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### SAME PROBLEM, DIFFERENT SOLUTION

### **1.** INTRODUCTION

Though treatment of individual lexical items (words or morphemes) is generally considered to belong to the domain of lexical semantics, there are quite a few words that have always interested model-theoretic semanticists. In this paper I would like to propose a treatment of one such word, the adjective *same*, as a completely functional item with the semantics of the IDENT type-shifting operator (Bach and Partee 1980, Partee and Bach 1984, Partee 1986).

It has been known since at least Dowty 1985 that *same* must be licensed either by an argument (to which the comparison is effected) or by some sort of distribution. Thus Carlson 1987 and Moltmann 1992 distinguish between the external *same*, which requires a proper contextual antecedent or a comparison clause (*same... as*), and the internal *same*, which is dependent on a plural or a universal.<sup>1</sup> In the absence of all of the above *same* is infelicitous:

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<sup>&</sup>lt;sup>1</sup> For the "external" *same* Carlson and Moltmann use the term "deictic", which has proved to be somewhat confusing given the fact that *same* can be used without linguistic antecedent while pointing at the relevant object.

| (1) | a. | Abby bought the same book as Beth.                 | external |
|-----|----|--|----------|
|     | b. | Abby bought Neverwhere. Beth bought the same book. |          |
| (2) | a. | Abby and Beth bought the same book.                | internal |
|     | b. | Every girl bought the same book.                   |          |

(3) [All of us went to the store.] #Abby bought the same book.

Although some analyses (e.g., Beck 2000, Barker 2007) opt for some lexical ambiguity in their treatment of *same* and *different*, I propose that only one lexical item is necessary to deal with both uses, albeit with different syntax. As will be shown in section 2, in its external use, *same* (IDENT) takes as its first argument the standard of comparison, which may be a free variable or a comparison clause. The resulting AP then combines with a noun phrase:



In section 3 this straightforward analysis will be extended to the internal *same* under the assumption that in its internal use *same* (IDENT) adjoins to an existentially quantified NP, which then functions as its internal argument. In particular, I will argue for the syntactic tree in (5) as an accurate representation of configurations where *same* is licensed by a universal; the introduction of the independently motivated distributive operator extends this analysis to plurals.



I will argue that independently motivated constraints prevent the internal *same* from taking scope *in situ* and impose the presence of a plural or universal licenser (section 3.2). In section 4 I will provide some additional evidence for my analysis from island-sensitivity of the internal *same*. Since my treatment yields the same truth conditions as Barker's (2006) proposal, I will compare the two in section 5. Finally, in section 6 I will demonstrate that the analysis proposed can be extended to *different* under the standard assumption that *same* and *different* are antonyms of each other, taking into consideration the lexicalization patterns of *different* in German (Beck 2000). Section 7 is the conclusion.

# 2. THE EXTERNAL SAME AND THE FUNCTION OF IDENT

Under the hypothesis that *same* has the same meaning as IDENT, it should take an internal argument. Hypothesizing that, like most adjectives, it does not assign case to its complement correctly predicts that it is unable to take an NP argument, unless it is a free variable denoting a contextually provided antecedent:



The DP in (6) corresponds to the discourse-anaphoric use of *same*, as in (7):

### (7) Alice bought "Neverwhere". Beth bought the same book.

The merger of IDENT with a contextually provided antecedent yields an  $\langle e, t \rangle$  predicate, combining with the NP via the Predicate Modification rule (Heim and Kratzer 1998). Since this resulting AP induces the uniqueness/maximality presupposition in virtue of its semantics, a definite determiner becomes obligatory. Furthermore, the analysis in (6) straightforwardly extends to the so-called (Dowty 1985) "non-anaphoric" use of *same*, where it appears with a comparison clause:



Since CPs don't need case, a CP argument of the right semantic type (*e*) would easily saturate its internal argument slot. Maintaining the well-known similarity between *same* and equatives (Heim 1985), I propose the following syntactic structure for the comparative *as*-clause:



Overt movement of the null operator introduced as the internal argument of *same* in the comparative clause creates the singleton set of all entities identical to the books that Jennifer read, which is then turned into an entity by the maximality operator (see Matushansky 2011 for its justification as yet another point of similarity with *as*-clauses introduced by equatives and for a discussion of *that*-clauses with *same*). In addition, the configuration proposed in (9) predicts that the gap in the comparison clause should not appear inside an island (cf. Beck 2000). Verifying this prediction is, however, far from obvious, since comparative *as*-clauses associated with *same* require either gapping or VP-ellipsis (Matushansky 2011):



Creating an island configuration in the comparative clause is only possible by creating it in the antecedent of the elided VP, as in (11a). The problem is that the main clause also involves movement -- the obligatory extraposition of the CP argument of *same* in (8), triggered by the Head-Final Filter. As a result, if in (11a) the CP in question extraposes into the main clause, this movement violates the Complex NP Constraint (as well as the Right Roof Constraint, see Ross 1967), and if it stays inside the relative clause, the resulting VP does not create a proper configuration in a restored VP in the comparative clause (11b), since it doesn't contain a trace in the right place. In other words, the ungrammaticality of (11a) cannot be unambiguously traced down to the operator movement in the comparative clause.

(11) a. \*Abby organized a party that took place on the same day as Beth did.

# b. as Beth did organize [a party [that took place on OP day]]

In addition, null operator movement in the comparison clause clearly violates the Left Branch Condition (Ross 1967, Borsley 1983, Corver 1990), which yields another point of similarity between *same* and equatives: the usually assumed movement of the null degree operator out of the comparative clause of an attributive comparative also violates the Left Branch Condition (Bresnan 1975, Pinkham 1982, Kennedy and Merchant 2000).<sup>2</sup> To explain why attributive comparatives and equatives are nevertheless possible, Kennedy and Merchant 2000 appeal to the hypothesis advanced by Lasnik 1995: a PF-violation can be salvaged if the offending structure is not pronounced. Kennedy and Merchant 2000 propose that movement out of the left branch causes a PF violation and that in order to repair it the VP needs to be

<sup>&</sup>lt;sup>2</sup> In our analysis of *same*, as in all standard analyses of comparatives, the extraposition of the comparative CP violates the Left Branch Condition in the main clause as well, which, however, does not seem to lead to any ungrammaticality by itself. I'm not aware of any account of these facts.

deleted. As a result they correctly predict that in attributive comparatives and equatives VPellipsis in the comparative clause is obligatory (Pinkham 1982):

(12) a. Pico wrote a more interesting novel than Brio \*wrote/\*read/did/Ø a \_\_ play.

b. Erik bought a more expensive car than Polly \*bought/\*sold/did/Ø a \_\_\_\_ motorbike.

