Same but different *

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Abstract

In this paper, we argue that *same* is fundamentally different from *different*, in that *same* imposes a discourse condition on eventualities, while *different* compares individuals. This difference has not been noted in previous literature. Furthermore, in the literature on *same*, there has been a persistent puzzle about the contribution of the definite article with which *same* must co-occur. We show that this puzzle is resolved once the contribution of *same* is adjusted to apply to eventualities: then the definite article can be interpreted in the usual way, as generating a presupposition about individuals.

1   Introduction

The adjectives *same* and *different* compare two expressions: a local containing expression and its antecedent. A minimal way of capturing this is with double indexing: one index for the local containing expression and the other index for the antecedent. Then the meaning of *different$_j^i$* is simply $u_i \neq u_j$ and the meaning of *same$_j^i$*, $u_i = u_j$. This is essentially the proposal of Brasoveanu (2011), which is illustrated by (1).

(1)   John read a^i book.

      a.   Susan read a^j different^i_j book.

      b.   Susan read the^j same^i_j book.

The indexing ensures that in (1a) Susan and John read distinct books, whereas in (1b) they read identical books. In this respect *same* is like pronouns, definite descriptions and ellipsis, all of which must be identified with an antecedent.

Hardt <u>et al.</u> (2012) compare expressions with *same* to pronouns and ellipsis and argue that *same* is sensitive to the structure of eventualities in a way that pronouns and ellipsis are not. In this paper, we show that *different* patterns with pronouns and ellipsis in not being sensitive to eventualities. This is surprising, since the existing literature treats *same* and *different* as duals that differ only in expressing identity or distinction (Heim 1985, Dowty 1985, Carlson 1987, Barker 2007, as well as Brasoveanu 2011). Taking the double indexing analysis of Brasoveanu (2011) as our analytic starting point, we propose that this contrast between *same* and *different* can be accounted for by letting *same* index eventualities, whereas *different* indexes individuals. Thus we propose that (1) should be indexed as in (2):

(2)   [John read a^i book]^k.

      a.   Susan read a^j different^i_j book.

      b.   [Susan read the^j same^k_l book]^l.

The indices on *different* are unchanged, but *same* now indexes a containing eventuality l and an antecedent eventuality k. The condition that *same* places on these two eventualities is more abstract than a simple identity of reference. Drawing on the literature on discourse coherence, especially Kehler (2002), we propose that they must be related by *Parallel*:

(3)   Parallel: Infer $P(a_1, a_2, \ldots)$ from the assertion of $S1$ and $P(b_1, b_2, \ldots)$ from the assertion of $S2$, for a (non-trivial) common P and similar a_i and b_i.

Parallel requires a common relation P that subsumes the relation of both S1 and S2, as well as similar parallel elements. In the case of (2b), S1 expresses the antecedent eventuality k and S2

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expresses the containing eventuality l, and Parallel is satisfied as follows: there is a non-trivial common relation P, namely *read*, and there are two pairs of similar parallel elements, where the first pair is $<John, Susan>$ and the second is $<a\ book,\ the\ book>$.

To satisfy Parallel, two eventualities must contain similar predicates applied to similar arguments. Two predicates count as similar if they both entail a non-trivial common relation. The arguments are similar to the extent that similar predicates apply to them. An intuitive way of computing this can be found in accounts such as Asher (1993) and Prüst et al. (1994), where parallelism is thought of as a kind of most specific unifier, which captures the semantic commonality between the two eventualities.

Thus both *different* and *same* are permitted in (2), but for different reasons. *Different* must simply find a non-identical individual-denoting antecedent, indexed with i. *Same* on the other hand requires that the containing sentence, indexed with l, is Parallel to the antecedent sentence indexed with k.

A noteworthy feature of our analysis is that *same* does not express any identity requirement on individuals, i.e. on i and j in (2). Instead we attribute the coreference of i and j in (2) to the presence of the definite article: as a definite description, *the same book* must find an antecedent, and the indefinite NP in the preceding clause is a suitable candidate. In our view this is entirely parallel to the interpretation of *the book* in (4), which lacks *same*:

(4)   John read a book and Susan read the book too.

Once the effect of the definite article is acknowledged, it presents the following puzzle: if identity with the antecedent NP is ensured by the presence of the definite article, *same* would seem to be semantically vacuous. Our analysis of *same* resolves this puzzle: the semantic contribution of *same* lies elsewhere, namely in requiring parallel eventualities. (Note in this connection the complementary distribution between *same* and and the additive particle *too* in (2) and (4).)

Barker (2007) attempts to resolves this puzzle in a different way: he argues that the definite article is interpreted differently when appearing with *same*. He suggests (section 5.7) that attributive *same* cancels the standard existence presupposition of the definite article. Specifically he observes that (5a) doesn't presuppose that there is a (unique) book that John and Bill each read

as seen by the fact that "if the sentence is negated, questioned, or embedded under an epistemic modal, there is no guarantee that such a book exists."

(5)   a.   John and Bill read the same book.

        b.   John and Bill didn't read the same book.

        c.   Did John and Bill read the same book?

        d.   John and Bill might have read the same book.

We agree that (5a) does not presuppose that *such* a book exists, but it does presuppose that *some* book exists, a presupposition that, we argue, stems from the definite article. This can be seen more clearly by replacing *book* with something whose existence is controversial, like *unicorn* or *ten foot tall man*:

(6)   a.   John and Bill saw the same unicorn.

        b.   John and Bill didn't see the same unicorn.

        c.   Did John and Bill see the same unicorn?

        d.   John and Bill might have seen the same unicorn.

(7)   a.   John and Bill saw the same ten foot tall man.

        b.   John and Bill didn't see the same ten foot tall man.

        c.   Did John and Bill see the same ten foot tall man?

        d.   John and Bill might have seen the same ten foot tall man.

It seems to us that the sentences in (6) all require the existence of unicorns and that the sentences in (7) all require the existence of ten foot tall men. If so, the definite article does impose its usual existence presupposition in NPs of the form *the same* (A) N; once this is clarified, the contribution of *same* can be observed more clearly.

The main hypothesis of this paper is that *same* differs from *different* in that it imposes a parallelism constraint on eventualities, while *different* imposes a distinctness condition on individuals. No existing accounts have observed this fundamental distinction between *same* and *different*. In

other accounts (Barker 2007 and Brasoveanu 2011), *same* imposes an identity condition on individuals; in these accounts there is essentially no semantic contribution by the definite article which must accompany *same*. By contrast, we propose that the definite article makes the same semantic contribution whether or not it occurs with *same*, namely that it presupposes the existence of a uniquely identifiable individual.

In the next section we turn to examples where our proposed distinction between *same* and *different* can be clearly observed. These all involve manipulations of the antecedent clause, S1, that systematically render *same* infelicitous, whereas both *different* and pronouns are unaffected. In our view, these effects show that *same* crucially involves a relation between eventuality-denoting expressions; other accounts, such as Brasoveanu's, do not invoke eventualities and thus cannnot account for these effects. It is worth noting that both Carlson (1987) and Heim (1985) in a sense invoke eventuality-denoting expressions for *same*, but neither distinguishes between *same* and *different* in this regard, and thus neither captures the contrasts documented here.

The presentation in Section 2 is informal, but in Section 3 we show how it can be integrated with the formal analysis developed in Brasoveanu (2011). In Section 4 we extend Brasoveanu's stack concatenation system to derive so-called internal readings of *same* available in examples like *Every student read the same book*. We end by discussing some issues that arise from our analysis: untensed eventualities, relational nouns, licensing expressions for internal readings and the apparent island sensitivity of *same*.

2   *Same* vs. *different*

In this section we observe a series of contrasts between *same* and *different*. In each case *same* is ruled out where *different* is allowed. This is striking because all previous analyses of *same* and *different* treat them as duals of each other that differ only in imposing identity or non-identity. We argue that these contrasts require a reanalysis of *same* and show that a simple change to the double indexing analysis of Brasoveanu (2011) accomplishes this.

To lay out the contrasts between *same* and *different*, it is useful to fix some terminology. In (8) the CONTAINING NP is *the same book*, the ANTECEDENT NP is *War and Peace*. The CONTAIN-

ING CLAUSE is *Susan read the same book* and the ANTECEDENT CLAUSE is *John read War and Peace*.

