.c.) for his relevant suggestion.

8 Regarding the discussion in this paragraph, the present paper owes a great deal to Tani's (2002: 165-6) observation.

2.2. Predicative Adjectives

Borsley (2004: fn. 4) argues that the following (19a), instead of (9), is grammatical, adding that (19a) is a reduced counterpart of (19b), holding a predicative adjective *better*.

(19) (a) [The better]_i [the books I read], the more I understand.

(b) [The better]_i [the books I read] are *t_i*, the more I understand. [analyses added]

This is by no means particularly a novel finding: in fact, this is what Tani (2001: 256, 262, fn. 4) discusses with the following examples.

(20) (a) ?[The more beautiful]_i [the {wife/wives} [(that) you get]] {is/are} *t_i*, the happier you will be.

(b) ?[The more excellent]_i [the {book/books} [(that) you read]] {is/are} *t_i*, the more clever you will be.

(c) ?[The cheaper]_i [the {book/books} [(that) you buy]] {is/are} *t_i*, the better.

(d) ?[The faster]_i [the {car/cars} [(that) you own]] {is/are} *t_i*, the better.

(e) ?[The prettier]_i [the {doll/dolls} [(that) you have]] {is/are} *t_i*, the better.

Tani (2001: 256, 262, fn. 4) [brackets in the original; trace index added]

Tani (2001: 262, fn. 4) observes that with *is/are*, the grammaticality of each in (20) gets lower.⁹

It should be emphasized that the relative clause is the part led by the second *the*: the first *the* is a degree adverb that has been discussed. Consider:

(21) [The more difficult]_i [_{DP} [_D the] book you read] (?are) *t_i*, the more time you would need to read it.

In the case above, *the more difficult* is a constituent which moved from the complement position of (covert) *are*. *The book you read* is a constituent, in which the relative clause *you read* modifies the antecedent *the book*. This analysis is further confirmed by the next contrast.

(22) (a) The more difficult the book **that** you read, the more time you would need to read it.

(b) *The more difficult **that** the book you read, the more time you would need to read it.

The grammaticality of *that* in (22a) and the ungrammaticality of *that* in (22b) would be obviously accounted for if we postulate that *the book that you read* is “the antecedent plus the restrictive clause.” In (22b), *that the book you read* is obviously anomalous as a relative clause. However, if we follow Borsley (2004) along with the implication of Abeillé and Borsley (2008: 1142), we would presumably reach the following analysis.

(23) *[_{CP} [The more difficult]_i [_C **that**] the book you read (are) *t_i*]], the more time you would need to read it.

What Borsley (2004: fn. 4) presumably has in mind seems to be that *the book you read* is a constituent (probably a DP) comprising the antecedent *the book* and the relative clause *you read*, and this has (covert) *are* and the complement of this *the more difficult* has moved from its trace (copy) to the fronted position, namely, Spec-CP, according to Abeillé and Borsley (2008: 1142). Moreover, Abeille and Borsley suggest although it is a “surprising” phenomenon, the English Comparative Correlative indeed allows *that* in C⁰ when Spec-CP is filled. This being so, (23) should

⁹ It is conceivable that the lower acceptability of them can be explained by the possibility that the relevant clauses are SCs (Small Clauses) without overt copula verbs, but this is put aside for future research.

be grammatical but in fact it is not; this means that there is something incorrect in their argument. Alternatively, the relative clause analysis in the present paper, such as in (21), would plausibly explain the grammaticality of (22a) and the ungrammaticality of (22b).

To sum up, readers would be well advised to pay careful attention to the distinction between the type of structure argued in section 2.1 and that in section 2.2. This will be an important guide in subsequent discussion in the present paper.

3. PROPOSED ANALYSIS: C₁ AS DP

As we saw in the previous section, preceding articles consider C₁ of the English Comparative to be CP. Hence it is natural for them to assume that, in this type of postulation, the internal structure of C₁ be as follows.

(24) [CP The more chocolate [C that] [TP you eat]], ...

Such a structure means that *that* is C⁰ and *you eat* is TP.

However, such an analysis raises some problems. Firstly, as Abeillé and Borsley (2008:1142) argue, the structure which holds both the overt Spec-CP and C⁰ is “unusual.” Secondly, such a structure, again, as Abeillé and Borsley suggest, cannot capture why the preposition pied-piping is banned in this construction while the exactly the same structure with a *wh*-element is perfectly fine except the Exclamative.

(25) (a) *[CP With the more people [C (that)] [TP you talk]], ...