Extending this analysis to *same* explains the obligatory VP-ellipsis in the comparison clause in (10), and correctly predicts (see Matushansky 2011 for details) that in *that*-clauses associated with *same* VP-ellipsis is not required: if *that*-clauses are ordinary relative clauses created as a result of pied-piping the DP containing the null wh-operator, the Left Branch Condition is not violated.

Assuming that island-sensitivity of the external *same* is due to the movement of the null operator predicts that in the absence of a standard of comparison, the external *same* may appear inside islands:

(13) For a man with a BMI of 25 to 29.9, a waist size of 38 inches signifies "increased" risk of the disease. But if [the same man's waist] is 40 inches, he moves into the "high" risk group.

Conversely, adding a comparison clause to (13) leads to ungrammaticality: whereas (14a-c) violate the Head-Final Filter, (14d) violates the Specificity Constraint (Fiengo and Higginbotham 1981), since the *as*-clause must be extracted out of the referential DP that it is contained in (*the same man's waist*).

- (14) a. \*the same as George('s) man's waist
  - b. \*the same man's as George('s) waist
  - c. \*the same man as George('s)'s waist
  - d. \*the same man's waist as George('s)

The sensitivity of the external *same* to islands further confirms the movement analysis detailed above, though I will provide some additional complicating data in section 6.

### **3.** THE INTERNAL SAME

As discussed above, in addition to the configurations where *same* takes an internal argument, be it explicit or implicit, *same* can also be licensed by a plural or a universal. An immediate question that arises from this distinction is the connection between the two types of *same*, and Barker 2007 (see section 5 for discussion) suggests that these different licensing conditions reflect the lexical ambiguity of *same* (or *different*). Strong evidence in favor of an ambiguity approach comes from Beck 2000, observing that some readings of *different* (those licensed by a contextual antecedent or by a universal) are translated as *ander* in German and others (those licensed by a plural or inside a plural NP) as *verschieden* (see section 6.2). The problem is that the lexical split in German cuts across the internal/external uses of *different* in English.

Conversely, the fact that in many languages one lexical item appears in all the four uses of *different* strongly suggests that lexical ambiguity is undesirable. This is why it is a far more popular view (Dowty 1985, Heim 1985, Carlson 1987, Moltmann 1992, Alrenga 2006, Brasoveanu 2008, to appear) that there is only one *same* (or *different*), which can appear in these four different environments. In this section I provide support for this view by showing that the semantics of *same* that I have proposed above can be straightforwardly extended to its internal use. I will furthermore account for the fact that *same* is often lexically related to certain functional items, such as emphatic morphemes or anaphoric expressions (Safir 1996).

### 3.1. The existential analysis of the internal same

In his treatment of the internal *same* Barker 2007 proposes that (15a) should yield the same truth-conditions as (15b). Concurring with this intuition I hypothesize that in its internal use *same* (IDENT) combines with an existentially quantified noun phrase,<sup>3</sup> as indicated in the tree in (16). This view explains the obligatory presence of the definite article with the internal *same* (since IDENT, like ordinals or superlatives, has the presupposition of uniqueness).

(15) a. Xander always watches the same movie.

### b. There exists a movie such that Xander always watches it.

The merger of IDENT [4] with an existential [1] causes a type clash, which is rectified by QR [2]: the existentially quantified noun phrase must raise to a position above the subject (which, in the tree below, also places it above the licenser [3]):

<sup>&</sup>lt;sup>3</sup> As is well-known, existential quantification followed by QR is not the only means of obtaining an existential with a wide scope. An alternative advanced in Matushansky 2011 is that the existential quantification inside the DP containing *same* is achieved by an existentially closed choice function. However, as shown in section 4, the internal *same* is island-sensitive in ways not predicted by the choice function treatment.



As a result, we correctly obtain the following truth-conditions for (16):

# (17) $\exists x [[movie]] (x) \forall t \in D_t [Xander watches [[the]] (IDENT (x) at t])$

The only addition that is required in order to deal with *same* licensed by plurals is the distributive operator [5] for the argument position saturated by the plural licenser.<sup>4</sup>

<sup>&</sup>lt;sup>4</sup> In the tree in (18) the distributive operator is introduced as a sister of the DP it distributes over rather than as a sister of the predicate, since distribution can occur also inside DPs (see Gillon 1984, 1987). Importantly, though covers have been proposed as the different means to obtain distribution (see Schwarzschild 1994, 1996), I do not believe that they can be used with *same* to the same effect (see also Beck 2000).



As a result, the structure in (18) translates into the following LF:

# (19) $\exists x [book] (x) \land \forall y \leq Abby \oplus Beth [y bought [the]] (IDENT (x)]$

A distributive operator (or some equivalent thereof) is assumed to be present in all cases where a plurality is not interpreted collectively, and therefore does not need to be motivated. I assume that the same mechanism is used for pluralities that do not correspond to entities, which nonetheless also license *same* (see Carlson 1987, Moltmann 1992, Oehrle 1996, and Tovena and Van Peteghem 2002a, 2002b):

| (20) | a.  | John saw and reviewed the same film.                                   | V-conjunction       |
|------|-----|--|---------------------|
|      | b.  | Max put the same plates on the table and in the cupboard.              | PP-conjunction      |
|      | c.  | John read the same book yesterday and today.                           | Adv-conjunction     |
|      | c.  | The same person discovered America and invented bifocals.              | VP-conjunction      |
|      | d.  | John maligned, and Mary praised, the same recording artists.           | RNR                 |
|      | Imp | ortantly, to prevent distributive readings of singulars elsewhere, the | he freely available |

distributive operator must have a plurality presupposition, which also account for the fact that under certain conditions collective nouns can also license *same* and *different* (Laca and Tasmowski 2001), as well as trigger plural marking on the verb (Sauerland and Elbourne 2002).

It is easy to see that the analysis proposed above overgenerates. It is well-known that the internal *same* has to be licensed, but nothing in the semantics of IDENT or its combination with an existentially quantified NP requires it to appear in the scope of a universal. In the next section I will argue that the internal *same* must appear in the scope of a universal for pragmatic reasons.

