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Discourse properties of *now*[1]

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This paper proposes an updated analysis of the uses of *now* to modify past-tense clauses in narratives. It is by now well known that indexical expressions such as *now* are not as rigid as previously thought and can shift in some contexts (e.g. a literary style like Free Indirect Discourse in English or under report verbs in some languages). What is interesting about shifted *now* is that its distribution is much broader than these limited contexts. The conditions under which it can shift, however, are unclear and still under debate. Many recent proposals have tried to derive this property from the lexical meaning of *now*, thus treating it as a special case. Unlike previous analyses, I argue that the temporal perspective shift and temporal relations are functions of narrative discourse itself rather than the lexical semantics of *now*. The lexical meaning of *now*, I contend, is that it refers to a contextually salient time, regardless of whether it derives from actual speech context or discourse context. In addition, *now* invariably indicates a change of state, denoting the turning point dividing the past and the future seen from this contextually salient time. My claim is based on a quantitative study of naturally occurring narrative examples from the British National Corpus, and formalized in the discourse-level formal framework of Discourse Representation Theory.

KEYWORDS: Discourse Representation Theory, narrative discourse, *now* in past tense clauses, perspective shift

1. INTRODUCTION

1.1 *Previous studies*

Recently, much attention has been paid to the temporal adverbial *now* occurring with the past tense in narrative discourses. In such a case, *now* does not behave like a typical indexical expression[2] because it cannot denote the speech time (Kamp & Rohrer 1983; Kamp & Reyle 1993; Recanati 2004; Lee & Choi 2009; Altshuler 2010; Hunter 2010, 2012). In order to give a unified semantics for its indexical and narrative uses, Kamp & Reyle (1993: 595) assume that *now* refers to a time

[1] I thank the editor and the three anonymous referees of the *Journal of Linguistics* for their valuable comments on earlier versions of the paper. I also thank Mark Nathan for editing the paper.

[2] Natural language expressions whose denotation depends on the extra-linguistic speech context are called indexicals. They include first and second person pronouns *I* and *you*, demonstratives *this* and *that*, and adverbials referring to the time and place of utterance like *now* and *here*, among others.

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interval that overlaps THE TIME OF PERSPECTIVE from which the described event is viewed. The temporal perspective point can be either the speech time, as in (1a), or a past reference time, as in (1b).

(1) (a) John is eating breakfast **now**.

(b) Finally, at six o'clock, Mr. Johnson started to speak. **Now** there were only ten people left in the room.

In the case of (1b), the perspective shifts to the reference time of the last sentence in the simple past, and the situation is viewed from that temporal location (Kamp & Rohrer 1983).

Kamp & Reyle (1993) further assume that *now* may combine with state predicates only when it occurs with the past tense in narrative, imposing a temporal overlap relation with a situation described by a prior sentence. The intuitive reason is that "when one describes something as going on at the time of the description, one must describe it as just that, viz. as something that is then going on" (Kamp & Reyle 1993: 596). Altshuler (2010) makes a similar claim, requiring overlap between the time denoted by *now* and the time of the antecedent event. Like Kamp & Reyle, he also assumes that *now* only combines with state predicates.[3]

However, this claim has been empirically challenged as *now* can occur with telic event descriptions[4] that temporally follow the reference event (Lee & Choi 2009, Hunter 2010), as in (2), for example.

(2) Someone touched his elbow so timidly that he thought it had been accidental, until the gesture was repeated with more insistence. **Now** he **turned** and saw Nebamun walking beside him.

(from the British National Corpus, cited in Lee & Choi 2009: 101)

Furthermore, *now* occurring in a sentence which describes a state does not invariably describe a situation that overlaps with its antecedent event, either. Consider the sentences in (3).

(3) (a) Jameson entered the room, shut the door carefully, and switched off the light. It was **now** pitch dark around him because the Venetian blinds were closed.

(modified from Hinrichs 1986: 68)

(b) Irene missed me so much that she drove from Tarifa to see me. All she wanted to do **now** was to take me back with her.

(Altshuler 2010: 263)

[3] Altshuler (2010) acknowledges examples like (2), but treats *now* there differently, calling it a 'broadcasting *now*'. Thus, he assumes a lexical ambiguity of the single adverb *now*.

