

The Necessity of Comparative Ellipsis—Refuting Lechner’s Claim “Comparative Ellipsis Can Be Dispensed with”

Xiaowen Zhang

Faculty of Foreign Languages, Huaiyin Institute of Technology, Huaian, China

Abstract—The main aim of this paper is to examine Lechner’s (2001)^[1] proposal—his CR Hypothesis (Conjunction Reduction (hereafter CR)—that Comparative Ellipsis (hereafter CE) can be dispensed with and reductions of comparative clauses can be entirely explained by operations independently needed for reducing coordinate structures. I argue against this hypothesis and claim that Comparative Ellipsis is necessary. I discuss two special phenomena which can only be analyzed by Comparative Ellipsis, that is, the deletion of the whole complement clause in the *than*-clause which includes the compared phrase, and the phenomenon of the deletion of the whole *than*-clause except for a part of the subject.

Index Terms—CR-hypothesis, Comparative Ellipsis, stripping

I. TYPES OF COMPARATIVE ELLIPSIS

In this part, I review the basic properties of CE. In section (1), I focus on the definitive properties of CE. In section (2), a special kind of reduced comparative clauses is explained, which will later serve to support the view that CE is necessary. In section (3), I discuss the Identity Condition on CE.

A. The Definition and Properties of Comparative Ellipsis

There are three major types of comparative reductions in English comparatives, that is, CE, VP-deletion and Pseudo-gapping, among which I will pay attention mostly to CE here, since it is related to the theme of this paper. Pinkham (1982, p.92ff)^[2] defines Comparative Ellipsis as an optional deletion rule that elides the verb and all other recoverable constituents inside the *than*-clause.

- (1) John wrote more letters to Mary
a. than he wrote to Jane.
b. than _ to Jane.

The operation of changing (1a) to (1b) is called Comparative Ellipsis. More examples follow:

- (2) a. It is better to say too little than (to) say too much.
----Thomson and Martinet 1980, p311^[3]
b. Optically such eyes work just as well out of water as _ in it.
c. Far more effort is required to epitomize facts with clarity than _ to express them cloudily.
d. Mary writes postcards to her sister more often than _ letters_.
----Pinkham 1982, p99^[2]

The basic properties of Comparative Ellipsis are as follows:

A. CE must delete the verb of the *than*-clause. When the verb of the main clause is different from the verb of *than*-clause, CE cannot apply, as shown in (3):

- (3) a. Mary can swim better than she can float.
b. Mary can swim better than * _ float.
---- Pinkham 1982, p99^[2]

The underlying form of this sentence is “Mary can swim better than she can float [x well].”

B. CE cannot elide the verb which is flanked by contrastive elements.

- (4) a. Harry buys books more often than Joe buys records
Joe does _ records. (Pseudo-gapping)
* Joe _ records.

---- Pinkham 1982, p100^[2]

- b. Otto let his fingernails grow longer than Dorothy did _ her toenails _.
*Dorothy _ her toenails __.

-----Levin 1979, p.100^[4]

In other words, Gapping is not possible in a *than*-clause. However, some scholars seem to accept such sentences (cf.

Jackendoff (1971, p.22^[5]), Doherty and Schwartz (1967, p.921^[6]). Therefore, there seems to be an idiolectal difference here.

C. CE applies only “rightward,” that is, the elements of the main clause which correspond to the deleted part of the *than*-clause must be to the left of the *than*-clause.

- (5) a. * More dresses [than _ by that company] were sold by us.
 b. More dresses were sold by us [than (were sold) by that company].

---- Pinkham 1982, p.108^[2]

Notice that Gapping in English obeys the same directionality condition. (*John _ apples, and Mary ate oranges). (Hankamer 1971^[7])

B. The Deletion of the Whole Complement Clause Including the Compared Elements

When the compared phrase is deleted by CD, the deleted phrase is not allowed to be in the subject of the *than*-clause, like in (6b):

- (6) a. The issues are more complex than people generally believe [they are _].
 b. * The issues are more complex than [that they are _] is generally believed.
 c. The issues are more complex than it is generally believed [that they are _].