(8)   John read *War and Peace* and Susan read the same book.

Negated antecedent   The first observation is that negating the antecedent clause renders *same* infelicitous (9b), but has no effect on *different* (9a) or the pronoun *it* (9c).

(9)   John didn't read *War and Peace*,

      a.   but he read a different book.

      b.   *but Susan read the same book.

      c.   but Susan read it.

The contrast between (9b) and (9c) is also observed in Hardt et al. (2012), whereas the contrast between (9b) and (9a) is to the best of our knowledge a novel observation. To account for the infelicity of (9b), Hardt et al. (2012) propose that *same* carries a *True Antecedent* requirement, which requires its antecedent eventuality to be true in context. The antecedent eventuality for *same* in (9b) is that of John reading *War and Peace*. Since that eventuality is negated by the first clause of (9), True Antecedent fails and *same* is not licensed.

Here we propose an alternative to the True Antecedent claim – we claim, rather, that the antecedent eventuality must be accessible, as defined in DRT (Kamp and Reyle 1993). We propose this reformulation because it shows that the effect is a consequence of the fact that *same* imposes the Parallel condition on the containing and the antecedent eventuality; if the antecedent eventuality is not accessible, the drs would be ill-formed. Thus while Hardt et al. (2012) posit True Antecedent as an independent constraint, we show that it is a consequence of the parallelism requirement associated with *same*.[1]

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[1]It is worth noting that the proposed accessibility requirement is not equivalent to True Antecedent; while an accessible antecedent is always true in context, the converse does not hold. For example, an **L&P** reviewer points out that an embedded negation renders an antecedent inaccessible, although its existence is entailed in context, as in (10):

(10)   It is not the case that John didn't read War and Peace. *Ann read the same book.

As the reviewer notes, the infelicity of *same* here suggests that accessibility, rather than True Antecedent, is indeed the relevant notion.

Since *different* does not impose parallelism, it does not require a True Antecedent – this is something Hardt <u>et al.</u> (2012) failed to notice.

Under our analysis, the examples in (9) are indexed as in (11):

(11)   John didn't read *War and Peace*,

[NOT [John read *War and Peace^i*]^k]

     a.   but he read a different book

         [he read a^j different^i_j book]

     b. *but Susan read the same book

         [Susan read the^j same^k_l book]^l

     c.   but Susan read it

         [Susan read it$_i$]

For *different* and *it* the antecedent is given by *War and Peace*. For *same*, the intended antecedent is *John read War and Peace*, but the negation renders this antecedent inaccessible, accounting for the infelicity of *same*. Notice that on Brasoveanu's analysis, *same* would not be ruled out, since, like *different*, it merely requires an accessible NP antecedent, in this case *War and Peace*.[2]

Since we have explained these effects in terms of accessibility of the antecedent eventuality, these effects should also appear in other environments. For example, modals like *might* also block accessibility, as in the following example:

(12)   John might read *War and Peace*.

     a. *Mary read the same book.

     b.   Mary might read the same book.

Example 12(a) is infelicitous because the antecedent eventuality is under the scope of the modal, *might*. In 12(b) the antecedent is accessible because of modal subordination (Roberts (1987)): that is, both clauses are under the same modal operator.

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[2]If one countenances negative eventualities, then John not reading *War and Peace* is a possible antecedent eventuality for (11c). However, Parallel would not be satisfied because there is no non-trivial common property P that can be inferred from reading and not reading.

Parallel antecedent   The second observation, not made by Hardt <u>et al.</u> (2012), is that *same* requires the antecedent clause to be parallel to the containing clause, whereas *different* and pronouns make no such requirement. This is illustrated by the contrasts in (13).

(13)   John praised *War and Peace*.

    a.   And Bill read it.

    b.   But Bill read a different book.

    c.   *And Bill read the same book.

    d.   But Bill criticized the same book.

The examples in (13a) and (13b) are felicitous in this context, because all *it* and *different* require is that there be an accessible discourse referent, and there is one, namely *War and Peace*. This is not enough for *same*, however. We propose that *same* is ruled out in (13c), because Parallel is not satisfied by the antecedent clause *John praised War and Peace*. In particular, it is not possible to infer a common non-trivial P that subsumes *read* and *praised*. Compare (13c) to the felicitous (13d): here Parallel is satisfied because one can infer from the verbs *criticize* and *praise* a common non-trivial P, namely *evaluate*, with similar parallel elements *<John, Bill>* and *<War and Peace, the book>*.

Support for this difference between the verb pairs *praise–read* and *praise–criticize* comes from the data in (14), as pointed out to us by Bjarne Ørsnes. (The relevant reading of (14a) and (14b) is the one where *also* associates with the subject *Bill*.)

(14)   John praised *War and Peace*.

    a.   #And Bill also read it.

    b.   And Bill also evaluated it.

In (14b), the focus particle *also* requires the reader to accomodate the presupposition that someone else read *War and Peace*. If one could infer *read* from *praise*, it would be straightforward to accomodate this presupposition, since (14) would then give us *John read War and Peace*. The

fact that (14a) is degraded in the context of (14) thus shows that one cannot readily infer *read* from *praise*, which rules out *read* as a common relation for example (13c). The felicity of (14b) supports our claim that *praise* lets us infer *evaluate*.

Distinct antecedent   Hardt et al. (2012) observe that (15a) is most naturally read as describing a single fish-catching event, and on that reading, (15b) is infelicitous.

(15)   John caught a big fish,

      a.   and he caught it without any fishing equipment.

      b.   *and he caught the same fish without any fishing equipment.

In Hardt et al. (2012) this was explained by stipulating that *same* required distinct events. Here we propose that this too follows from the parallelism requirement: Parallel is not satisfied because $S2$ (= 15b) has a manner modifier, *without any fishing equipment*, which lacks a corresponding parallel element in $S1$ (= 15). Moreover, no such parallel element can be inferred in S1 without losing the single-event reading. To see this, consider the two obvious candidate inferences. The first is that we infer a contrasting manner for S1, e.g. with a fishing pole. Then Parallel would be satisfied, because we would have a common non-trivial P, namely *catch* with similar corresponding elements <*John*, *he*>, <*a big fish*, *the fish*> and <*with fishing pole*, *without fishing equipment*>. However, an eventuality fixes its participant, so a single eventuality cannot have two conflicting manner specifications, such as *with a fishing pole* and *without any fishing equipment*. So the reading that arises if we infer a contrasting manner specification for S1 is that there are two fishing eventualities. (15b) can indeed have this reading, though it is difficult to construe because it requires one to assume that John threw the fish back in the water and then caught it again.

The other relevant possibility is to infer *without fishing equipment* as the parallel element for S1. Then there is no conflict with a single eventuality reading, since all aspects of the eventuality are identical: < *John*, *he*>, <*a big fish*, *the fish*> and <*without fishing equipment*, *without fishing equipment*>. And yet (15b) lacks a single eventuality reading. We believe that this is due to a

more general restriction against asserting the exact same thing twice. Note that (16) where the manner inference in the first clause is made explicit is also not a coherent discourse:

(16)   #John caught a big fish without any fishing equipment and he caught it/a/the big fish without any fishing equipment.

The reason (15a) escapes this problem is that despite the *and*, the relation between the two clauses is not one of parallelism, but rather something like Elaboration.[3] This allows S2 to assert something more than S1 and thereby avoids the ban on asserting the exact same thing twice.

2.1   Previous literature

While our analysis draws most directly on the double indexing account of Brasoveanu (2011), there are also relevant connections to earlier literature on *same* and *different*, which we discuss below.

Heim (1985)   Heim's guiding intuition is that *same* and *different* are comparative operators. Where other comparative operators, like *-er*, compare individuals with respect to some property, *same* and *different* require individuals to be identical and non-identical, respectively:

(17)   "same <a,b> f" is true iff f(a) = f(b)   [= Heim's (31)]

(18)   "different <a,b> f" is true iff ∼f(a) = f(b)   [= Heim's (30)]

The individuals for comparison are determined by constructing a function f and applying it to each element in the pair <a,b>. In an example like (19), a and b are Susan and John and f is a function from individuals to the unique book read by that individual: $\lambda x \, \iota y \, read \, (x,y) \wedge book \, (y)$.