[4] Event descriptions are further divided into telic and atelic: if a verb has an inherent endpoint (e.g. *build* (*a house*), *die*), then it is telic. Atelic verbs lack a built-in endpoint, e.g. *run.*

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We naturally infer from (3a) that it became pitch dark only after Jameson turned off the light. (3b) does not exclude the interpretation that Irene's desire arose only after she went to see the speaker.

Moreover, Kamp & Reyle and Altshuler leave unexplained the question of when and why the temporal perspective shifts. Recanati (2004) and Hunter (2010) answer these questions by claiming that the notion of CONTRAST is essential for the use of *now* with the past tense. They argue that the use of *now* emphasizes a certain time and contrasts it with alternative times. While Recanati (2004) lays down only a very liberal constraint, such that *now* can refer to a past time as long as the time is contrasted with another time that is farther than the time *now* refers to in a relative sense, Hunter (2010) requires of the lexical entry of *now* that the modified eventuality not hold before and after the time referred to by *now*.

Hunter (2012), on the other hand, abandons the idea that a contrast between two times is a lexical requirement of *now* and instead argues that RHETORICAL RELATIONS play a crucial role in the use of *now*. She employs Segmented Discourse Representation Theory (SDRT; Lascarides & Asher 1993, 2007; Asher & Lascarides 2003), which postulates a hierarchical discourse structure in which utterances are connected in terms of subordinating or coordinating rhetorical relations. In SDRT, a new clause α can be attached to another clause β in discourse in a subordinating relation such as BACKGROUND, EXPLANATION or ELABORATION, or a coordinating relation such as NARRATION or CONTRAST.[5] Hunter (2012: 378) claims that *now* triggers a presupposition that must be bound to the time of its IMMEDIATELY SUPERORDINATE ANTECEDENT clause. She argues that, if the clause containing *now* and its superordinate antecedent clause are connected through a subordinating relation, the time denoted by *now* must be 'as close as possible to identity' to the time of the antecedent clause depending on a particular rhetorical relation. For example, because EXPLANATION does not allow for the times to be identical (since causes invariably start before their effects), the use of *now* is subject to the relation of temporal overlap where the

[5] The definitions and examples of each rhetorical relation are as follows (from Lascarides & Asher 1993: 439–440):

EXPLANATION(α, β): the event described by β explains why α's event happened (by causing it), e.g. *Max fell. John pushed him.*

ELABORATION(α, β): β's event is part of α's (by being in the preparatory phase), e.g. *The council built the bridge. The architect drew up the plans.*

BACKGROUND(α, β): the state described in β is the backdrop or circumstances under which the event in α occurred (no causal connection but the event and state temporally overlap), e.g. *Max opened the door. The room was pitch dark.*

NARRATION(α, β): the event described in β is a consequence of (but not caused by) the event described by α, e.g. *Max stood up. John greeted him.*

CONTRAST(α, β): α and β have parallel syntactic structures that induce contrasting themes, e.g. *We can't win but we must keep trying.*

These rhetorical relations influence temporal interpretations and account for semantics/pragmatics interface phenomena such as anaphoric resolution, among others.

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cause begins right before the result. She argues that in certain subordinating relations, *now* can be omitted without a change in truth conditions. On the other hand, if a past clause modified by *now* has a coordinating relation with its preceding clause, the two clauses together will be subordinate to another clause that becomes the antecedent of *now*. In this case, the antecedent is the common topic of the two clauses, and the use of *now* helps structure discourse better by putting a temporal break between the two. Although Hunter's rhetorical relation-based analysis of *now* has better empirical coverage than previous studies and is intuitively attractive, her claim that the relation between the time denoted by *now* and the time of its superordinate clause 'must be as close as possible to identity' is not very precise.

1.2 *Main claims of this paper*

1.2.1 *The temporal perspective shift as a function of narrative discourse*

In the previous section, we have briefly reviewed major discourse-level analyses of shifted *now*. The general consensus in the literature is that *now* combined with the past tense signals a TEMPORAL PERSPECTIVE SHIFT. On the other hand, when and why such a temporal perspective shift occurs are questions that have not yet been settled.[6] The answers are necessary to explain and predict the co-occurrence of *now* and the past tense. Unlike most previous analyses, I argue that the temporal perspective shift is in fact a function of NARRATIVE DISCOURSE itself rather than a constraint that *now* imposes.