(b) [CP With whom [C did] [TP you talk]]?

Thirdly, normally the C⁰ has a strong affixal feature, so it triggers the auxiliary inversion, except some embedded clauses. However, the English Comparative Correlative’s C₁ does not allow such a structure as in (26a)¹⁰, though it does in regard to C₂ only to a limited number of speakers as in (26b):

(26) (a) The more (*do) you study, the more you understand.

(b) The more you study, the more (%do) you understand.

This article suggests the possibility of different approaches to this construction’s C₁ and C₂. That is, C₁ comprises DP, which is further made up of the antecedent and the relative clause. Consider the examples from McCawley (1988: 735):

(27) (a) The more people {who/that} you offend, the more trouble {that/*which} you can expect.

(b) The more people to whom you give offence, the harder a time you’ll have.¹¹

(c) The more worried he got, the more coffee {that/*which} he drank.

The postulation that C₁ comprises a kind of antecedent and a relative clause would make it possible to solve some remaining puzzles about this construction. The present paper chiefly discusses this issue.

The syntactic structure that we postulate in the present paper is that C₁ of the English

¹⁰ See Culicover and Jackendoff (1999: 559).

¹¹ I have no explanation to why the inflectional adjective is allowed here. This issue is put aside for future research.

Comparative Correlative has DP which has an antecedent, followed by CP, which is a relative clause.

(28) $[_{DP} [_D \text{The}] [_{CP} \text{more} [_{CP} [_C \text{that}] [_{TP} \text{you study}]]]] (=3)$

This is arguably one standard way of analyzing the relative clause, given Kayne's (1994) analysis of a relative clause, putting aside the further intricacy about the syntactic status of *more*. (See Borsley's (2001) concise summary on the relative clause.) One might argue that Kayne's analysis remains to be amended. Even so, that would by no means affect our argument here: what the present paper considers to be the principal point is that C_1 is DP and hence *the* is D^0 , and moreover, *more* is a kind of antecedent, *that* a non-*wh* relative, and *you study* (a part of) a relative clause.

The argument that *the* is a Determiner is rendered further empirical support from the following pieces of evidence.¹²

- (29) (a) [The more and more snow] we have, the more time would be needed to walk to the station.
 (b) *[The more and the more snow] we have, the more time would be needed to walk to the station.
 (c) ??[The more rain and more snow] we have, the more time would be needed to walk to the station.
 (d) [[The more rain] and [the more snow]] we have, the more time would be needed to walk to the station.¹³

If *the* and *more* formed an immediate constituent in (29b) regardless of the following NP, then (29b) would be grammatical because (29b) would manifest the coordination of the two constituents, the two instances of *the more*. However, the ungrammaticality of (29b), along with the contrastive grammaticality of (29a), demonstrates that *more* and the following NP form an immediate constituent, and subsequently *the* and "*more* + NP" form a constituent. The extreme awkwardness of (29c) in comparison with the grammaticality of (29d) means that when there are two NPs, there need to be two *the*: *the* is linked with NPs.¹⁴

Now, let us look at the advantages that the analysis in (28) would bring about. Firstly, the postulation of this will explain outright the ban on the pied-piping. Consider the following contrast.

- (30) (a) *To the more people (that) you give offence, the harder a time you'll have.
 (b) The more people to whom you give offence, the harder a time you'll have. (=27b))
 ((30b): McCawley (1988: 735))

Secondly, this analysis avoids the criticism from Abeillé and Borsley (2008) that the Doubly Filled Comp Filter argued in Chomsky and Lasnik (1977) appears in the English Comparative Correlative. In regard to the most embedded CP, Spec-CP is empty, keeping room for an escape hatch through which an element within TP can be extracted. In the second-most embedded CP, the Spec-CP is occupied by *more* but C^0 is kept empty. There is no problem with the Spec and Head

¹² In traditional grammar, Curme (1931: 297) explains that C_1 's *the* "is a determinative, pointing to the subordinate clause."

¹³ Regarding (29a-d), see Tani (2001: 254) for relevant discussion.

¹⁴ Some varieties of English allow the following cases, which are straightforward in showing that *more* and the following adjective do not form an immediate constituent.

(i) % [The more *of* examples] you find, the more inspiration you get.

(ii) % [The more *of* surprising examples] you find, the more inspiration you get.

problem since Chomsky and Lasnik (1977).