(6b) is ungrammatical, probably due to the Subject Condition (e.g. *What did [stories about_] surprise John?). So this phenomenon is not restricted to comparatives.

When the whole embedded clause including the compared phrase is identical to the content of the main clause, the whole embedded clause can be deleted by CE, as in (7a, b). However, when the subject of the embedded clause is the expletive *it*, if the embedded clause is deleted *it* must also be deleted, as in (7b).

- (7) The issues are more complex
 a. than people generally believe.
 b. than is generally believed.
 c. *than it is generally believed.

(8) illustrates the same point:

- (8) ... the giant ant-eater is less harmless than might at first appear.

The *than*-clause of (8) derives from “than it might at first appear [that it is [x harmless]]”. I will return to sentences of this type later, as evidence for the necessity of CE.

C. The Identity Condition on CE

Because of the general Identity Condition on deletion, when CE applies, the deleted part must be “identical” to the corresponding part of the main clause. The “identity” here is a technical notion and is not the same as literal identity.

Thus, in (9), the difference between the present tense and the past tense doesn't impede CE.

- (9) ... writers in general *can* make a living much more easily than _ when I first started in the 1930's, ...
 [_ =they *could* make a living]

Similarly, the difference between the past tense and the past perfect tense does not matter for CE, as in (10):

If anything, the squabbling between Maurice and Rosy *was* more bitter than _ before the visit to Cambridge. [_ =it *had been*]

Moreover, it is possible to combine *will/would* and *shall/should* with the simple tense. For instance:

- (10) a. You'll enjoy it more than (you *did*) last year.
 b. His speech *was* more interesting than I expected (it *would be*).

-----Quirk *et al* 1972, pp. 771-772.^[8]

However, sometimes the difference of the tense can affect CE. According to Pinkham (1982, p.129^[2]), (12a) can be interpreted as (12b) and (12c) but not (12d).

- (11) a. Elizabeth will be taller than Adam.
 b. ... than Adam will be.
 c. ... than Adam is.
 d. *...than Adam was.

Although the combination of tenses in (12a) is the same as that in (11a), which combines *will* with the simple past tense, (12a) cannot be interpreted as (12d). It seems that the difference of tenses can be ignored, only when the original tense of the *than*-clause can be recovered from the remnant. In (11), the past tense can be recovered through “last year”, but we can't recover the past tense through *Adam* in (12a). If this is correct, then the reason that (12a) can be interpreted as (12c) should not be due to CE: (12a) interpreted as (12c) should be generated as a phrasal comparative.

The existence/ nonexistence of the complementizer *for/to* can also be ignored, as in (13) and (14):

- (12) He stood up and *walked* as far around the desk as the telephone cord allowed.

(13) And by removing some of the shading leaves and bringing the bunches into the open, I think I will be able to make *them mature* earlier than is usual.

The deep structures of the above examples are: [as the telephone cord allowed [*him to walk* [x far] around the desk] and [than it is usual [*for them to mature* [x early]]], respectively.

In summary, this section has reviewed the basic properties of CE. Some of the sentence patterns reviewed are

particularly relevant to the theme of this paper, for example, *than*-clauses in which just two remnants occur, and ones in which a whole embedded clause has been deleted together with the expletive *it*. I will return to them below.

II. THE NECESSITY OF COMPARATIVE ELLIPSIS

It appears that most linguists agree with the view that CE is necessary. But Lechner (2001) [1] proposes a new view that CE can be dispensed with, and he presents evidence to prove that *than*-XP clauses can be treated in the same way as *and*-clauses. Contrary to Lechner's opinion, however, in what follows, I will try to prove that CE is necessary. In section 2.1, I will take up special kinds of sentence pattern in *than*-clauses to prove the necessity of CE and show that these kinds of sentential form can only be explained by CE, not CR. And then in section 2.2, I will analyze a phenomenon, i.e. the deletion of all material from a *than*-clause except for a phrase in the subject. The coordinate construction corresponding to this special type of comparative will be Stripping. So I will examine whether Stripping sentences can be formed in the same way as in the *than*-clause in question. In both cases I will support my claims with many examples I have found on BNC or Google.