### 3.2. Licensing of the internal same

As noted by Dowty 1985, Heim 1985, Carlson 1987 and Moltmann 1992, among others, in the absence of an explicit or implicit internal argument *same* and *different* must be licensed by a plural or a universal. The question arises why -- why can't (21a) have the same meaning as (21b) but can only be interpreted anaphorically?

(21) a. John read the same book.

### b. John read a book.

I will argue that the answer to this question lies in the fact that the combination of IDENT and the definite article is semantically vacuous. As a result, its contribution is primarily pragmatic: I will argue that it is the semantic vacuity of the internal use of *same* that explains its distribution.

My starting point is the German morpheme *selb*-, which forms part of intensifiers, strong anaphors and *same*:

| (22) | a.   | Selbst JANE FONDA nascht manchmal Yogurette.                                      | German  |
|------|------|---|---------|
|      |      | even Jane Fonda eats sometimes Yogurette  |         |
|      |      | Even Jane Fonda sometimes eats Yogurette.   |         |
|      | b.   | Jane Fonda SELBST nascht manchmal Yogurette.                                      |         |
|      |      | Jane Fonda herself eats sometimes Yogurette                                       |         |
|      |      | Jane Fonda herself sometimes eats Yogurette.                                      |         |
|      | c.   | Bert <sub>i</sub> hasst sich ( <b>selbst</b> <sub>i</sub> ).                      |         |
|      |      | Bert hates REFL self  |         |
|      |      | Bert hates himself.   |         |
|      | d.   | Wir fahren das.selbe Auto.  |         |
|      |      | we drive DEF.same car   |         |
|      |      | We drive the same car (token).  |         |
|      | Ecka | ardt 2002, following Moraycsik 1972, proposes that <i>selbst</i> is nothing other | than an |

Eckardt 2002, following Moravesik 1972, proposes that *selbst* is nothing other than an  $\langle e, e \rangle$  identity function, and its contribution therefore has to be emphatic. Needless to say, such an identity function straightforwardly decomposes into IDENT and an iota operator:

 $(23) \quad \iota \; (\text{ident}\; (JF)) \Leftrightarrow \iota \; ((\lambda x \; . \; \lambda y \; . \; x = y) \; (JF)) \Leftrightarrow \iota \; (\lambda y \; . \; y = JF) \Leftrightarrow \iota x \; . \; x = JF$ 

The emergence of the morpheme *selb*- in both (22a, b) and (22d) naturally follows if it always means IDENT. The additional suffix in the intensifier use of IDENT realizes the iota operator -- a hypothesis supported by the fact that in German this suffix is homophonous with the superlative suffix, also introducing the uniqueness presupposition.<sup>5</sup>

<sup>&</sup>lt;sup>5</sup> Assuming that the complex head *selb-st* is not derived syntactically, either the morpheme encoding the iota operator has to combine with IDENT via function composition or its meaning has to be distinct from that of the definite article. In either case the fact that cross-linguistically, intensifiers, complex anaphors and *same* do not

An important feature of Eckardt's analysis is the pragmatic contribution of *selbst*: being semantically vacuous it must be emphatic and thus bring into play the contextual alternatives to the DP it combines with. Focus is a known mechanism of introducing such contextual alternatives, and indeed, the intensifying particle *selbst* clearly associates with focus. *Same*, however, just as clearly doesn't, despite the fact that under the approach defended here it's semantic contribution is no different from that of *selbst*:



Since the complement of *same* in (24) cannot be interpreted *in situ*, it necessarily moves out. As a result, even if *same* were to introduce focus, this focus would be unable to associate: the tree c-commanded by *same* is necessarily phonologically empty. An alternative way of ensuring that the sister of *same* has salient alternatives becomes necessary. I hypothesize that an existential may have salient alternatives if and only if it appears in the scope of a universal quantifier, which can be introduced by a universally quantified DP or by a distributive operator. Note that this treatment does not require that the existential itself should scope under the licensing universal (in fact, quite the opposite is true in our analysis) – rather, *same* (as opposed to *a*, *one* or *some*) is used to contrast the unique entity resulting from the wide scope of the existential with the multiple entities arising in this particular

have to share a functional core (which is what happens in English, for instance) can be derived. As the issue is not central to my present concerns, I set it aside here, along with the questions of what determines the position of *selbst* in the NP and whether its NP-external use arises as a result of extraposition.

environment from its narrow scope and serving as salient alternatives. In the absence of a universal quantifier no alternatives can be envisaged and the use of the internal *same* becomes infelicitous. Likewise, a c-commanding negative or existential quantifier also fails to create an environment in which the existential embedded under *same* is provided with salient alternatives, and therefore cannot function as a licenser either.

To complete the analysis proposed it is necessary to consider the appearance of *selb*- in complex anaphors in (22c), and in fact Geurts' (2003) account of the distribution of strong (containing *-zelf*) anaphors in Dutch provides us with this missing link. As shown by (25), the Dutch counterpart of the German *selb*-, *zelf*, appears in the same contexts, with overt morphology marking its various uses.

- (25) a. **Zelf.s** Marie kwam. even Marie came *Even Marie came*.
  - b. Marie kwam zelf niet.
    Marie came self not
    Marie herself did not come.
  - c. Elk meisje vindt zich.zelf aardig.
     every girl finds REFL.self nice
     Every girl considers herself nice.
  - d. Elk meisje las het.zelf.de boek.
     every girl read the.same.the book
     Every girl read the same book.

Dutch

Following Eckardt 2002, Geurts 2003 proposes that in strong anaphors also, *zelf* denotes an identity function and its contribution is to choose one among the contextually provided alternatives. As a result, it necessarily presupposes the existence of alternatives to the focus value, which explains the distribution of strong reflexives in Dutch without a need to appeal to syntactic structures: the strong anaphor *zichzelf* rather than the weak anaphor *zelf* can be used if alternatives to *zich* are possible:

# (26) If it is possible to construe a reflexive verb as relational, and the reflexive pronoun as referential, 'zichzelf' may be used; if not, 'zich' must be used (Geurts 2003)

Needless to say, this analysis is compatible with the assumption that the *zelf* component in Dutch strong anaphors also encodes IDENT in combination with an iota operator. Possible extensions to English logophoric reflexives can also be envisaged.