(19)   Susan read the same book as John.

The outcome is that (19) is true if and only if there is a unique book that Susan read and a unique book that John read and the two books are identical. An example like (20) (repeated from (1)) would receive the same truth conditions; it's simply that instead of being specified in an *as*-clause the b element (John) is recoved from the preceding clause.

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[3]See (Kehler 2004:250) for discussion of the relation between Elaboration and Parallel.

(20)   John read a book. Susan read the same book.

One thing that Heim's analysis shares with ours is that *same* operates on something larger than individuals. In our conception a set of eventualities; in Heim's conception a function from individuals to individuals. Consequently, Heim's analysis potentially captures some of the restrictions on *same* observed above. For instance, in the case of a negated antecedent in (11), the negation in the antecedent clause would rule out *War and Peace* as a book read by both John and Bill and since no other book reading by John has been asserted, the f function fails to return a book when applied to John and thus the identity condition imposed by *same* fails. Similarly for the parallel antecedent requirement illustrated in (13c): here no function f can be constructed because the two clauses do not share a predicate, and hence the identity condition fails, which explains why *same* is infelicitous.

Note that Heim's meaning for *different* is entirely analogous to that of *same*, differing only in negating the identity of f(a) and f(b). Consequently, Heim's analysis predicts that *different* should also be infelicitous with a negated or non-parallel antecedent, contrary to fact. In fact, Heim herself notes a contrast between *same* and *different* that is puzzling in this regard. When the *as*-clause directly specifies the identical or non-identical individual, *same* is degraded whereas *different* is felicitous, as shown in (21) and (22).

(21)   ?*Susan read the same book as *War and Peace*.   [cf. Heim's (33)]

(22)   Susan read a different book than *War and Peace*.   [cf. Heim's (29)]

In our view, (21) is infelicitous because the complement *as War and Peace* only introduces an individual, and hence there is no antecedent eventuality for *same* to index and hence the parallelism requirement fails. (22) is felicitous because *different* merely requires a non-identical individual-denoting antecedent and *War and Peace* delivers that. It is also instructive to compare (21) with (19), where *same* is felicitous. Here the *as*-clause lets us infer a parallel antecedent eventuality, namely John reading a book. And in (23) we can infer the existence of an individual-denoting antecedent for *different*, namely the book read by John (as also noted in Brasoveanu (2011:140)):

(23)   Susan read a different book than John (did).

What remains to be sorted out (for us and for Brasoveanu) is how exactly the complement phrase is folded into the semantic composition and how it fixes indexing in the required way.

To summarize, the problem with Heim's analysis is the inverse of the problem with Brasoveanu's analysis: under Brasoveanu's analysis neither *same* nor *different* is sensitive to anything but the availability of an antecedent NP, under Heim's analysis both are equally sensitive to the clausal context. The data above shows that neither is right: *same* is sensitive to the larger structure, *different* is not. In principle one could adapt either Heim or Brasoveau's analysis to account for this asymmetry. Here we choose to adapt Brasoveanu's analysis because it is more explicit and fully compositional and also because it coheres with our intuition that *same* and *different* are anaphoric.

Carlson (1987)   Carlson's central idea is that *same* and *different* operate on sets of eventualities. While this seems very similar to our proposal for *same*, he motivates this sensitivity to eventualities in a very different way from us and, perhaps consequently, overlooks the difference between *same* and *different* in this respect.

The focus of Carlson's paper is on so-called internal readings of *same* and *different*, which is the reading (24) and (25) have in isolation. He argues that the sentence-internal reading is made available by a distributive element like quantification (*two magazine subscriptions* in 24) or coordination (*Bob and Alice* in 25):

(24)   The same salesman sold me these two magazine subscriptions.   [= Carlson's (2b)]

(25)   Bob and Alice attend different classes.   [= Carlson's (2a)]

The distributive NP operates on a singular eventuality (a salesman sold me a magazine subscription, a student attends a class) and makes it into a plural one, that is, into a set of eventualities (p. 544). *same* operates on this set of eventualities to expresses identity, in (24) of the salesman participating in these eventualities. *Different* similarly operates on a set of eventualities but expresses distinction, in (25) of the classes involved in the relevant eventualities. Most of Carlson's paper is concerned with identifying restrictions on internal readings of *same* and *different*, including the range of distributive elements that can license internal readings, and restrictions on the configuration of licensor and dependent NP (i.e. the NP containing *same* or *different*). In these

respects *same* and *different* appear to be very similar and Carlson treats them in parallel. But, as we have seen above, if we pursue Carlson's intuition in the realm of external readings a different picture emerges: *same* exhibits an irreducible dependency on eventualities through a parallelism requirement, whereas *different* is no more dependent on eventualities than regular pronouns are. All that *different* and pronouns require is an individual-denoting antecedent. Such an antecedent can indeed be made available through an antecedent eventuality, because each eventuality comes with a set of participants, but the dependency does not hold in the opposite direction. Individual-denoting antecedents can be made available for anaphora without an associated eventuality being available for anaphora. This is exactly what the contrasts documented earlier in this section capitalize on. Note that no such contrasts can be replicated for internal readings, since there is no S1 that can be manipulated independently of S2.

Dowty (1985) Like Brasoveanu (2011) and us, Dowty (1985) pursues the intuition that *same* and *different* are anaphoric, and thus sensitive to the larger context. He does not use indexing or discourse referents, but rather posits two contextually determined variables. The first is a variable over properties, C, which recovers a comparison set, which functions somewhat analogously to <a,b> in Heim's analysis. The second is a variable over relations, R, which corresponds partly to the predicate of Heim's f function. Using these variables, Dowty proposes the following meaning for *same*:[4]

(26)   If α is a common noun, then [the same α] is a NP, which translates into:

$\lambda P.\exists z\ \alpha'(z)\ \&\ P(z)\ \&\ \forall y\ C(y) \rightarrow R(y,z)$

To see how this is intended to work, consider the example in (27), specifically the interpretation of the second conjunct *the students read the same book*.

(27)   The teachers read *War and Peace* and the students read the same book.

Here α is book and P is the property of being read by the students. The intention then is that the first conjunct (*The teachers read War and Peace*) fixes the values of C and R. Concretely, C

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[4]Due to type setting limitations, Dowty's actual proposal (in his (23)) uses punctuation in place of quantifiers and lambda. In (26) we have taken the liberty of recasting Dowty's formula in more standard notation and also renaming S as R to facilitate comparison with the discussion of Dowty's analysis in Barker (2007).

is resolved to the teacher property and R to the reading relation. With this much in place, the meaning in (26) yields the following truth conditions for the second clause: There is a book that is read by the students and all the teachers also read that book.

Noting the overlap between P and R, Dowty considers the possibility that the relation R could be fixed by the verb in the clause containing *same*, much like the predicate in Heim's f function is. Citing the example with *different* in (28) (= Dowty's (20a)), he rejects this possibility in favor of the contextual specification of both C and R for both *same* and *different*:

(28)   The teachers talked about *A Passage to India*, but the students saw a different movie.

Here the second clause specifies the *see* relation, but the first clause specifies the *talk-about* relation. Thus if R were determined by the containing clause, (28) would be true if and only if the students saw a movie different from all the movies **seen** by the teachers and that's not what (28) means. What Dowty fails to note is that a version of (28) with *same* in place of *different* is degraded:[5]

(29)   #The teachers talked about *A Passage to India*, and the students saw the same movie.

(29) is degraded even if there is contrastive focus on *talked about* and *saw*. In our view, Parallel is not satisfied, because *talked about* and *saw* are not similar enough; they do not have a non-trivial common predicate. This is the same point we made with respect to example (13); there we argued that Parallel was violated because *criticized* and *read* do not have a non-trivial common predicate.

Barker (2007) makes a related criticism of Dowty's analysis of *same* using the example in (30).

(30)   #The men discussed a house. John read the same book.

As Barker points out, Dowty's analysis lets us resolve R to discuss and C to men, yielding a reading for the second clause that says that there is a book that was read by John and discussed by the men. But no such reading is available. In fact, (30) is not a coherent discourse.