Narratives are defined as a representation or a recapitulation of a series of connected events in which a verbal sequence of clauses matches the order in which those events occurred (Labov & Waletzky 1967, Labov 1972, Hopper 1979, Chatman 1980, Reinhart 1984, Abbot 2008, among others). According to Labov (1972), a minimal narrative consists of a sequence of two clauses that are temporally ordered and separated by TEMPORAL JUNCTURE. Therefore, if a discourse does not contain at least one temporal juncture/break that separates and temporally orders two event descriptions, then it is not a narrative. In narratives, changing the order of the clauses results in a change in interpretation. Compare (4) and (5) from Labov (1972: 360). Both recapitulate the same past events, but only (4) is classified as a narrative.

[6] Some scholars have argued more narrowly that indexicals like *I* and *yesterday* can only shift in particular contexts, such as the literary genre of Free Indirect Discourse (FID), where the thought or speech of an agent other than the actual speaker is represented (Banfield 1982, Doron 1991, Schlenker 2004, Sharvit 2008), or in embedded clauses under report verbs in languages like Amharic and Zazaki (Speas 2000, Schlenker 2003, Anand & Nevins 2004, Oshima 2006). I agree with Recanati (2004), Hunter (2010), and an anonymous *JL* referee that the distribution of a shifted *now* is not restricted to these (quasi-)report contexts, meaning it is much broader than other shifty indexicals.

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(4) (a) Well, this person had a little too much to drink
(b) and he attacked me
(c) and the friend came in
(d) and she stopped it.

(5) A friend of mine came in just in time to stop this person who had a little too much to drink from attacking me.

Labov (1972) observes that clauses containing *used to*, *would*, general present, and subordinate clauses are not narrative clauses. In these clauses, a change in the order does not alter the meaning, as shown in (6).[7]

(6) (a) If you didn't bring her candy to school, she would punch you in the mouth.
(b) She would punch you in the mouth if you didn't bring her candy to school.

The literature on discourse studies posits the existence of a fundamental processing difference between narrative and non-narrative discourse types with regard to the use of tense (Caenepeel & Sandström 1992, Caenepeel & Moens 1994, Caenepeel 1995). Non-narratives, such as face-to-face conversational exchanges, are anchored to the deictic center (the point of speech), informing the addressee of significant recent events. In this case, the tense is used INDEXICALLY, i.e. it refers to the utterance time, which is salient in the speech

[7] It has been argued that rhetorical relations and world knowledge can sometimes override default temporal interpretation matching the textual order (Lascarides & Asher 1993). A reverse-order discourse like (i) is explained in terms of world knowledge about causality overriding the principle that events introduce a temporal update (Dahlgren, McDowell & Stabler 1989, Lascarides & Asher 1993).

(i) (a) Max fell. John pushed him.
(b) I got in to work early this morning. I took the bus.

For example, in (ia), if a pushing and falling occurred, then one may assume that the pushing caused the falling.

However, as Caenepeel & Moens (1994: 10) observe, if we assume that world knowledge alone licenses a reverse-order interpretation for simple past sequences, then it is not clear why the examples of discourse in (ii) sound odd.

(ii) (a) ?Everyone laughed. Fred told a joke.
(b) ?The committee applauded. Niegel announced his promotion.

There is a salient causal or scenario-based link between someone telling a joke and people laughing, or between someone's promotion being announced and people applauding, but that does not make these sequences acceptable. The reverse-order interpretation happens rarely in narratives, in which textual order is iconic to the actual order of the events. Instead, the pluperfect form is required for a reverse-order interpretation (Caenepeel & Moens 1994, Caenepeel 1995, Lee 2010). Narratives do not normally contain sentences like (ii) in an Explanation interpretation. In narratives, events tend to be interpreted in a sequential order (i.e., for (ia) above, John pushed Max after he fell).