To summarize, the hypothesis that *same* has the lexical semantics of Partee's IDENT not only makes it possible for us to account for its external use (section 2) and cross-linguistic lexicalization, but also allows for a simple compositional treatment of its internal use on the basis of Barker's (2000) intuition on the close link between *same* and existential quantification. However, the QR-based analysis proposed here and the pragmatic justification of the licensing conditions on *same* predict that the *same* DP is sensitive to islands in a nonobvious way. I turn to this prediction now.

## 4. LICENSING CONFIGURATIONS

The analysis of the internal *same* proposed in the previous section attributes the constraints on its distribution to two independent factors. Since the existential contained in the *same* DP cannot be interpreted *in situ*, it should QR to the clausal level. In order to give rise to alternatives the base position of the *same* DP should be in the scope of a universal. As a result, the grammaticality of sentences containing *same* depends both on the position of the *same* DP and on the behavior of its licenser.

## 4.1. The scope of the licenser

In order to achieve quantificational variability the *same* DP has to appear in the scope of a plural or a universal. Needless to say, the internal *same* can also be licensed by a DP that does not c-command it on the surface, as in (27).<sup>6</sup>

### (27) The same waiter served everyone.

Examples such as (27) are not problematic, since the licenser, being quantified itself, can QR. Such is not always the case, which allows us to establish a clear correlation between the grammaticality of *same* and the ability of the licenser to take scope over an existential in the same position. The ungrammatical (28a), built on the corresponding example with *different* from Laca and Tasmowski 2003, is ruled out, by this reasoning, by the unavailability of a narrow scope for the indefinite: as (28b) shows, an existential in the

- (i) a. \* Dogs like different foods. (cf. ✓ all dogs)
  - b. \* The same woman chose gifts. (cf.  $\checkmark$  several gifts)
- (ii) a. The same bathroom was provided for men \*(and women).
  - b. The same conditions applied to people from different backgrounds.

The effect of modification on the ability of bare plurals to take scope is well-known (Carlson 1977a, 1977b, Chierchia 1998), but I cannot provide any explanation for the ungrammaticality of examples like (i-a).

<sup>&</sup>lt;sup>6</sup> Carlson 1987 provides some evidence that bare plurals, irrespective of their surface position, cannot license *same* or *different* (i). However, examples like (ii) show that with suitable modification bare plurals can license *same*, even if they don't c-command it.

(28) a. <sup>??</sup>The same witness believed every defendant to be guilty.

Interestingly, if the existential is modified, its narrow scope becomes possible, as does the use of *same*:

(29) a. A prejudiced witness believed every defendant to be guilty.

# b. The same prejudiced witness believed every defendant to be guilty.

Carlson 1987 also notes that bare plurals (unlike definite plurals or universals) license *different* much better in the subject position (30) than they do in the object position (31). This is in fact what we expect, given that indefinites in the object position can only outscope an indefinite subject with utmost difficulty (see Ruys 1992, Liu 1990, Beghelli 1993, 1995, Beghelli and Stowell 1997, Reinhart 2006, etc.).

- (30) a. Every man saw a different movie.
  - b. <sup>(?)</sup>Some men saw different movies.
- (31) a. The same men talked to Mark and Alan.
  - b. <sup>??</sup>The same men talked to some women.

The same principle applies to (32a): in this case the corresponding indefinite example (32b) is ruled out by Larson's constraint on inverse linking (Larson 1985): a universal contained in a PP forming part of the object can only outscope the subject if the entire object does, as shown by Larson's examples in (33). Crucially, even if an indefinite NP containing a universal PP outscopes the existential in the subject position, it still doesn't create a

configuration where this existential would be in the scope of the universal and give rise to alternatives, and the *same* DP in the subject position is correctly predicted to be ruled out.

(32) a. \*The same professor wrote a book about every artist.

- (33) a. Two politicians spy on [someone from every city]
  - b. Two engineers repaired [some exits from every freeway in a large California city]

To sum up, the emphatic character of *same* combined with the lack of focus requires the *same* DP to appear in the scope of a universal. When, despite its quantificational nature, the putative licenser cannot outscope the *same* DP, the result is ungrammatical.

### 4.2. The scope of the existential

As discussed above, the existential NP-argument of the internal *same* cannot be interpreted *in situ* and must QR to the clausal level. In addition, the pragmatic constraints on the internal *same* require the existential to not remain in the scope of its licenser. The practical outcome is, at first blush, that the existential NP-argument must outscope the licenser of *same*.

The ungrammaticality of examples (34) strongly suggests that the internal *same* may not be separated from its licenser by a syntactic island. This putative sensitivity of the internal *same* to islands is confirmed by the fact that non-bridge verbs and factive verbs, which create islands for movement, block the internal reading of *same* in (35) (see Moltmann 1992 for a discussion of these effects for *different*):

- (34) a. \*Everyone/Elizabeth and Peter will be happy if the same murderer dies.
  - b. \*That the same famous actress was selected upset everyone/Grace and Charlie.

(35) a. \*John and Mary whispered that the same students were guilty.

b. \*John and Mary know that the same students were guilty.

Given these facts, it is unexpected that *same* appears not to be subject to the Specificity Constraint (Fiengo and Higginbotham 1981): a DP containing *same* may be specific, as in (36). I contend, however, that these apparent violations of the Specificity Constraint in fact provide support for the analysis suggested here.

(36) a. Every witness saw the same car at the murder scene – Claire's BMW.

# b. Both explorers reached the same continent, which should have been India, but turned out to be America.

Indeed, under my approach both the cataphoric NP in (36a) and the appositive relative in (36b) need not diagnose the specificity of the *same* DP as a whole. Instead, I contend that what is specific in (36) is the existentially quantified NP inside the *same* DP, with the specific interpretation achieved along the lines proposed by Schwarzschild 2002.<sup>7</sup> As a result, the definite *same* DPs in (36) can be argued not to be specific even though they denote the same individuals as the specific NPs they contain; in Donnellan's (1966) terms, they are attributive rather than referential.