Note that our analysis of *same* avoids both of these problems. In the case of (29), Parallel fails because there is no non-trivial common relation P that subsumes *talk about* and *read*. In the case

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[5]The effect is even stronger if *talk about* is replaced by a verb that more strongly suggests causality like *assigned*.

of (30), there are two problems: first there is no antecedent for the definite description in the second clause. Second, the two clauses are not Parallel. This is illustrated by (31), where instead of *the same book* we have *a book*. This removes both the requirement for an antecedent NP and the requirement for a parallel clause, and the example is now acceptable, if somewhat disjointed without further context.

(31)   The men discussed a house. John read a book.

Barker (2007)   Barker's central claim is that *same* is a quantificational adjective, which needs to take scope over a property. This requires *same* to move to right below the distributive element that licenses the internal reading of *same*. Barker is only concerned with internal readings of *same* (and *different*) and explicitly argues against trying to unify the meanings of *same* and *different* in their internal and external uses, citing the problems with Dowty's analysis discussed above. Barker's analysis of *same* replicates the puzzle observed for Brasoveanu's analysis in the introduction: *same* does the semantic work normally associated with the definite article leaving nothing for the definite article to do.

3   External Readings

We have shown that there are striking differences between *same* and *different*, and we have suggested that these all derive from the fact that *same* compares eventualities, while *different* compares individuals. In this section we will show how this can be captured by modifying the account of *same* given in Brasoveanu (2011), while retaining Brasoveanu's account of *different*.

3.1   Brasoveanu's Account

We begin with the account of Brasoveanu (2011) for *different*. First, the meaning of *different* is as in (32) (from Brasoveanu (2011:111)):

(32) $\text{different}_{u_n}^m \rightsquigarrow \lambda P_{et}.\lambda v_e.P(v); *\underline{(P(u_{n+m}); [\textbf{disjoint}\{u_{n+m}, u_n\}])}$

The subscript u_n is the index of the CONTAINING NP. The superscript indicates the ANTECEDENT NP, by means of an *offset*; thus the index of the antecedent is $n + m$. For external readings, m will typically be negative, since the antecedent typically occurs in preceding discourse. (The offset might seem like a cumbersome way of indicating the antecedent, but it is motivated by the analysis of internal readings as we will see in Section 4.) As an adjective, *different* applies to an N whose meaning is a property P. The underlined material expresses a presupposition that P holds of the ANTECEDENT NP. Finally, it is required that the ANTECEDENT NP and CONTAINING NP are **disjoint**; for singular NP's, this simply means they are non-identical.

In (33) we illustrate the indexing that Brasoveanu's account of *different* gives rise to.

(33)   John^{u_1} read *War and Peace*^{u_2}, and Bill^{u_3} read a^{u_4} different$_{u_4}^{-2}$ book.

The CONTAINING NP for *different* has the index u_4, while the offset is -2. Thus the ANTECEDENT NP has the index u_2. This is translated into the following drs:[6]

(34) $[u_1, u_2 | u_1 = John, u_2 = war\text{-}and\text{-}peace, read\{u_1, u_2\}]$;

   $[u_3, u_4 | u_3 = Bill, book\{u_4\}]; *(\underline{book(u_{4-2})}; [\textbf{disjoint}\{u_2, u_4\}]); [read\{u_3, u_4\}]$

This captures the desired truth conditions, namely that Bill read some book that was not *War and Peace*, along with the presupposition that the antecedent, *War and Peace*, is a book. Note that the stack concatenation operator, *, plays no role here. It only comes into play under a distribution operator, which is required for internal readings. We will return to this in Section 4. The key point is that *different* merely compares two individuals and requires that they are non-identical.

Brasoveanu (2011:157) gives a completely parallel definition for *same*:

(35)   same$_{u_n}^m \rightsquigarrow \lambda P_{et}.\lambda v_e.P(v); *(\underline{P(u_{n+m})}; [\textbf{identical}\{u_{n+m}, u_n\}])$

Note that *same* leaves its nominal argument P unchanged; apart from the identity condition imposed on the antecedent, *same* is semantically vacuous. For many external readings, this gets the right result, as in (36) which results in the drs in (37):

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[6] We use the same drs notation as in Brasoveanu (2011), using linear boxes, with dynamic conjunction indicated by ;. Pronouns receive subscript indices indicating a dependence on context, while names and quantified NP's receive superscripts, indicating context change.

(36)   John^{u_1} read *War and Peace*^{u_2}, and Bill^{u_3} read the^{u_4} same$^{-2}_{u_4}$ book.

(37) $[u_1, u_2 | u_1 = John, u_2 = \textit{war-and-peace}, read\{u_1, u_2\}];$

   $[u_3, u_4 | u_3 = Bill, book\{u_4\}]; *(\underline{book(u_{4-2})}; [\textbf{identical}\{u_2, u_4\}]); [read\{u_3, u_4\}]$

The offset on *same* fixes *War and Peace* as the antecedent NP. The identity clause then requires the dref of the containing NP u_4 to be identical to that and the final drs requires Bill to stand in the reading relation to that dref.

3.2   New Proposal

Building on the observations in Section 2, we propose the following modifications of Brasoveanu's meaning for *same*: first, *same* compares eventualities rather than individuals. Second, the comparison is the discourse condition Parallel rather than a simple identity. Finally, we omit the presupposition that P holds of the antecedent (= $P(u_{n+m})$ in (35)). As discussed in the introduction, we believe that this presupposition comes from the definite article and not from *same*. This leaves us with the lexical meaning for *same* in (38).

(38)   same$^m_{e_n}$ $\rightsquigarrow \lambda P_{et}.\lambda v_e.P(v); *[\textbf{parallel}\{e_{n+m}, e_n\}]$

The subscript e_n indexes *same* to the containing eventuality and the antecedent eventuality is determined by adding the offset m to n. The discourse condition Parallel is applied to these two eventualities.

   On our proposal, (36) receives the following indexation and drs representation. Note that the condition that $u_5 = u_2$ is imposed by the definite article of the containing NP.

(39)   [John^{u_1} read *War and Peace*^{u_2}]^{e_3}, and [Bill^{u_4} read the^{u_5} same$^{-3}_{e_6}$ book.]^{e_6}

(40) $[u_1, u_2, e_3 | u_1 = John, u_2 = \textit{war-and-peace}, e_3 : read\{u_1, u_2\}];$

   $[u_4, u_5, e_6 | u_4 = Bill, book\{u_5\}, u_5 = u_2; e_6 : read\{u_4, u_5\}];$

   $*[\textbf{parallel}\{e_6, e_3\}];$

   Here the offset for *same* is one larger than the offset for *different* in the corresponding sentence. This is because the offset must take into account the added discourse referents for eventualities.

Eventuality-Variables   Our treatment of eventualities largely follows the treatment of event variables in Kamp and Reyle (1993:511). Unlike Kamp and Reyle, we use e variables for *eventualities*, which includes states as well as events.[7] We follow Kamp and Reyle's notation in that we prefix an eventuality variable to predications, so for example the event e_6 is prefixed to the predication as follows: $e_6 : read\{u_4, u_5\}$. This can be regarded as syntactic sugar for the Davidsonian representation $read\{e_6, u_4, u_5\}$. In this paper our only interest in eventualities is to impose the discourse condition Parallel, as defined in (3) above. We define a drs condition *parallel* as follows:

(41) $e_1 : R_1(a_1, \ldots, a_n) \wedge e_2 : R_2(b_1, \ldots, b_m) \wedge \mathbf{parallel}(e_1, e_2) \iff$

$\qquad Parallel(R_1(a_1, \ldots, a_n), R_2(b_1, \ldots, b_m))$

The drs condition *parallel* applies to e_3 and e_6. The internal structure of these eventualities is available from the rest of the drs, making it possible to determine a common relation P, namely *read*, and corresponding elements u_1 and u_4 (= John and Bill) and u_2 and u_5, which are required to be identical books by the definite article.

We now show how this revised meaning for *same* allows us to account for the differences observed in Section 2.

Negated antecedent   We begin with (42).

(42)   [**not** [John^{u_1} read *War and Peace*^{u_2}]^{e_3}],

     a.   but he$_{u_1}$ read a^{u_4} different$^{-2}_{u_4}$ book]^{e_5}.

     b. * but [Susan^{u_4} read the^{u_5} same$^{-3}_{e_6}$ book]^{e_6}.

     c.   but [Susan^{u_4} read it$_{u2}$]^{e_5}.