Thirdly, we can account for the fact that the auxiliary inversion in C_1 is prohibited, in sharp contrast with C_2 . Whatever the theoretical details on the relative clause (for which, see Kayne 1994, Borsley 1997, Bianchi 2000), the relative clause does not allow auxiliary inversion in its clause, at least in Standard English (See den Dikken 2003 for a relevant argument). Hence, naturally, C_1 of the English Comparative Correlative does not allow auxiliary inversion.

Fourthly, the analysis that C_1 is a relative clause following its antecedent is well compatible with Abeillé and Borsley's (2008: 1148) observation that:

“... while fronting is obligatory in the first clause in all the languages that we are aware of, some languages do not always require fronting in the second clause.”

Since the ordinary relative clause, i.e. “the antecedent plus the restrictive clause,” has the antecedent come before the restrictive clause, the observation on C_1 by Abeillé and Borsley above seems compatible with the hypothesis in the present paper. On the other hand, Japanese has a postcedent coming after the restrictive clause modifying it, and hence it seems that Japanese does not have any fronting even in C_1 in the typical Comparative Correlative.¹⁵

One might point out that the present paper's working hypothesis that C_1 is a relative clause is the same as den Dikken's (2003, 2005) argument that C_1 is a (free) relative clause, and hence that the present research is anything but novel. However, this would miss the central points of the syntactic proposal in the present paper. While it is certainly right to say that the present research is the same as den Dikken's in that both of them argue that C_1 is a relative clause in one way or another and hence, that the present paper supports den Dikken's crosslinguistic analysis that C_1 is a relative clause, notwithstanding the disagreement as to the internal structure of C_1 that we will see below. However, essentially, the present article's claim is different from den Dikken's syntactic analysis on the internal structure of C_1 . Let us compare the two analyses. Our syntactic analysis of C_1 is repeated below.

(31) $[_{DP} [_D \text{The}] [_{CP} \text{more} [_{CP} [_C \text{that}] [_{TP} \text{you study}]]]]$ (=28)

In contrast, den Dikken's (2005, 510) analysis of C_1 is that DegP (Degree Phrase) is in Spec-CP, and that within the Spec-DegP there is a PP (Prepositional Phrase). See his example (p. 514):

(32) (a) *By how much* the lesse he looked for this discourse,

(b) $[_{SUBCL} [_{DegP} [_{PP} \text{by} [_{QP} \text{how much}]]] [_{Deg'} \text{the} [_{AP} \text{lesse}]]]_i [\dots t_i \dots]]$

[italic and analyses in the original]

Den Dikken postulates the covert elements (i.e., *by how much*) in Spec-DegP in (32b) (see his section 4 among others), but this is irrelevant to the present discussion. The point is that, in his analysis, the whole DegP is in Spec-CP, and this is co-indexed with the trace (copy) within TP: the DegP which includes a *the*-phrase. Hence, his analysis of C_1 can be simplified as follows, for the sake of the present discussion. (Note that the internal structure of the DegP is irrelevant here. See den Dikken (2005: 510) for the entire tree diagram.)

¹⁵ See Ishii's (2008) analysis of the typical Japanese comparative correlative.

(33) [_{CP} [_{DegP} the more]_i [_C that] [_{TP} you study *t_i*]]

The obvious difference between our analysis in (31) and den Dikken's in (33) is that the former is DP whereas the latter, CP. Moreover, the crucial difference is that *that* in (31) is what a descriptive grammar calls a relative pronoun in a literal sense, while in (33) it is not clear which is a relative pronoun.

4. EXAMINATION OF THE HYPOTHESIS

4.1. Two Kinds of *the*

Heretofore, we have argued that *the* in C_1 is treated as a garden variety *the*, i.e., the Determiner. The present paper argues that this is appropriate only in C_1 . As we see in (5) and (6), Iwasaki and Radford's (2009) position is that *the* in the English Comparative Correlative is a Degree Operator similar to *so*. The present paper has no objection to this analysis only as far as C_2 is concerned. However, their use of the *all the more*-phrase should be reconsidered when it is to be extended to the analysis of C_1 . The bracketed part in (34) below appears with something which denotes a reason or a conditional.

(34) (a) My cat became all the more tired [as the temperature rose].

(b) The cat's life is all the more difficult [because of the presence of the neighbor's dog].

This means that from this perspective *the* in C_2 of the English Comparative Correlative is perfectly compatible with *the* in the *all the more*, given that a kind of reason or condition is suggested in C_1 .¹⁶ This line of thinking is supported by the following structure.

(35) My cat becomes all *the* more tired [the higher the temperature becomes].