A further refinement comes from some cases where the *same* DP is contained in an island, but nevertheless grammatical. In examples (37) *same* is contained inside a CP

<sup>&</sup>lt;sup>7</sup> It is generally assumed that nonrestrictive relative clauses can only combine with referential DPs (type e). The following example (Eddy Ruys, personal communication) shows that such is not the case:

 <sup>(</sup>i) In the game of *Sheep and Tides* each player must sing *Rule Britannia*, so long as **one other** player, who is designated his personal opponent, manages to stand on one foot.

complement of a noun, but the result is grammatical despite the violation of the Complex NP Constraint.<sup>8</sup> Reduced relative clauses in (38) show the same effect:

(37) a. John and Mary had a strong belief that Sue took the same course.

- b. Every student had a strong belief that Sue took the same course.
- (38) a. <sup>%</sup>A car driven by the same driver hit John and Mary.
  - b. <sup>%</sup>A car driven by the same driver hit every student.

What is the difference between the sentential islands and clausal adjuncts in (34), and the complex NPs in (37) and (38)? The distinction that I draw between the sentential scope of the existential contained in the *same* DP and the condition on its licensing yields the correct distinction. As the *same* DP in examples (37) and (38) is merged in the scope of a universal or the distributive operator, it satisfies the pragmatic constraint on the use of *same* by making

- (i) a. The men found books which discussed different topics.
  - b. Someone found books that discussed each topic.
- (ii) a. John and Mary organized parties that took place on **different** days.
  - b. <sup>%</sup> John and Mary thought that Sue took courses that were taught by **different** teachers.
  - c. <sup>%</sup> John and Mary thought that Sue solved the problem by using **different** methods.
  - d. <sup>%</sup> John and Mary heard claims that different stores were robbed.

<sup>&</sup>lt;sup>8</sup> Carlson 1987:565 claims that in example (i-a) *different* is licensed by the matrix subject, and compares it to (i-b), where *each*, he claims, can have the widest scope. If such is truly the case, it does not affect the argument above, but unfortunately, I have been unable to confirm Carlson's judgment. In addition, *different* in (i-a) might also be licensed by the plurality of the NP it is contained in or by the plural relative operator: as discussed in section 6.2, *different* inside a plural NP may give rise to a reciprocal interpretation, which requires no licenser, and therefore cannot be used to diagnose island configurations. The same issue arises with examples (ii) from Moltmann 1992:

salient the relevant alternatives. Since the existential NP contained in the *same* DP in (37) and (38) may take scope internally to the reduced or full relative clause, its interpretability does not need to result in an island violation. Finally, the existential NP contained in the *same* DP can escape the scope of the licensing universal/plural to obtain the correct interpretation -- it is enough that the indefinite complex NP containing it does. As a result, the *same* DP does not lead to ungrammaticality despite appearing in an island.

To summarize, in order to be licensed the *same* DP must appear in the scope of a universal, but the existential complement of *same* may not be c-commanded by this universal at LF. As a result, the syntactic relations between the *same* DP and its licenser may become extremely complicated, which I attempted to illustrate in this section. However, neither the analysis sketched here nor any other analysis that I'm aware of can account for the behavior of *same* with respect to the Coordinate Structure Constraint.

# 4.3. The Coordinate Structure Constraint

The hypothesis that the existentially quantified sister of the internal *same* QRs to the clausal level predicts that the internal *same* cannot appear inside a coordinated DP. This prediction is correct, but unexpectedly the internal *same* inside a coordinated DP becomes grammatical if the second conjunct contains either *same* or *different*:

- (39) a. \*We bought the same journal and a novel.
  - b. \*We saw the accident and the same suspicious person.
  - c. \*The two policemen noticed every clue and the same discrepancy.

# (40) a. Two isotopes have [the same number of protons and a different number of neutrons].

### b. We went to [the same school and the same college].

It seems impossible to claim that examples (40) involve ATB extraction, as required by either my analysis or Barker's, since the two conjuncts do not contain the same existentials. It is perhaps unsurprising that a similar effect obtains with the external *same*: contrary to our expectations, it is possible inside a coordination of two DPs:

### (41) We bought [a mini-crib and the same mattress (as Janice)], and everything fit perfectly.

Under the analysis advocated here even if the comparative clause is extraposed out of the coordinated DP, violating the Coordinate Structure Constraint, the resulting CP still does not provide a proper antecedent for ellipsis resolution: (41) should then have entailed that Janice had also bought a mini-crib. Once again, exactly the same effect is observed with comparatives or equatives:

### (42) We bought [a mini-crib and a more expensive mattress than Janice].

Being unable to provide a solution I hypothesize that the unexpected behavior of *same*, comparatives and equatives might fit into the more general conditions under which the Coordinate Structure Constraint can be violated (Goldsmith 1985, Lakoff 1986). The fact that the Left Branch Condition is also implicated might suggest a possible direction for future research.

### 5. THE INTERNAL SAME: ADJECTIVE QR

In his treatment of the internal *same* Barker 2007 proposes that it should be treated as a scope-taking adjective. His starting point is the NP-internal use of *same*, where *same* is licensed by the plurality of the NP containing it:

(43) Two men with the same name are sitting in this room.

Barker offers the following paraphrase as the basis for semantic composition:

(44)  $\exists f_{choice}$  Two men with the  $f_{choice}$  (name) are sitting in this room.

To obtain the desired truth-conditions, Barker proposes that *same* is a quantificational adjective introducing existential quantification over choice functions of the nonstandard type  $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$  that return a singleton set (rather than an entity):

# (45) $\llbracket \text{same} \rrbracket = \lambda F_{\langle\langle\langle e, t \rangle, \langle e, t \rangle\rangle, \langle e, t \rangle\rangle} \cdot \lambda X_e \cdot \exists f_{\langle\langle e, t \rangle, \langle e, t \rangle\rangle} \forall x < X \llbracket F(f) \rrbracket(x) \rrbracket$

As the derivation in (46) shows, *same* is not interpretable in its base position [1] and therefore must QR [2] and adjoin to some node of the type  $\langle e, t \rangle$  [4], leaving behind a trace of the semantic type  $\langle \langle e, t \rangle$ ,  $\langle e, t \rangle$  [1].  $\lambda$ -abstraction [3] over the variable resulting from the movement of *same* then yields the correct semantic type for the sister of *same* [5].