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situation. In narrative discourse on the other hand, the construction of a narrative time line whose existence depends on the narrative itself establishes an ANAPHORIC relation between the described events (Kamp & Rohrer 1983, Partee 1984), rendering the relationship between the referential domain of the discourse and the utterance time less prominent. In other words, since the relationship between described events and the speech time is sometimes less obvious in narratives, greater discourse-internal restrictions are imposed on temporal relations, and tense and temporal adverbials are used to mark such relations between the states of affairs being described.[8]

I claim that narrative discourse is responsible for the temporal perspective shift from the utterance time to the narrative time line.[9] I further argue that certain context-dependent lexical items, like *now*, are flexible in their denotation in that they can refer to coordinates of marked context like narrative times. Assuming these premises are true, the occurrence of *now* with the past tense in narratives, denoting the current temporal perspective in an unfolding story, is not so surprising. As expected, this combination is awkward in non-narratives, as in (7).

(7) (a) I like to think about the summer of '97. I was so happy ***now**.
(Hunter 2012: 372)

(b) When I came back to Rome in 2005, having set off six months earlier for Tokyo, I was really excited to be in Italy ***now**.
(Hunter 2010: 66)

The clauses in (7) would most naturally feature in non-narrative, conversational discourse. The examples in (7) lack a depiction of a series of connected and temporally ordered main events, i.e. they fail to meet the requirement of containing at least one temporal juncture. For example, (7a) lacks a specific eventuality that

[8] Although most typical narratives come from fictional novels and short stories, they can be non-fictional as well. For example, most of the shifted *now* data that Hunter (2010, 2012) provides appear to be from newspaper articles. I suspect that shifted *now* can only occur in a narrative section in newspapers, but not in most opinion pieces, for example. Despite the fact that newspaper articles are usually categorized as non-fiction, as opposed to the fictional examples that I discuss in this paper, the narrative structure appears to be the same, i.e. organizing events and states to tell a story and relying on their chronological order on the (real or imaginary) narrative time line. In this respect, they are clearly distinguished from non-narrative, conversational exchanges, where the temporal deictic center (the utterance time) provides an anchor to interpret utterances.

[9] I would like to emphasize again that marked perspective in narratives is different from FID or report context, the latter of which involves *de se* beliefs (belief about oneself) and logophoricity (referring to an agent other than the speaker whose thought and speech are represented). Narratives need not contain represented speech and thought, although they often do. Here, perspective simply means physical point of view, which is similar to Kuno's (1987) emphatic locus.

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constitutes a story telling. In (7b), the events referred to in embedded clauses, fail to advance the story (Labov 1972).[10]

Hunter's analysis cannot explain why the discourse in (7) is unnatural because in these examples the *now* clause stands in a subordinating relation with its preceding clause, providing Background. Although the temporal relation is overlap – satisfying Hunter's requirement for the use of *now* – the sequences are still odd. Kamp & Reyle's (1993) analysis does not explain (7) either; *now* co-occurs with a stative predicate and the preceding clause provides the temporal perspective point, leaving unexplained why the use of *now* is awkward in these cases. Altshuler (2010) cannot explain (7b) because *now* has an event antecedent of coming back to Rome in 2005, but the discourse is still not felicitous.

In sum, I assert that the temporal perspective shifts from the utterance time to a real or imaginary narrative time line in narrative discourse, which organizes events to tell a story, relying on the chronological order among them on the narrative time line. In narratives, as a consequence, *now* denotes the shifted temporal perspective (or, say, narrative present as in literary criticism), rather than the utterance time.

1.2.2 *Temporal relations between a* now *clause and its preceding clause(s)*

In the previous section, we have observed that the skeleton of a narrative consists of a series of temporally ordered event clauses, which are called NARRATIVE CLAUSES (Labov 1972) or FOREGROUND (Hopper 1979). Any number of clauses that elaborate, evaluate, or comment on the narrated main events can come between two narrative clauses, which are called FREE CLAUSES (Labov 1972) or BACKGROUND (Hopper 1979). In other words, the bare bones narrative structure can be fleshed out with background clauses, which are typically stative, imperfective, and irrealis and stay outside of the narrative time line. An example is given in (8) below, from Labov (1972: 361). Because free clauses are not part of narrative time line, they hold true for the entire discourse and thus temporally overlap with the narrated events.