A. 'Than I Thought/Expected' Clause and 'Than Is Generally Believed' Clause

Lechner(2001)^[1] claims that CE can be dispensed with, namely, reductions in comparative clauses can be explained by rules applying to coordinate structures. Hence, this view will be seriously challenged if there are reduced comparative clauses that do not have counterparts in *and*-sentences. I will argue here that there indeed are such comparative clauses, namely, the types exemplified by '*than I thought*' and '*than is generally believe*'. I will argue that these special comparative clauses can only be explained as CE, not CR.

According to section 1.2, such comparative clauses as '*than I thought/expected*' or '*than is generally believed/imagined*', like (6) and (7) from part I, repeated here in (15), are special cases of CE:

- (15) a. The issues are more complex than people generally believed [they are x complex].
 → The issues are more complex than people generally believed _.
 b. The issues are more complex than [it] is generally believed [that they are x complex].
 → The issues are more complex than _ is generally believed _.

In (a), because the content of the compared material in the embedded clause is identical to the content of the matrix clause, the whole embedded clause can be deleted. This way of deletion is the same as that of CE (all recoverable elements should be deleted if CE applies), so we can consider the reduction of this special comparative as an instance of CE. In contrast with (a), in (b), all recoverable elements are deleted, which is according with the definition of CE. But the expletive *it* is necessary in subject position at some stage in the derivation, since according to grammatical principles, the deletion of the compared material by CD cannot be done within the subject of *than*-XP clause, like in (16):

- (16) * The issues are more complex than [that they are _] is generally believed.

If the formal subject *it* is not deleted, example (b) will be ill-formed.

- (17) *The issues are more complex than **it** is generally believed_.

Some more examples from BNC follow:

- (18) It is a lot more complicated **than I thought** _ . (_ = it was x complicated)

He was even richer **than I thought** _ . (_ = he was x rich)

He's much taller **than I expected** _ . (_ = he was x tall)

I finished my business sooner **than I expected** _ . (_ = I finished my business x soon)

According to Lechner's CR-Hypothesis, such reduced comparatives should have corresponding *and*-clauses. Thus, such sentences like 'It is very complicated and I thought.' should be well-formed. In fact, however, when I searched for "...and I thought/expected" on BNC, I could not find any hits satisfying the requirement, that is, there were no sentences in which the string '*...and I thought/expected*' comes at the end of the sentence. So we can say that such sentences like (18) are only explained by CE, not CR.

Although I have not been able to find sentences ending with '*... and I thought/expected*.' , sentences ending with '*...and I thought/expected so*' are easy to find. Some examples I found on Google Books follow:

- (19) a. She thinks it is improper, **and I think so** too.

b. I got the last number, and I showed it to my grandmother, and she said that it would teach me more than going to school, **and I think so** too.

c. It was believed that he would supply goods to that amount, and I expected so too.

d. As a young mother I felt my daughter was brilliant, gifted, and exceptional, **and I expected so** much.

When I searched for '*...than I thought/expected so*' on BNC and Google Books, there were no matches for these queries. It further illustrates the point that the sentential form '*...than I thought/expected*' can only explained by CE, not CR, which falsifies Lechner's CR-Hypothesis.

The other type of embedded clause we consider here is the sentence pattern "...*than is generally believed/imagined*", as in (20) or "...*than I thought likely/...than you would imagine _ to be possible/...than seems likely*", as in (21). The common feature of this type of embedded clause is that at some underlying level such comparatives must use the formal subject *it* in the *than*-clause.