Since the bracketed part in (35) can also appear in the ordinary Comparative Correlative such as below, it is entirely plausible to assume that C_2 's *the* is linked with *the* in (35) and is in nature similar to *the* in *all the more* in such as (34).¹⁷

(36) [The higher the temperature becomes], *the* more tired my cat becomes.

However, Iwasaki and Radford's postulation is not necessarily plausible for C_1 . C_1 's *the* has no given reason or condition. This would mean that we must search for another property of *the* in C_1 . This possibility should not, a priori, rule out that *the* in C_1 is a Determiner, suggesting how much/many of something is given, which produces the meaning of the conditional or the input of the correlation.

The second piece of the counterargument perhaps comes from the claim that *the more...* is one constituent and thus should not be treated separately. In fact, this is the claim made by Borsley in Iwasaki and Radford (2009) against Taylor's (2006) contention that *the* in the English Comparative Correlative is a Complementizer. Particularly, in the following case, where an

¹⁶ Perhaps this is compatible with den Dikken's (2005: 499) observation that C_2 has a correlative particle, although he considers it to be something different from *the*.

¹⁷ Iwasaki and Radford (2009: 11) argue that "*the* functions as a degree operator (linked to its correlative counterpart in the paired clause)" [italic in the original].

attributive adjective is fronted to the position before an indefinite article, it clearly appears that *the more* and the adjective form a constituent. Consider:

(37) [[The more difficult a problem] that you have], the more time you would need to solve it.

The present paper has no opposition to this analysis sketched in Iwasaki and Radford (2009).

However, it may well be possible to hypothesize that there is another *the*, namely a Determiner *the*, in front of this constituent, and it is covert.

(38) The-[the more difficult a problem] that you have, the more time you would need to solve it.

This is far from being beside the mark, given that the successive sequence of the phonetically identical elements in English sometimes results in one of them being deleted. Consider the unacceptability or awkwardness of what follows. Note that the following shows the acceptability, not grammaticality. Syntactically, these are all grammatical.

(39) (a) ??*I think [that [that you did this] is wonderful] (Alrenga 2005) [bracket added]

(b) *The [the man's] problem (meaning "the problem of the man")

(c) *I have had no [[no less unpleasant] an experience] than this.

(meaning "I have not had an experience as unpleasant as this.")

(d) ??/*We talked about [how [how difficult a problem] you have solved]¹⁸

(e) ??/*I didn't know [that [[that good a singer] would we be able to find.]]¹⁹

As these cases exemplify, when phonetically identical items appear in succession, one of them tends to be deleted for phonetic reasons. Of all the cases above, particularly, (39d) and (39e) are perhaps most striking. Consider and compare the following.

(40) (a) We solved that problem.

(b) [How difficult a problem] he has solved!

(41) (a) We talked about [how [we solved that problem]].

(b) ??/*We talked about [how [[how difficult a problem] he has solved]].²⁰

Normally, when CP is embedded as a complement of a preposition such as *about*, then the overt *how* is required: the covert one is disallowed.

(42) (a) We talked about [_{CP} how [we became good friends ten years ago]].

(b) *We talked about [_{CP} \emptyset [we became good friends ten years ago]].

This should naturally apply to the embedded Exclamative (at least at the level of grammaticality).

The contrast between (41a) and (41b) shows that the complement of the verb *solved* is either in situ

18 The ungrammaticality of (i) is due to the property of the embedded Exclamative clause. It must have a *wh* phrase fronted on top of the embedded clause.

(i) *We talked about how he has solved *how* difficult a problem.

19 Compare:

(i) I didn't know we would be able to find [*that good a singer*]. (Baker 1989: 327)
[square bracket and italic in the original]

20 It seems necessary to consider another example of the apparent two *wh* elements.

(i) We talked about [**how** [**which** school you would enter] affects your future career].

Note:

(ii) We talked about [**how** the educational quality of school affects your future career].

(iii) We talked about [**which** school you want to enter].

Both *how* and *which* elements can respectively occupy Spec-CP in (ii) and (iii). Yet (i) is grammatical. Hence, *which school you enter* should be a non-Spec-ForceP position. Similar logic holds in what follows.

(iv) %We talked about [**how** [**how** your school educates you] affects your future career].

(as in (41a)) or fronted (as in (41b)). The crucial point is that *how difficult a problem* is a constituent and this is irrelevant to the type of *how* such as in (42a). Given the acceptability of (41a), in precisely the same way, (41b) should be acceptable, because (40b) is grammatical, as well as (41a). However, (41b) is hardly acceptable whereas (41a) is fully acceptable.