As a result, (44) is compositionally derived as the meaning of (43) and the NP describes the property of being a plural individual consisting of men with the name chosen by some choice function. This leads to some problems when NP-external uses of *same* are considered:

# (47) The same waiter served everyone.

To be licensed by a quantified or plural object (*everyone* in this example), *same* must adjoin below its scope position. However, the semantic type of the constituent created in this derivation is incompatible with the requirements of *same*:



To solve this problem, Barker uses a variation on the standard compositional semantics of movement, where the adjunction of the moved element does not occur immediately after  $\lambda$ abstraction, permitting another  $\lambda$ -abstraction to happen. This technical move, proposed for the treatment of parasitic gap adjuncts by Nissenbaum 1998a, 1998b and used for comparative superlatives by Heim 1999, is known as *parasitic scope*:



Since these truth-conditions are effectively the same as those proposed in section 3, our next goal is to compare the two analyses. On the number of points they give rise to exactly the same predictions. As noted by Barker 2007, the lexical semantics that he proposes for *same* correctly forces it to be obligatorily attributive (since the  $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$  trace that it leaves behind has to combine with a predicate); the same prediction is made by the hypothesis that the internal *same* applies to existentially quantified NPs.<sup>9</sup> The obligatory

<sup>&</sup>lt;sup>9</sup> Sometimes *same* appears without an overt noun, although always with a definite article, as in (i). I set aside these uses here, but see Matushansky and Ruys 2007 for the discussion of both the missing noun and its semantics.

presence of the definite article follows in my analysis from the meaning of IDENT, which has the uniqueness presupposition associated with *the*; Barker's analysis encodes the same intuition, although it is more difficult to state, since the piece of meaning associated with the relevant uniqueness presupposition is a trace. However, the different semantic types of *same* in the two proposals require differing analyses for examples (50). As is easy to see, Barker's analysis correctly predicts the ungrammaticality of (50a-d); to account for the grammaticality of (50e) it is only necessary to assume an "adjectival" semantics of cardinal numerals (Landman 2003, Ionin and Matushansky 2006), which would permit *two students* to have the semantic type  $\langle e, t \rangle$ .

- (50) a. \*the same a/some student
  - b. \*the same every student
  - c. \* the same the professor
  - d. \* the same my friend
  - e. the same two students

In my proposal only the treatment of (50e) is as straightforward: no special assumptions about cardinals are necessary. To rule out (50a), I hypothesize that *one*, *some* and an overt *a* are impossible due to by their more complex pragmatic contribution, and the universally quantified DP in (50b) is probably excluded because it gives rise to no suitable alternatives.

b. George got fifty bucks and Fred got the same.

Nothing predicts that the external *same* (which Barker does not deal with) should be attributive as well, but I note the nonexistence of any other predicative adjective that returns a singleton set (see Matushansky 2008 for the obligatorily attributive nature of superlatives; the same arguments can be extended for ordinals).

<sup>(</sup>i) a. Men are all the same.

Regarding (50c, d), as is clear from section 3.2, nothing in my proposal precludes the combination of IDENT with a definite DP, though its pragmatic contribution (and sometimes, lexical realization) is then different. The need to appeal to such independent principles seems to me nonetheless not to be too high a price to pay for a unified approach to the external and internal *same*, which Barker's treatment, relying as it does on a particular lexical entry for *same*, cannot do.

Another issue where the decompositional vs. integrated approaches to *same* give rise to different predictions is the treatment of universally quantified licensers. As discussed above, under my approach to the internal *same* the universal quantifier and the distributive operator are in complementary distribution:



# b. $\exists x \text{ book } (x) \land \forall y \text{ [ [student]] } (y) \rightarrow y \text{ bought [[the]] } (\text{IDENT } (x) \text{]}$

Leaving off the distributive operator is impossible in Barker's analysis, since universal quantification is part of the lexical entry for *same*, repeated here for the sake of convenience:

(45)  $\llbracket \text{same} \rrbracket = \lambda F_{\langle \langle \langle e, t \rangle, \langle e, t \rangle \rangle, \langle e, t \rangle \rangle} \cdot \lambda X_e \cdot \exists f \, \underline{\forall x < X} \, [[F(f)](x)]$ 

As Barker notes, (45) is inherently distributive and thus requires a license that is a nonatomic entity. This means that universally quantified NPs have to be treated as plurals, which in turn predicts that they should be able to combine with non-atomic predicates. As Barker notes, *every* can do so (52a), but *each* can't (52b). Barker's approach thus incorrectly predicts that *each* cannot function as a licenser for *same*.

(52) a. Everyone gathered in the living room.

b. \*Each person gathered in the living room.

The final point of discussion has to do with non-argument licensers:

| (53) | ) a. John saw and reviewed the same film. |  | V-conjunction   |  |
|------|---|--|-----------------|--|
|      | b.  | Max put the same plates on the table and in the cupboard.    | PP-conjunction  |  |
|      | c.  | John read the same book yesterday and today.                 | Adv-conjunction |  |
|      | c.  | The same person discovered America and invented bifocals.    | VP-conjunction  |  |
|      | d.  | John maligned, and Mary praised, the same recording artists. | RNR             |  |

Since in Barker's approach the licensing mechanism (distribution down to individuals) is built into the lexical semantics of *same*, in order to extend his analysis to licensers that are not entities, as in (53), Barker modifies the lexical entry for *same* so as to allow X in (45) to range over any semantic type. Crucially Barker introduces this amendment as part of restating his analysis in the categorial-grammar framework known as *continuations* (Barker 2002), which doesn't presuppose syntactic movement of either *same* or its licenser and can dispense with the questionable mechanism of parasitic scope. Exactly along the same lines we hypothesized in section 3.1 that the distributive operator we had used to achieve distribution with plural licensers need not be type-sensitive. Though the stipulation is the same in both analyses, incorporating it into the distributive operator is independently necessary to deal

with event multiplication, which makes my proposal more parsimonious and dispenses with Barker's argument for continuations in preference to the more standard QR.

To summarize, the main difference between the two approaches to the internal *same* is the lexical semantics of *same*: while Barker treats it as a quantificational adjective, in my proposal the same truth conditions are achieved by the combination of IDENT (i.e., *same* itself), existential quantification and the distributive operator, all of which are independently motivated. As a result, I have to provide a separate explanation for the licensing conditions on *same*, while Barker has problems dealing with universal licensers. Conversely, whereas it is impossible to extend Barker's proposal to the external *same*, in my approach additional stipulations are needed to explain why only bare NPs with a covert existential quantifier appear as the internal argument of the internal *same*.