The following is the drs for the antecedent clause in (42):

(43) $[u_1, u_2 | u_1 = John, u_2 = \textit{war-and-peace}, \mathbf{not}[e_3 | e_3 : read\{u_1, u_2\}]]$

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[7]In fact Kamp and Reyle consider relying on a common type of *eventuality* as we do, citing Bach (1981).

The drefs u_1 and u_2 are introduced at the top level drs, because they represent names. However, the eventuality dref e_3 is introduced in the drs that is embedded under **not**. Because of this, e_3 is not accessible to subsequent discourse. (44) shows the drs for the continuation in (42a):

(44) $[u_4, e_5 | book\{u_4\}, e_5 : read\{u_1, u_4\}]; *(\underline{book(u_{4-2})}; [\textbf{disjoint}\{u_4, u_2\}])$

Here, *different* simply compares the drefs u_4 and u_2. There is no accessibility problem, since u_2 is introduced by the name *War and Peace* and is therefore accessible at the top level drs.

The drs for (42b) is as follows:

(45) $[u_4, u_5, e_6 | u_4 = Susan, book\{u_5\}, u_5 = u_2, e_6 : read\{u_4, u_5\}];$

   $*[\textbf{parallel}\{e_6, e_3\}]$

The problem here is that *same* must compare two eventualities, e_6 and e_3, but since e_3 is embedded under negation, it is not accessible. Finally, the drs for the continuation with a pronoun in (42c) is as follows:

(46) $[u_4, e_5 | u_4 = Susan, e_5 : read\{u_4, u_2\}]$

It is clear that this is acceptable: the pronoun is simply co-indexed with the accessible antecedent, u_2.

Parallel antecedent   Next we apply our analysis to the examples in (47) which further illustrate the role of the Parallel condition imposed by *same*.

(47) $[\text{John}^{u_1}$ praised *War and Peace*$^{u_2}]^{e_3}$,

   a.   And $[\text{Bill}^{u_4}$ read it$_{u_2}]^{e_5}$.

   b.   But $[\text{Bill}^{u_4}$ read a^{u_5} different$_{u_5}^{-3}$ book$]^{e_6}$

   c.   *And $[\text{Bill}^{u_4}$ read the^{u_5} same$_{e_6}^{-3}$ book$]^{e_6}$

   d.   But $[\text{Bill}^{u_4}$ criticized the^{u_5} same$_{e_6}^{-3}$ book$]^{e_6}$

We start with the drs for the antecedent clause in (47):

(48) $[u_1, u_2, e_3 | u_1 = John, u_2 = \text{war-and-peace}, e_3 : praise\{u_1, u_2\}]$

It's easy to see why the continuation in (47a) is acceptable, as it receives the following drs, where *it* is resolved to u_2:

(49) $[u_4, e_5 | u_4 = Bill, e_5 : read\{u_4, u_2\}]$

(47b) is also acceptable, since *different* merely requires an NP antecedent which is a book and **disjoint**:

(50) $[u_4, u_5, e_6 | u_4 = Bill, book\{u_5\}, e_6 : read\{u_4, u_5\}];$

   $*(\underline{book(u_{5-3})}; [\textbf{disjoint}\{u_5, u_2\}])$

However, (47c) is unacceptable. This is because *same* requires that eventualities e_6 and e_3 satisfy Parallel – but this fails, because *praise* and *read* have no non-trivial common relation.

(51) $[u_4, u_5, e_6 | u_4 = Bill, book\{u_5\}, u_5 = u_2, e_6 : read\{u_4, u_5\}];$

   $*[\textbf{parallel}\{e_6, e_3\}]$

We now turn to (47d), where the only change is the verb *criticized* instead of *read*. This is now acceptable, because *criticize* and *praise* have a non-trivial common relation, such as *evaluate*. Thus Parallel is now satisified.

(52) $[u_4, u_5, e_6 | u_4 = Bill, book\{u_5\}, u_5 = u_2, e_6 : criticize\{u_4, u_5\}];$

   $*[\textbf{parallel}\{e_6, e_3\}]$

Distinct antecedent   Finally we give the drs representations for (53), which illustrates the fact that *same* requires an antecedent that is a distinct eventuality.

(53) $[\text{John}^{u_1} \text{ caught a}^{u_2} \text{ big fish}]^{e_3}$,

   a.   and $[\text{he}_{u_1} \text{ caught it}_{u_2} \text{ without any fishing equipment}]^{e_4}$.

   b.   *and $[\text{he}_{u_1} \text{ caught the}^{u_4} \text{ same}_{e_5}^{-1} \text{ fish without any fishing equipment}]^{e_5}$.

The following is the drs for the antecedent clause in (53):

(54) $[u_1, u_2, e_3 | u_1 = John, fish(u_2), big(u_2), e_3 : caught\{u_1, u_2\}]$

The following is the drs for the continuation in (53a), which is acceptable:

(55) $[e_5 | e_5 : caught\{u_1, u_2, without\text{-}equipment\}]$

(56) gives the drs for the infelicitous continuation with *same*):

(56) $[u_4, e_5 | fish(u_4), u_4 = u_2, e_5 : caught\{u_1, u_4, without\text{-}equipment\}];$

         $*[\textbf{parallel}\{e_5, e_4\}]$

Here we can see that Parallel fails. We can see that e_5 is *caught(u_1, u_4, without-equipment)*, and e_4 is *caught(u_1, u_4)*. Thus Parallel fails because there are not similar parallel elements, and for the reasons discussed in Section 2 no parallel element can be inferred without either losing the single-event reading or asserting the same thing twice.

Parallel and Maximal Common Theme   The basic principle of parallelism is a requirement for common material – we have seen that Parallel fails when there is not sufficient common material between the two structures that are supposed to be parallel. A natural application of this involves the resolution of ambiguities in parallel structures: in general, there is a preference that ambiguities be resolved in a way that maximizes common material. Asher (1993) introduces Maximal Common Theme (MCT) to capture this: there is a general preference that any interpretative choices be made to maximize common material between two parallel structures. This condition is applied and extended in various works, including Asher et al. (2001), Asher and Lascarides (2003) and Hardt et al. (2013). Furthermore, similar ideas can be found in many other approaches to the theory of discourse and parallelism, including Hobbs (1979), Kehler (2002), Hobbs and Kehler (1997) and Prüst et al. (1994).

The general definition of MCT is as follows: consider two parallel sentences S1 and S2, and assume there is one interpretation of S1, $S1'$, while S2 is ambiguous between $S2a'$ and $S2b'$. To choose between $S2a'$ and $S2b'$, we determine for each, how much common material they have with $S1'$ – that is, we find common themes. Call the common theme of $< S1', S2a' >$ CTa, and the common theme of $< S1', S2b' >$, CTb. If CTa $>$ CTb then $S2a'$ is preferred. For formal

definitions of the mechanism for determining common material, see the above cited works. What is of particular interest here is that MCT enforces a preference that corresponding referential elements co-refer in parallel structures. This is why it might appear that *same* is imposing an individual-level identity – it involves a parallelism constraint that in turn gives rise to a preference that the NP hosting *same* is identical to the corresponding NP in the parallel structure.

The following discourse illustrates the relevance of MCT for external readings with *same*:[8]

(57)   Mary's favorite book is *War and Peace$_i$*. She writes about *Moby Dick$_j$*, though. John writes about the$_{*i/j}$ same book.

The second and third sentences are parallel. "The same book" has two potential antecedents, although in fact the antecedent *Moby Dick* is strongly preferred. This follows from MCT. Consider the two possibilities:

(58)   CT1 = CT(Mary writes about *Moby Dick*, John writes about *Moby Dick*) = someone writes about *Moby Dick*

(59)   CT2 = CT(Mary writes about *Moby Dick*, John writes about *War and Peace*) = someone writes about a book

Since CT1 > CT2, we prefer the *Moby Dick* reading, as desired. Note that we observe the same preference in the following variant, without *same*, where *too* imposes a parallelism constraint.