One might say that (43) instead of (42a) is a correct analysis:

(43) We talked about [how [∅ difficult a problem] he has solved].

However, this is not a correct analysis with the second *how* being deleted. Consider:

(44) (a) *We talked about how, in all probability, difficult a problem he has solved.

(b) ?? We talked about how difficult, in all probability, a problem he has solved.

This means that *how difficult* is entirely one constituent, thus suggesting the analysis in (43) is impossible. The marginality of (44b) is from the fact that *how difficult a problem* is one constituent, with *how difficult* embedded. Given the discussion thus far, at least at the level of grammaticality, (37d) is possible. Hence, the apparent unacceptability should be ascribed to other factors outside of a linguistic knowledge of English. The same logic holds about the analysis of the (39e) and thus is not repeated.

Given the discussion so far, we would be able to analyze C₁ of (46):

(46) [_{DP} [_D *The*]] [_{CP} [the more difficult a problem]] [_{CP} [_C that]] [_{TP} you have]]]]

The first *the* is covert for the reason just discussed above, and *the more difficult a problem* whose *the* functions as a Degree Operator in a similar way to *so* and *how*, is a nominal, perhaps a DP. This nominal phrase is an antecedent, which is followed by the relative clause *that you have*. An explicit example of a double *the* of this kind would be as follows.

(47) %The more of the less diligent students the teachers had to teach, the harder time they would spend.²¹

This is acceptable for native speakers who allow the overt *of* shown in (8). It should be noted, however, that a *more/less* which functions as a quantifier must precede a *more/less* which functions as a degree adverb. For instance, the reversed syntactic order results in ungrammatical construction:

(47) *The less diligent of the more students the teachers have to teach, the harder time they would spend.

The present paper heavily owes the analysis which distinguishes the quantifier *more* and the degree adverb *more* to Tani's (2001) detailed analysis.

4.2. Adverbial Property of the Antecedent

Another piece of potential criticism would be to question why adjectives and adverbs can become antecedents. This can be answered by raising some cases of this nature.²²

(48) (a) This course is substantially the *same* [that you took last year].

²¹ See Tani (2001: 254) for the syntactic positions of the two types of the *more*.

²² Iwasaki (2010b) argues that the Japanese Comparative Correlative has a DP which comprises a postcedent and a relative clause and functions as Bare-NP adverb in the sense of Larson (1985).

(b) The *most* [that he can do] is simply complain.

(c) *Where* [that isn't too expensive] can we vacation?

(48c): Larson (1985: 611) [bracket in original]

The above (48a) is an example of the adjective being an antecedent and (48b-d) an adverb, and both of them are followed by the relative clauses bracketed.

A further counterargument would be that some native speakers disallow *which* in C₁ of the English Comparative Correlative.

(49) The more books (%which) you read, the more you understand.

However, the disfavor of this type of *which* as the relative is also the same as *the same that...* Consider:

(50) This is the same book (%which) you read last year.

5. CONCLUDING REMARKS

The present paper argued that C₁ is a relative clause whose antecedent is the *the more* phrase and that the entire clause is in fact a DP. Regarding C₂, we maintained Iwasaki and Radford's argument that the *the more* phrase moves to Spec-FocP. To sum up the analysis, we can gain the following syntactic analysis:

(51) [_{DP} [_D The] [_{CP} [more chocolate] [_{CP} [_C (that)] [_{TP} you eat]]]], [_{FocP} [the quicker]_i [_{Foc} \emptyset] [_{TP} you put on weight t_i]].

Notice, however, that the discussion on the structural dependency between C₁ and C₂ is beyond the scope of the present paper.

The conclusion here seems to be compatible with den Dikken's (2005) argument that C₁ is a relative clause. However, the analysis of C₁ in the present paper is distinct from den Dikken's in that the present paper treats the whole C₁ as a DP, not a CP.

The syntactic analysis as in (51) explains various syntactic problems that no other preceding research adequately does, in so far as the author of the present article is aware: particularly, preposition pied-piping and the Doubly Filled Comp Filter. Given that these are particularly highlighted by Abeillé and Borsley (2008) as challenges to the current linguistic framework (Principles and Parameters Approach), the major contribution of the present paper to the debate in regard to the English Comparative Correlative is to give a solution to these syntactic phenomena, thus enhancing the descriptive (and explanatory) capacity of the linguistic framework.

(Lecturer, Takasaki City University of Economics)

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