Besides the unification of all the uses of *same* and independent motivation for each of the functional components necessary, I consider the two major advantages of my proposal to be the account it provides of the cross-linguistic lexical relation between *same* and various emphatic morphemes (Safir 1996), and a more adequate empirical coverage of the island-sensitivity of the internal *same*. Last but not least, the fact that the recourse to continuations is unnecessary for my approach makes it an additional argument in favor of the more standard syntactic realization of QR (Heim and Kratzer 1998).

### 6. IS DIFFERENT IS THE SAME?

The juxtaposition of the internal and external uses of *same/different* doesn't translate, under my account, into two different lexical items: I have argued that in both uses the meaning of *same* is that of IDENT. However, as noted by Beck 2000, some readings of *different* (those

licensed by a contextual antecedent or by a universal) are translated as *ander* in German and others (those licensed by a plural) as *verschieden*:

- (54) internal readings
  - a. Detmar und Kordula wohnen in verschiedenen Städten. plural NP dependent
     Detmar and Kordula live in different cities.
  - b. Jedes M\u00e4dchen hat ein anderes Buch gelesen. Q-bound
     each girl has a different book read
     Every girl read a different book.

(55) external readings

| a. | Frank hat ein | n anderes (*versch    | iedenes) Buch  | gekauft. | discourse anaphoric |
|----|---------------|-----------------------|----------------|----------|---------------------|
|    | Frank has a   | different             | book           | bought   |                     |
|    | Frank bought  | a book different from | m some salient | book.    |                     |
| b. | Frank hat ve  | rschiedene Bucher     | gekauft.       |          | reciprocal          |
|    | Frank has dif | ferent books          | bought         |          |                     |
|    | Frank bought  | different books.      |                |          |                     |

Even though the lexical split in German cuts across the internal/external uses of *different*, in this section I will demonstrate that the analysis proposed above can be extended to *different* under the standard assumption is that it is an antonym of *same*.

#### 6.1. The discourse-anaphoric/transitive different

If *different* is the antonym of *same*, *different* has to correspond to the combination of negation with the IDENT operator. As a result, the discourse-anaphoric use of *different* (translated into German as *ander*) is accounted for along the following lines:



Assuming that *different*, like *same* and most adjectives, does not assign case, its internal argument slot can be saturated either by a free variable, as above (yielding comparison to the contextually provided antecedent ) or by a CP of the right semantic type (*e*) (see section 6.3 for the discussion of the Q-bound use). We therefore correctly predict that the German *ander* can appear with both types of arguments (Beck 2000).

Several issues arise that I have not seen discussed before. The maximality operator in the comparative clause gives rise to incorrect truth conditions when the comparative clause contains a universal (cf. von Stechow 1984, Schwarzschild and Wilkinson 2002 for the same issue in comparatives). In addition, the interpretation of the *than*-comparative clause with *different* is identical to that of the *as*-clause in (9) with *same*, which is completely unexpected, since VP-ellipsis is obligatory in the comparative clause. Three *ad hoc* stipulations would yield the right truth conditions: removing from the comparative clause the negation internal to *different*, removing *different* itself, or introducing additional negation in the right position (see von Stechow 1984, Larson 1988 for the same issue in comparatives).

None of these options is satisfactory, but as a result another point of similarity with comparatives arises in the issue of complementizer choice: why does *different* combine with a *than*-clause and *same*, with an *as*-clause? Since *same* rather than *different* is my primary focus here, I leave these questions for future research.

### 6.2. The reciprocal use of same and different

The analysis proposed in (56) for the discourse-anaphoric *different* (the German *ander*) bears a strong resemblance to Beck's (2000) semantics for the German *verschieden*, primarily used in a plural NP, restated in (57b). I suggest that it is this similarity that lies at the core of the fact that the same lexical item is used for both in English.

- (57) a.  $\llbracket different \rrbracket = \lambda x \cdot \lambda y \cdot \neg IDENT(x)(y)$ 
  - b. [verschieden]](a)(b) = 1 iff
    - (i)  $a \neq b$ , or

(ii) a instantiates the kind a', b instantiates the kind b' and  $a' \neq b'$ 

Just as cross-linguistic lexicalization patterns of *same* (Matushansky and Ruys 2007) indicate its functional nature, the lexicalization of *different* in German suggests a more complicated state of affairs: while *verschieden* seems to be a lexical adjective derived from a lexical root and employing standard derivational morphology, *ander* appears noticeably more functional. Of primary importance here is the reciprocal use of *different*, which requires no licenser and is lexicalized in German as *verschieden* (55b). Although lacking an antonym in English, this reciprocal *different* has a *same* counterpart in German (*gleich*, cf. Schwarz 2007), in Russian (*odinakovyj*, cf. Israeli 1999) and in Dutch (*dezelfde*, see Matushansky and Ruys 2007), some of which seem to be purely lexical as well.

I hypothesize that the lexical *same* and the lexical *different* encode kind identity, as in (57b-ii), rather than the identity of entities, as in (57b-i), although I will not attempt to provide a more detailed lexical semantics deriving this result from the corresponding roots. Crucially for the interpretation of *different*, the non-identity of the kinds that two entities belong to necessarily entails the non-identity of the two entities, which to my mind explains the intuition behind the disjunction in (57b).<sup>10</sup>

Following Beck 2000, I will assume that *verschieden* involves reciprocity, and to derive it I adopt the treatment of plural relational NPs proposed by Matushansky and Ionin 2011 (rather than Beck's own treatment), with the compositional semantics in (58):



Following Beck 2000, I assume that all plural uses of *different*, despite the presence of an apparent licenser, actually involve the reciprocal structure in (58), and the one-to-one matching with the licenser is due to cumulation. I hypothesize that the singular use of *verschieden*, as in (59), is due to some independent mechanism; assuming that *verschieden* 

verschiedene/gleiche Bücher

<sup>&</sup>lt;sup>10</sup> It is not clear to me at this point whether what I call "kind-identity" does not involve comparison between the sets of properties of the relevant individuals, as suggested by Alrenga 2006, 2010. One argument in favor of such a treatment (which, incidentally, results in a stronger dissimilarity between *ander* and *verschieden*) comes from the fact that the property reading of *same* in English only arises as a result of coercion (Matushansky and Ruys 2007), which would be unexpected if the only difference between the two were sortal.

can be nonreciprocal with the structure as an (56) does not predict its inability to function discourse-anaphorically (55b).

(59) Luise hatte ein von diesem verschiedenes Beispiel.