(60)   Mary's favorite book is War and Peace$_i$. She writes about *Moby Dick$_j$*, though. John writes about that$_{*i/j}$ book, too.[9]

There are also cases where *same* gives rise to an MCT preference that gives a different interpretation than observed without *same*, as in the following:

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[8]Thanks to an **L&P** reviewer for bringing this example to our attention, and suggesting that parallelism is relevant to its interpretation.

[9]Note that we have replaced "the same book" with "that book", rather than "the book", which we find somewhat infelicitious in (60). We suspect that this has to do with the fact that there is more than one potential referent for "that book". Hawthorne and Manley (2012) and Nowak (2014) hold that the basic semantic role of complex demonstratives like "that book" is to pick one individual out of a set of candidates. Nowak (2014) explains this fact by claiming that "that" requires a second "hidden" argument that restricts the extension of the first argument. Similar remarks are relevant for example (61), where we also replace "the same book" with "that book", rather than "the book".

(61)   John assigned War and Peace$_i$ to a student who liked Moby Dick$_j$. Tom assigned the$_{i/*j}$ same book to a student who liked Great Expectations$_k$.

(62)   John assigned War and Peace$_i$ to a student who liked Moby Dick$_j$. Tom assigned that$_{i/j}$ book to a student who liked Great Expectations$_k$.

In (61), *the same book* must refer to *War and Peace*, because *same* requires parallelism between the two sentences, and thus MCT generates a preference for corresponding elements to be identified. In (62), *that book* can refer either to *War and Peace* or *Great Expectations*.

4   Internal Readings

In our view, *same* and *different* are anaphoric, in that they both require an antecedent expression. Up to this point we have focused on external readings, in which the antecedent is found in prior discourse. We now turn to internal readings, where there is no explicit antecedent expression. Instead, there must be a distributive expression which licenses *same* or *different*.

In Section 3 we have argued that *same* compares eventualities rather than individuals, and we have shown how this can be implemented in a modified version of Brasoveanu's account. One virtue of Brasoveanu's account is that it applies to internal as well as external readings. In this section, we show that our modified account also has this virtue.

4.1   Brasoveanu's Account

We begin with the account of internal readings from Brasoveanu (2011:53,(ex. 269)).

(63)   Every^{u_0} boy read the^{u_1} same$^2_{u_1}$ poem.

Intuitively, the interpretation of (63) is this:

(64)   for every pair of boys b_1 and b_2 and pair of poems p_1 and p_2 such that b_1 read p_1 and b_2 read p_2, $p_1 = p_2$

To capture this, Brasoveanu defines a distribution operator that distributes over pairs of individuals, and then gives *same* and *different* the ability to access such pairs. As we saw in Section 3, Brasoveanu gives the following meaning for same:

(65) $\quad$ $\text{same}^m_{u_n} \rightsquigarrow \lambda P_{et}.\lambda v_e.P(v); *(\underline{P(u_{n+m})}; [\textbf{identical}\{u_{n+m}, u_n\}])$

On Brasoveanu's account *same* compares a CONTAINING NP with an ANTECEDENT NP. The challenge for internal readings is that there is no explicit antecedent for *same*. To address this, Brasoveanu posits a distribution operator which allows comparison of individuals within the domain of quantification.

To understand how this works, consider the drs for (63):

(66) $\quad$ $\textbf{max}^{u_0}([\textbf{atoms-only}\{u_0\}, boy\{u_0\}]);$

$\quad\quad$ $\textbf{dist}_{u_0}([u_1|\textbf{atoms-only}\{u_1\}], \textbf{singleton}\{u_1\}, poem\{u_1\};$

$\quad\quad$ $*((\underline{poem(u_{1+2})}; [\textbf{identical}\{u_{1+2}, u_1\}]); [read\{u_0, u_1\}]))$

The contribution of *every boy* is the maximal set of boys, while the *dist* operator tests each element of that set to see that it satisfies the nuclear scope. In doing this *dist* in fact examines all pairs of elements, call them boy_1 and boy_2, and checks each element to see that it satisfies the nuclear scope, which itself involves an update, namely a poem associated with each boy – these boy-poem pairs are termed *stacks*. In this example each stack has length 2; in general they can be of any length. Thus *dist* checks every pair of stacks, s_1 and s_2, to ensure that both s_1 and s_2 satisfy the nuclear scope. Resorting to pairs has no truth-conditional effect, and indeed the second element in these stack pairs is systematically ignored in Brasoveanu's fragment, with the exception of internal readings for *same*, *different*, and related expressions. These expressions make use of the stack-concatenation operator, $*$, which examines its two input stacks, and concatenates them. The concatenated stack can then be used to compare two analogous individuals, using the offset, which is the length of the input stacks.

u_0	u_1		u_0	u_1		u_0	u_1	u_2	u_3
boy1	poem1	$*$	boy2	poem2	$=$	boy1	poem1	boy2	poem2
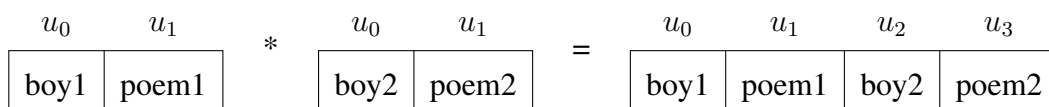
The resulting stack makes available two discourse referents, u_1 and u_3; in the drs above, the **identical** condition is placed on these two discourse references, as desired. The distribution operator ensures that all possible pairs of stacks will be compared, which in this case means that all pairs of boys read the identical poem.

4.2 Proposed Account

We have argued with respect to external readings, that *same* must compare eventualities rather than individuals. We showed that this accounts for a number of cases where the ANTECEDENT CLAUSE differed from the CONTAINING CLAUSE, and we claimed that these two clauses must satisfy the discourse relation of Parallel.

In this section we will examine internal readings in the light of our proposal. Below is our proposed meaning for *same*, repeated from Section 3.

(67) $\text{same}_{e_n}^m \rightsquigarrow \lambda P_{et}.\lambda v_e.P(v); *[\textbf{parallel}\{e_{n+m}, e_n\}]$

This meaning can be directly applied to internal readings, as shown in (68):

(68)   [Every^{u_0} boy read the^{u_1} same$_{e_2}^3$ poem.]^{e_2}

With this indexing, the subscript for *same*, e_2, indexes the containing S, rather than the containing NP as in Brasoveanu's system. Other than that, the analysis proceeds in exactly the same way; the superscript on *same* is the offset, which is the size of the stack. Then, by using the *stack concatenation* operator $*$ below, the drs allows *same* to impose Parallel on two instantiations of the eventuality, $[read\{u_0, u_1\}])$.

(69) $\textbf{max}^{u_0}([\textbf{atoms-only}\{u_0\}, boy\{u_0\}]);$

         $\textbf{dist}_{u_0}([u_1, e_2|\textbf{atoms-only}\{u_1\}], \textbf{singleton}\{u_1\}, poem\{u_1\}), e_2 : read\{u_0, u_1\};$

         $*[\textbf{parallel}\{e_{2+3}, e_2\}])$

u_0	u_1	e_2
boy1	poem1	read(boy1, poem1)

$*$

u_0	u_1	e_2
boy2	poem2	read(boy2, poem2)

$$= \quad \begin{array}{|c|c|c|c|c|c|} \hline u_0 & u_1 & e_2 & u_3 & u_4 & e_5 \\ \hline \text{boy1} & \text{poem1} & \text{read(boy1, poem1)} & \text{boy2} & \text{poem2} & \text{read(boy2, poem2)} \\ \hline \end{array}$$

Consider the condition $\mathbf{parallel}\{e_{2+3}, e_2\}$. This gives rise to the Maximal Common Theme condition, which in turn generates a preference that corresponding elements are identified – in particular, there is a preference in the above that poem1 = poem2. Note that MCT also generates a preference that boy1 = boy2; however, this preference cannot be satisfied, as it conflicts with the requirements of the distribution operator.

In this example, it is somewhat difficult to discern the interpretive effect of *same*, since when *same* is removed ("Every boy read the poem"), the interpretation seems to be the same – there is one poem read by each boy. There is a clearer difference with negative quantifiers, as in the following variants of (63):[10]

(70)   No^{u_0} boy read the^{u_1} same$^2_{u_1}$ poem.

(71)   No^{u_0} boy read the^{u_1} poem.