(20) a. There are other features that may have much earlier origins **than is generally believed**. (BNC)

b. There is in the world more poverty than **is generally imagined**. (BNC)

The underlying form (at some stage of the derivation) of (20a) is ‘There are other features that may have much earlier origins **than [it] is generally believed [that they have x early origins]**. The underlying form of (20b) is ‘There is in the world more poverty than [it] is generally imagined [that there is in the world [x much] poverty]’.

(21) a. And the physics major has helped me more **than I thought likely**.

b. Dates often assume more importance **than you would imagine to be possible**.

c. Unless wages rise more slowly or output picks up faster **than seems likely**, Germany faces higher inflation and a growing deficit in foreign trade.

The underlying form of (a) is ‘And the physics major has helped me more than I thought [it] likely [that it would help me [x much]].’ The underlying form of (b) is ‘Dates often assume more importance than you would imagine [it] to be possible [for them to assume [x much] importance]. The underlying form of (c) is ‘Unless wages rise more slowly or output picks up faster than [it] seems likely [that wages will rise [x slowly] or output picks up [x fast]], Germany faces higher inflation and a growing deficit in foreign trade.’

To prove that the above examples can only be explained by CE, we should demonstrate that such special comparatives can not be treated as kinds of *and*-clauses. When I searched for the sentence pattern “...and is generally believed/ imagined” on BNC, there were no hits for my queries. Also, when I searched for “...and I thought likely”, “...and you would imagine to be possible” and “...and seems likely” on BNC, there were no hits of sentences ending with “...and I thought likely”, “...and you would imagine to be possible” and “...and seems likely”. So, it is obvious that these special types of comparatives cannot be considered as belonging to coordinate structures and that they can only be explained by CE.

In summary, the way of reduction in the special comparatives, like “...than I thought/expected” or “...than is generally believed/imagined” agrees with the definition of CE, so we can consider such sentences as special cases of CE. According to Lechner’s CR-Hypothesis, it should be possible that such special comparatives can be treated as a kind of *and*-clause, but the above examples present sufficient evidence to support the view that such special comparatives can only be explained by CE, not CR. So, as it stands, Lechner’s CR-Hypothesis is not tenable.

B. The Deletion of a Part of the Subject in Than-Clause

This section takes up a special kind of comparative clause: a comparative clause in which all the material in the *than*-clause has been deleted except for a part of the subject. I will argue that such comparative clauses are well-formed. And then I will consider whether such comparative clauses can only be explained in terms of CE or not.

Consider the comparative sentences in (22):

(22) a. Books on linguistics are more expensive than books on mathematics are _.

→Books on linguistics are more expensive than books on mathematics_.

→Books on linguistics are more expensive than _ on mathematics_.

b. Working together is more efficient than working alone is _.

→ Working together is more efficient than working alone_.

→ Working together is more efficient than _ alone_.

We notice that in the last examples of (22a) and (22b) only a part of the subject in the *than*-clause is left. On the basis of the definition of CE, that is, CE is an optional operation that deletes all recoverable constituents from the comparative clause; we can say that the reduction of the *than*-clause down to a part of the subject is an instance of CE. However, because this kind of reduction is very rare, one might doubt the grammaticality of the above examples. So more examples, found by searching on Google, are given below:

(23) a. Reading books on an electronic paper display is more comfortable than reading books on active matrix display is_.

→Reading books on an electronic paper display is more comfortable than reading books on active matrix display_.

→Reading books on an electronic paper display is more comfortable than _ on active matrix display_.

b. Sufficient evidence is also available to contradict the cultural belief that the appearance of female is more important than the appearance of males is _.

→Sufficient evidence is also available to contradict the cultural belief that the appearance of female is more important than the appearance of males _.

→Sufficient evidence is also available to contradict the cultural belief that the appearance of female is more important than _of males _.

c. Travelling in a group is more fun than travelling alone is _.

→ Travelling in a group is more fun than travelling alone_.

→ Travelling in a group is more fun than _alone_.

d. Six-minute walk distance is greater when performed in a group than when performed alone is _.

→Six-minute walk distance is greater when performed in a group than when performed alone_.