Luise had a from this different example Luise had a different example from this one.

To summarize, I follow Beck 2000 in assuming two lexical entries for *different*, but provide a somewhat different lexical semantics for the two. For *ander*, which I consider to be the true counterpart of the functional *same*, I postulate the lexical entry in (57a). My treatment of *verschieden* (and its positive counterpart *gleich*) is more complicated: although I assume that it also involves non-identity along the same lines as (57a), I also hypothesize that this non-identity is stated in the terms of the kinds that the entities compared belong to, as in (57b-ii), rather than in the terms of the entities themselves. Finally, following Beck 2000, I assume that *verschieden* involves obligatory reciprocity.

### 6.3. The Q-bound different

We now seem to find ourselves in a somewhat paradoxical situation. While we have argued that the external and the internal *same* have different syntax, for *different* we have adopted two distinct, albeit related lexical entries and the syntax identical to that of the external *same*. The natural question to ask at this point is whether the syntax that we have proposed for the internal *same* is ever used with *different* -- could it perhaps be used to derive the instances of *different* where it is licensed by a universal, as in (60)? Needless to say, since (60) does not involve a plural NP, the reciprocal treatment is impossible.

(60) Every witness described a different car.

Unfortunately, an antonym of the internal *same* would necessarily be redundant. Indeed, consider the truth-conditions of (61a): what it says is that Julian bought a book different from some other book -- in other words, exactly the same thing as (61b). Since both (61a) and (61b) can only be used if this set of books contains more than one member, i.e., when the definite article cannot be used, there is no pragmatic contribution that may be associated with (61a) but not with (61b).

## (61) a. Julian bought $\neg$ IDENT ( $\exists$ book).

### b. Julian bought a book.

Following Beck 2000, I hypothesize that *different* licensed by a universal quantifier (what Beck calls "the Q-bound reading") should be assimilated to the similarly licensed use of comparatives, as in (62).<sup>11</sup> The absence of licensing of *same* or *different* by the distributive universal *každyj* 'each' (as opposed to the collective *vse* 'all') in Russian (see Brasoveanu 2008, to appear) further supports the intuition that such licensing is achieved by a separate mechanism.

| (62) | a.  | Each subsequent apple was more succulent.        | Beck 2000                         |  |
|------|---|--|-----------------------------------|--|
|      | b.  | The final exams get easier each year.            | Zwarts, Hendriks and de Hoop 2005 |  |
|      | c. Wolves get bigger as you go north from here. |  | Carlson 1977b                     |  |
|      | Here  | also I follow the guidelines suggested by Beck 2 | 000, who assumes the following    |  |

truth-conditions for (60):

<sup>&</sup>lt;sup>11</sup> Zwarts, Hendriks and de Hoop 2005 propose an analysis of "reflexive" comparatives formulated in the terms of Bidirectional OT. It is unclear whether this analysis can be extended to cases like (60), since it is intended to also cover many other cases where the internal argument of the comparative is not introduced explicitly, such as comparative correlatives (*The more you eat, the fatter you get*) and multiple comparatives with a shared implicit comparison clause (*Nowadays, more goods are carried faster*), which have no counterpart with *different*.

(63)  $\forall x \text{ [witness } (x) \rightarrow x \text{ described a car } z \text{ such that } \underline{\forall y \neq x} \text{ [witness } (y) \rightarrow y \text{ described a car } w \text{] and } \neg \text{IDENT } (z, w) \text{]}$ 

To achieve this result Beck 2000 suggests that the universal quantifier bind two variables, but such an unconventional solution becomes unnecessary if both (60) and (62) involve total ellipsis of the comparative clause. As shown by (64), the non-identity condition in the restriction on the universal quantifier (underlined in (63)) is part of the semantics of comparative clauses and need not be stipulated.

(64) a. Sabine is smarter than anyone (else). Matushansky and Ionin 2011

### b. Everybody has a faster computer than Douglas. Beck 2000

The question now arises about the Q-bound use of *same*, which I have treated on a par with *same* licensed by plurals -- shouldn't it also be assimilated to comparatives? The answer is unclear: on the one hand, as mentioned above, Russian groups *same* and *different* together in disallowing a singular universal licenser for both; on the other hand, the behavior of the internal *same* in island configurations (section 4) does not seem to distinguish between plural and universal licensers. Indeed, consider (36a), where the *same* DP is specific:

(36) a. Every witness saw the same car at the murder scene – Claire's BMW.

If we were to treat the Q-bound *same* as an instance of the internal *same* with an elided comparative clause, (36a) would have been predicted to be ungrammatical, since it would have required operator movement out of a specific DP in the comparison clause. Likewise, in (37b) *same* is contained inside a CP complement of a noun, but the result is grammatical.

(65) b. Every student had a strong belief that Sue took the same course.

Leaving the issue for future research, I therefore maintain the traditional juxtaposition of the internal and external uses of *same*.

#### 7. CONCLUSION

In this paper I have argued for a unified compositional analysis of *same* based on the assumption that *same* is a functional adjective with the semantics of Partee's IDENT. I have shown that this hypothesis straightforwardly accounts for the external *same*, which may combine with a contextually provided antecedent (i.e., with a free variable) or with a definite description provided by the comparative clause, which I have analyzed along the same lines as the comparative clause associated with equatives.

Following the insight of Barker 2007 I have proposed that the internal *same* involves wide-scope existential quantification: I have shown that in the scope of a plural or a universal *same* may combine with an existentially quantified NP, which then needs to move out of the scope of the licenser. As a result, the analysis of the internal *same* defended here does not introduce any functional items beyond those independently motivated (IDENT, the distributive operator and an existentially quantified noun phrase). I have proposed a pragmatic analysis of the distribution of the internal *same* linking it to intensifiers, focus particles and strong reflexives, thus providing an explanation for the fact that the same morphemes are used in these emphatic markers (cf. Safir 1996). This treatment correctly predicts a rather complex relation between *same* and its licenser due to the island-sensitivity of both quantified expressions involved. I have demonstrated the advantages that my treatment has over the one by Barker 2007 on a number of empirical and theoretical points and sketched its extension to *different* that allows us to take into consideration its ability to account for adverbial and conjoined licensers of *same* (Carlson 1987) the analysis proposed here represents the first

fully unified and compositional treatment of all uses of *same* incorporating all the major insights from prior proposals.

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