In both examples, we have a definite NP without a salient antecedent in context – otherwise we would be dealing with an external reading. So for both examples accomodation is required – the definite NP generates a presupposition about the existence of a poem. For (71), the most natural reading is that there is one particular poem (perhaps it was assigned for homework) and this particular poem was not read by any of the boys. In this case, the presupposition is accomodated at the top-level drs, as shown below, where the accomodated material is underlined:

(72) $[\underline{u_1}|\underline{poem\{u_1\}}]; \mathbf{max}^{u_0}([\mathbf{atoms\text{-}only}\{u_0\}, boy\{u_0\}]);$

       $\mathbf{dist}_{u_0}(not([e_2|\mathbf{atoms\text{-}only}\{u_1\}]), \mathbf{singleton}\{u_1\}, e_2 : read\{u_0, u_1\};$

For (70), the most natural reading is that there is no poem which was read by two boys. [11] Here the presupposition is not accomodated at the top-level, but in the embedded drs:

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[10]Thanks to an **L&P** reviewer for suggesting this example, together with a discussion of its implications for our analysis.

[11]Another theoretically derivable reading is one in which "the same poem" is accomodated globally. An **L&P** reviewer points out that this reading does not appear to be possible. We agree, although we do not have an explanation for this.

(73) $\mathbf{max}^{u_0}([\mathbf{atoms\text{-}only}\{u_0\}, boy\{u_0\}]);$

$\mathbf{dist}_{u_0}(not([\underline{u_1}, e_2 | \mathbf{atoms\text{-}only}\{u_1\}], \mathbf{singleton}\{u_1\}, \underline{poem\{u_1\}}), e_2 : read\{u_0, u_1\};$

$*[\mathbf{parallel}\{e_{2+3}, e_2\}]))$

u_0	u_1	e_2
boy1	poem1	read(boy1, poem1)

$*$

u_0	u_1	e_2
boy2	poem2	read(boy2, poem2)

$=$

u_0	u_1	e_2	u_3	u_4	e_5
boy1	poem1	read(boy1, poem1)	boy2	poem2	read(boy2, poem2)

Just as with example (63), there is a preference that poem1 = poem2. This preference results from MCT, which is imposed because of the condition $\mathbf{parallel}\{e_{2+3}, e_2\}$. This is the desired reading: there is no poem that was read by a pair of boys. Because of MCT, this is preferred over a reading where the poems are not identified; on this reading, no boys read any poems at all. In fact this reading is not merely dispreferred, it is, in our judgement, impossible. One way to address this is to revise our view of MCT, so that, instead of generating a preference for maximal readings, it rules out non-maximal readings. We will leave further consideration of this issue to future work.

5   Further Issues

5.1   Untensed Eventualities

An additional issue is raised by example (74), discussed at length in Barker (2007:(20)).

(74)   [Two men with the same name] are sitting in this room.

In our view, what this example shows is that eventuality variables can be introduced into the drs without a tensed verb. So in addition to a variable associated with the state of *sitting*, we posit a variable associated with the state of *having a name*, as shown in the following drs:

(75) $[u_0 | \mathbf{2\text{-}atoms}\{u_0\}, men\{u_0\}]);$

$[u_1 | name(u_1)]; \mathbf{dist}_{u_0}(*[e_2 : with\{u_0, u_1\}, e_1 : sitting\{u_0\}, parallel\{e_{2+4}, e_2\}])$

This is similar to the drs given by Brasoveanu (2011:54), example (274), with the following modifications: first, the condition $with\{u_0, u_1\}$ receives an eventuality variable e_2, and the condition $sitting\{u_0\}$ receives an eventuality variable e_1. Our analysis then proceeds as in previous examples such as (63): we impose the **parallel** condition on eventualities instead of the **identical** condition imposed on individuals, as Brasoveanu does. In this case, **parallel** is imposed on the eventualities e_{2+4} and e_2.

As Barker points out in a critique of Carlson's account (Carlson, 1987), example (74) shows that *same* "…does not require any direct reference to events …" (Barker 2007:409). Since our account includes states as well as events, this problem does not arise for us; indeed in our view it was not Carlson's intention to rule out states in his account, as indicated by the following quote: " I will focus on events as a matter of terminological convenience; however, I wish to also include the need for token states and processes (and possibly other aspectual categories as well, as needed)." (Carlson 1987:539)

Thus our analysis of examples like (74) simply highlights the fact that we are following Carlson in taking a broad view of what constitutes an eventuality, and therefore what counts as a parallel eventuality that can license *same*. Furthermore, we can observe parallelism effects with eventualities associated with *with-clauses*, as illustrated by the examples (76) through (79).

(76)   A man with *War and Peace* talked to a woman who really liked that book.

(77)   *A man with *War and Peace* talked to a woman who really liked the same book.

(78)   A man with *War and Peace* talked to a woman with the same book.

(79)   A man with *War and Peace* talked to a woman carrying the same book.

This illustrates the parallel antecedent effect we discussed in Section 2. Example (76) does not require parallelism since *same* does not occur. When "that book" is replaced with "the same book" in (77), infelicity results. This is because of the lack of parallelism between "with *War and Peace*" and "really liked the same book". In (78) there are two completely parallel *with-clauses*, and the example is felicitous. (79) is also felicitous; although the with-clauses are not identical, they entail a non-trivial common property, namely, *be-in-possession-of*.

We also observe the negated antecedent effect in examples (80) and (81):

(80)   A man without *War and Peace* talked to a woman with *War and Peace*/the book.

(81)   *A man without *War and Peace* talked to a woman with the same book.

Example (81) is unacceptable, because the eventuality containing *same* requires a parallel antecedent, and because of the negation, there is no parallel antecedent.

Taken together, these examples provide strong support for the broad view of eventualities and associated variables.

5.2   Definiteness and Relational Nouns

In this paper we have pointed to many examples where *same* is unacceptable but *different* is acceptable. In all of these examples, *same* is ruled out by violations of Parallel. These differences only arise with external readings. The following example (due to Simon Charlow, p.c.) is a case where *same* is ruled out (or degraded) with an internal reading, while *different* remains acceptable.

(82)   #Everyone has the same friend.

(83)   Everyone has a different friend.

Note, furthermore, that the contrast in acceptability remains if we remove *same* and *different*:

(84)   #Everyone has the friend.

(85)   Everyone has a friend.

Landman and Partee (1987) and Partee (1999) have observed that "relational have" sentences like (82) - (85) require indefinites or other weak quantifiers, and in that way resemble existential-there contexts. This provides support for the general claim that the definite article receives its normal interpretation when appearing together with *same*.

5.3 Licensing Expressions for Internal Readings

In our approach to internal readings, we have followed Brasoveanu (2011) in requiring an explicit distributive expression to license the internal reading. However, Brasoveanu also points out that there are important differences between *same* and *different*, as well as other related expressions.[12] For example Brasoveanu (2011) observes the following difference in the licensing expressions for *same* and *different*: while *different* requires an explicitly distributive expression like *every boy*, *same* and plural *different* are also licensed by plurals and conjoined NP's, as shown by the following examples:

(86)   Every boy read the same book/a different book/different books.

(87)   The boys read the same book/*a different book/different books.

(88)   Susan and Bodil read the same book/*a different book/different books.

Brasoveanu's solution is to provide a distributive operator as part of the lexical representation of *same* and plural *different*, but not for singular *different*. For example, Brasoveanu (269) provides the following alternative representation for *same*:

(89) $\text{same}_{u_n}^m \rightsquigarrow \lambda P_{et}.\lambda v_e.P(v); dist_{u'_n}*\underline{(P(u_{n+m})}; [\textbf{identical}\{u_{n+m}, u_n\}])$

This solution could also be adopted for our account, with the usual difference that the identity condition is replaced with parallel:

(90) $\text{same}_{u_n}^m \rightsquigarrow \lambda P_{et}.\lambda v_e.P(v); dist_{u'_n}*[\textbf{parallel}\{e_{n+m}, e_n\}])$

Brasoveanu considers this issue at some length, describing a range of differences in the licensing of plural and singular *same* and *different* and other related expressions. We simply observe here that the solution proposed by Brasoveanu, in which an explicit distribution operator is added to the lexical meaning, is completely consistent with our proposal.