→Six-minute walk distance is greater when performed in a group than _ alone_.

Moreover, in order to confirm the well-formedness of such comparative clauses, I asked a native speaker of English,

my New Zealand friend, for help. He judged that these special comparatives in (22) are acceptable.

If we analyze the last examples of (22a, 22b) from the perspective of Conjunction Reduction, we can say that the corresponding reduction process in coordinate structures is Stripping. The crucial question is whether Stripping should be permitted to generate such reduced *and*-clauses as (24a, b):

- (24) a. ?Books on Linguistics are expensive, and _ on mathematics _too.
 b. ?Working together is efficient ,and_ alone _too.

Hankamer and Sag (1976)^[7] define Stripping as ‘a rule that deletes everything in a clause under identity with corresponding parts of the preceding clause, except for one constituent, (and sometimes a clause-initial adverb or negative). Some examples of Stripping are given in (25):

- (25) a. Jane gave presents to John, but not _ to Geoff.
 b. John ate an apple, and also _ an orange.
 c. Jane loves to study rocks, and _ geography too.
 d. Jane loves to study rocks, and John _ too.
 e. John studied rocks but not Jane _.
 f. Flowers grow well here and sometimes herbs _.

---Anne, Lobeck (1995)^[9]

We see in (25a-c), that the gap is not clause-final. In examples (25d-f), however, the gap is clause-final, suggesting that Stripping can apply either leftward or rightward.

Also, it is important to note that Stripping fails in complex NPs, which suggests that unlike rules like VP-Ellipsis, Stripping obeys the Complex NP Constraint:

- (26) Jane knows lots of people who play the piano,
 a. but not very well.
 b. *but I know a man who not very well.
 (27) This is the place where we grow flowers,
 a. and sometimes herbs.
 b. *and that is the place where sometimes herbs.

According to the definition of Stripping, example (24a-b), where there is only one constituent left in the *and*-clauses, should be well-formed. Example (24a, b) are repeated here in (28):

- (28) a. *Books on linguistics are expensive, and _ on mathematics _ too.
 b. *Working together is efficient, and_ alone _ too.

I asked some native English speakers whether these sentences were well-formed or not, their answer was that they were ill-formed. Considering that Stripping obeys the Complex NP Constraint, this is natural. We can assume that Stripping obeys island constraints in general and that it violates the Subject Condition in (24a, b).

Ogata (forthcoming)^[10], however, reports that such Stripping clauses as in (29) are accepted by a native speaker of English

- (29) a. People in Sapporo are happy, and _in Nagoya _ too.
 b.*People in Sapporo are happy, and _ Nagoya_ too.
 c. People in Sapporo are happy, but not _ in Nagoya_.
 d. *People in Sapporo are happy, but not _ Nagoya_.

Comparing (24a) with (29a,c), we can see that they have basically the same structures. But (24a) is ill-formed whereas (29a) is well-formed. Why? In my own opinion, maybe there are two reasons causing this apparent conflict. On the one hand, the *on*-PPs in (24a) function as the complements of NP and are not adjuncts.

Furthermore, the *in*-PPs in (29a) are locative adjuncts. In (29a), the underlying form is “People in Sapporo are happy, and (people) in Nagoya (are happy), too.” We notice that this sentence is virtually the same in meaning with “People are happy in Sapporo, and (people) (are happy) in Nagoya, too.” So it is conceivable that a speaker may sometimes unconsciously convert the former structure, to which Stripping cannot apply presumably because of the Subject Condition, into the latter and accordingly judge sentences like (29a) as acceptable. I therefore tentatively conclude that examples (24a, b) are ungrammatical and that we should put aside examples (29a,c) when we consider how Stripping works. We take the ungrammaticality of examples (24a, b) as evidence that Stripping cannot apply in such a way as to leave just a part of the subject behind.