We turn now to yet another way in which internal readings can be licensed: namely, what (Barker 2007:433) calls *non-NP triggers*. For example, in (91), the internal reading of *same* is licensed by a distribution over the coordinated verbs *read* and *reviewed*:

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[12]Thanks to an **L&P** reviewer for pointing out that the nature of the licensing expression is more complicated than we have indicated up to this point.

(91) John read and reviewed the same book.

Barker uses a continuation-based system of derivation, which makes it possible to lambda abstract over any category. Such a category can be a licensor for *same*, according to Barker, as long as "it provides a denotation suitable for distributing over." (Barker 2007:433)

We concur with Barker (and Carlson), that licensing expressions of many categories are possible, and that a continuation-based system can accomodate this. We see this issue as orthogonal to our proposal, which primarily concerns the semantics of same and different; our proposed meanings could easily be integrated with a derivation system, like Barker's, in which licensors of various types are permitted.

Barker notes a further observation, attributed to (Carlson (1987)), which is of particular relevance here. Consider the following examples:
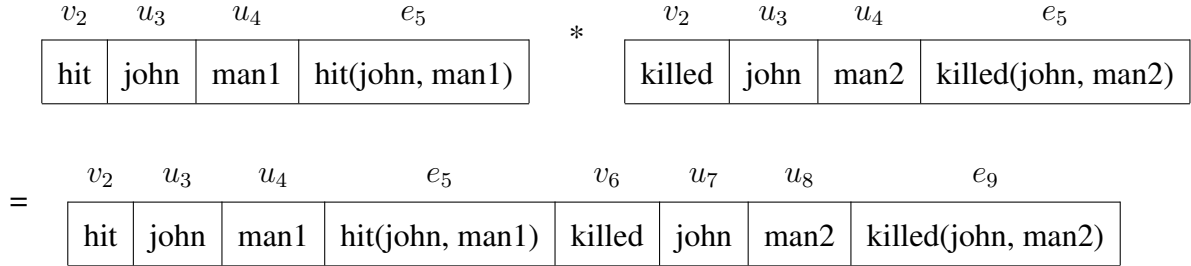
(92) John hit and killed Goliath.

(93) John hit and killed the same man.

In (92), there is one reading where there are two separate events, a hitting event, and a killing event. Another possible reading has a single event, where the hitting was the event in which Goliath was killed. Barker notes that (93) lacks the single event reading, and notes that "this is what we would expect if the quantification built into the meaning of same behaves like normal quantification, which always quantifies over distinct elements in any domain." (Barker 2007:434) However, it is not clear how this explains the constraint against a single-event reading. In this example, there is quantification over distinct elements in the domain of transitive verb meanings, and the meanings of *hit* and *killed* are distinct, whether or not they are both describing a single event or multiple events. There is no comparison of events in Barker's system.

On the other hand, we suggest that this requirement emerges in a natural way in our approach, where there is explicit representation of eventualities. Let us assume that (93) receives the following drs representation:

(94) $[v_0, v_1, v_2 | v_0 = \textbf{hit}, v_1 = \textbf{killed}, v_2 = v_0 \bigcup v_1]$;

$$\mathbf{dist}_{v_2}([u_3, u_4, e_5 | john\{u_3\}, man\{u_4\}, e_5 : v_2\{u_3, u_4\};$$

$$*[\mathbf{parallel}\{e_{5+4}, e_5\}])$$

v_2	u_3	u_4	e_5
hit	john	man1	hit(john, man1)

$*$

v_2	u_3	u_4	e_5
killed	john	man2	killed(john, man2)

$=$

v_2	u_3	u_4	e_5	v_6	u_7	u_8	e_9
hit	john	man1	hit(john, man1)	killed	john	man2	killed(john, man2)

The condition **parallel** is applied to the two eventualities, e_5 and e_9. As we also argued in Section (2), it is our view that the Parallel condition quite generally includes a requirement that the two eventualities are distinct. Since it is *same* that introduces the parallelism requirement, this explains the fact that (92) allows the same-event reading, while (93) does not.

5.4 Apparent Island Effects

It has frequently been suggested that *same* and *different* are subject to island constraints. For example, Carlson (1987) claims that "the licensing NP must appear within the same scope domain as the dependent expression". We accept this general view as it applies to internal readings: the dependent expression (*same* or *different*) cannot appear within an island if the licensing NP is outside the island. The following examples provide support for this.

(95)   Everyone knows why Mary read *the same book/*a different book.   [wh-island]

(96)   Everyone rejected the claim that Mary read *the same book/*a different book.   [complex NP island]

(97)   Everyone laughs when Mary reads the *same book/*a different book. [adjunct island]

For accounts like that of Heim (1985) or Barker (2007), where *same* and *different* move to the same level as the licensing NP, the island effects might follow from syntactic constraints on that movement. We follow Brasoveanu (2011) in giving an *in-situ* account – there is no movement of *same* and *different*. Brasoveanu (2011:114) suggests an alternative explanation, namely

"...that the operators intervening between distributive quantifiers and *different* override the second member of the pair of stacks contributed by distributors but leave the first member of the pair untouched. This will ensure that sentence-internal readings are disrupted, but not bound readings." Brasoveanu does not work out this suggestion in any detail, and indeed Bumford and Barker (2013) point to additional complications involving multiple potential licensing NP's. However, this view has an interesting consequence, which was not pointed out by Brasoveanu: since the island effects are associated with the multiple stacks required for internal readings, these effects should disappear in the case of external readings.

This, in our view, is correct. This can be clearly observed with *different*; the external counterparts to examples (95) - (97) are all acceptable.

(98)   John knows why Mary read *War and Peace*. Peter knows why she read a different book. [wh-island]

(99)   Peter rejected the claim that Mary read *War and Peace*. John rejected the claim that she read a different book.   [complex NP island]

(100)   John laughs when Mary reads *War and Peace*. Harry laughs when she reads a different book.   [adjunct island]

Although the situation is less clear with *same*, we will argue that *same* is also free of island constraints in external readings. At first glance this would appear to be contradicted by the counterparts to examples (95) - (97), which all seem somewhat degraded.

(101)   ??John knows why Mary read *War and Peace*. Peter knows why she read the same book. [wh-island]

(102)   ??Peter rejected the claim that Mary read *War and Peace*. John rejected the claim that she read the same book.   [complex NP island]

(103)   ??John laughs when Mary reads *War and Peace*. Harry laughs when she reads the same book.   [adjunct island]

In our view, these observations are not the result of island violations; rather, we suggest that they have to do with violations of Parallel. In support of this, we observe that these examples have a rather intermediate quality, and not as bad as the internal readings. Furthermore, it is possible to construct more acceptable variants, while the syntactic island remains the same:

(104)   First Peter rejected the claim that Mary read *War and Peace*. Later he accepted the claim that she had read the same book.

(105)   Last week, John laughed when Mary recited Green Eggs and Ham. Yesterday, Harry laughed when she recited the same book.[13]

While many authors have observed island constraints on *same* and *different*, it has not been previously noted that internal and external readings differ sharply in this regard: we have suggested that island constraints only apply to internal readings. This lends support to the suggestion of Brasoveanu that the island constraints only arise when pairwise comparisons under distribution are required.

6   Conclusion

There is a tradition in the literature to treat *same* and *different* as completely analogous, differing only in expressing identity or distinction. This is reflected in the title of Carlson's early influential paper, "Same and Different", and as far as we are aware, this analogous treatment of *same* and *different* has persisted in all subsequent investigations. In this paper, we have shown that this is a misunderstanding: *same* is fundamentally different from *different*, in that it imposes a discourse condition on eventualities, while *different* compares individuals. Furthermore, in the literature on *same*, there has been a persistent puzzle about the contribution of the definite article with which *same* must co-occur. We show that this puzzle is resolved once the contribution of *same* is adjusted to apply to eventualities: then the definite article can be interpreted in the usual way, as generating a presupposition about individuals.

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[13]While we find these variants much improved, (104) has a more concise variant that seems preferable: "…he accepted the same claim". This is perhaps similar to the MaxElide constraint (Merchant, 2008), in which the existence of a more concise variant can cause an otherwise acceptable structure to be degraded or unacceptable.

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