In summary, there are comparative sentences which, if Lechner’s CR-Hypothesis is correct, Stripping should be able to generate, namely, sentences in which only a part of the subject of the *than*-clause appears on the surface. However, Stripping cannot produce corresponding *and*-clauses. If so, the phenomenon of the wholesale deletion in a *than*-clause except for a part of the subject can only be explained by CE, which means that CE is necessary. Lechner’s view that CE can be dispensed with is seriously challenged here.

There is, however, one important theoretical question left unsolved.

As Merchant (2006)^[11] notes, “the remnant in a reduced clausal or phrasal comparative uniformly shows island sensitivity in English comparatives, as noted by Reinhart (1991) and Lechner (2001; 2004)^[1].”

- (30) a. *More people live in the country that Putin governs than Bush.
 (≠ than live in the country that Bush governs)

- b. *Nikos saw more movies when Nana recommended them to him than Elena. (\neq than Nikos saw when Elena recommended them to him)
- c. *That the dean is going to invite the cleaning lady is more noteworthy than Maria. (\neq than that the dean is going to invite Maria)
- d. *More people know someone who lives in Russia than in Tibet.
(\neq than know someone who lives in Tibet)
---Merchant Jason (2009)^[10]

This fact is usually taken as supportive evidence for the movement analysis of comparative clause reduction; for example, Hankamer(1973)^[7] and Kennedy(1999; 2002)^[12] posit that reduced clausal comparatives involve movement of a phrase to a clause-external position followed by clausal ellipsis, as in (31):

(31) More people live in Russia than [[PP in the US]_i ([live *t*]])).

According to the movement analysis, we can explain all examples in (30) as straightforward cases of island condition violations.

For now, let us continue to use the term “Comparative Ellipsis” irrespective of whether it involves movement or not. Of all the examples in (30), particularly disturbing for our analysis is (30c), which seems to show that CE obeys the Subject Condition. Example (32) may be taken another case illustrating the Subject Condition, but because it also involves a complex NP, it is difficult to tell whether the Subject Condition is really relevant here.

(30c) *That the dean is going to invite the cleaning lady is more noteworthy than Maria. (\neq than that the dean is going to invite Maria)

(32) *People who drink coffee everyday live longer than tea.

(33) a. Books on Semantics are more expensive than on Phonology.

b. Working together is more efficient than alone.

Now, the question we face is why (33a,b) are acceptable while (30c) and (32) are unacceptable. If CE is subject to the island conditions, in particular the Subject Condition, then (33a,b) should be ruled out just like (30c) and (32). Unfortunately, at present, I have no explanation for this disparity. Maybe, different reduction rules are involved here--one using movement of the remnant and another just using deletion. Maybe, the differences in the categories of the remnants play a role. I am not ready to offer answers to such questions and I leave the matter for future study.

Finally, it should be emphasized that though the theoretical questions discussed above remain open, the claim made above that Lechner’s CR Hypothesis is contradicted by linguistic facts remains valid. The native speakers of English I asked all found the examples in (34) unacceptable while accepting (33a,b).

(34) a. *People who drink coffee everyday are healthy, and tea, too.

b. * Books on Semantics are very expensive and on Phonology, too.

c. * Working together is efficient, and alone, too.

So although we don’t know how to characterize it, the reduction process operative in (33a, b) is peculiar to comparative clauses and the CR Hypothesis as it stands is not tenable.

III. CONCLUSION

Lechner’s CR Hypothesis claims that CE can be dispensed with in favor of Coordinate Structure Reduction, i.e. the operations independently needed for reducing coordinate structures. I arrived at the conclusion that the CR Hypothesis is not tenable and that CE is necessary to account for reduced comparative sentences. To prove that CE is necessary, I presented two pieces of evidence, that is, the deletion of the whole complement clause in the *than*-clause which includes the compared phrase; and the phenomenon of the deletion of the whole *than*-clause except for a part of the subject.

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Xiaowen Zhang was born in Huaian, China, in 1984, who is one of teachers of Faculty of Foreign Languages of Huaiyin Institute of Technology, Jiangsu, China. She majors in English Linguistics and American Literature Study.