(8) (a) I know a boy named Henry.
→ free clause/background

(b) Another boy threw a bottle at him right in the head
→ narrative clause/foreground

(c) and he had to get seven stitches.
→ narrative clause/foreground

The foreground vs. background distinction, which Hopper (1979) claims is a universal of narrative discourse, helps answer the following two question: How

[10] The following discourse, which is a modified version of (7b), sounds better with *now*.

(i) I came back to Rome in 2005. I had set off six months earlier for Tokyo. I was really excited to be in Italy **now**.

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are the temporal relations between a *now* clause and its preceding clause(s) determined? Does *now* impose a temporal overlap relation with its preceding clause, as has been commonly assumed? I argue against this predominant view and instead claim that the temporal relation of *now* clauses with their preceding clauses is in fact a function of the narrative structure of foreground and background and their temporal relations of precedence and overlap, which is determined by the aspectual properties of the clauses. Since Dry's (1983) seminal work, many researchers working on the phenomenon of aspect and temporal interpretation in discourse (Kamp & Rohrer 1983, Partee 1984, Dowty 1986, Hinrichs 1986, Webber 1988, Kamp & Reyle 1993, Kehler 2002) have illustrated that telic (accomplishment and achievement), perfective, and inceptive clauses, which form foreground, move the narrative time forward, whereas atelic (activity and stative), imperfective, and modal clauses, which belong to background, maintain the given reference time. Therefore, the temporal relation that a *now* clause establishes with its preceding clause in discourse can be independently accounted for by the principle of narrative interpretation and clausal aspect, and needs not be stipulated as an idiosyncratic lexical property of *now*.[11]

First of all, as we have observed in (2) above, *now* does not invariably overlap with a time that is already introduced in the previous verbal context. It can refer to an updated reference time introduced by a telic event description that moves the narrative time forward. (2) is a clear counterexample to the claim that a *now* clause must overlap with or be identical to its preceding sentence, as Kamp & Reyle require, its preceding event sentence, as Altshuler claims, or its superordinate antecedent, as Hunter argues. This paper offers an account that deals with this case by simply adopting the temporal interpretation principles in narratives. As I have mentioned, since the narrative context creates a narrative time line that is shifted

[11] Unlike the current proposal, Hunter (2012) argues that the verbal aspect of a *now* clause and its immediately preceding clause alone do not provide sufficient information to determine their temporal relation, and one needs to go further back to search the entire discourse to locate *now*'s superordinate antecedent. However, the examples that Hunter uses to support this point are not counterexamples to my claim. For example, in the following discourse from Hunter (2012: 373), the *now* clause, together with its prior clause, answers the question posed in the first clause (brackets here mark clause boundaries):

> [Why was the left so much more accepting of the 2011 budget than of the 2010 budget?] [First, many on the left took a cue from conservatives,] [who had assailed the 2011 budget as falling short of the cutting that was needed.] [Second, Mr. Obama was **now** in better standing with liberals than he had been in 2010] [having recently repealed 'don't ask, don't tell'.]

However, it can still have a temporal overlap relation with its immediately preceding clause as well. That is, the discourse does not exclude the interpretation that Obama was in a better standing when the left took a cue from conservatives.

Hunter argues that when a *now* clause is connected to a preceding clause in terms of a coordinating relation, the *now* clause is anaphoric to a superordinate antecedent that serves as a common topic for the two clauses. Therefore, her account, in principle, could be extended to explain examples like (2) above by locating or accommodating a topic antecedent. However, it is not always easy to identify such a topic antecedent, as we will see in my corpus analysis.

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from the utterance time, the temporal location of events with respect to each other on the narrative time line is crucial for an adequate understanding. The rule of thumb for temporal interpretation in narratives is that telic event clauses move the narrative time forward, forming a foregrounded skeleton of narrative, while state clauses maintain the current reference time, providing background information that elaborates, evaluates, or comments on the foregrounded events (Dry 1983, Kamp & Reyle 1993). Given this, the fact that *now* combined with a telic event updates the temporal context with a new reference time, viz. (2), is perfectly normal. This, in turn, entails that the use of shifted *now* is compatible with both foreground and background in narrative and is not restricted to background, contrary to common assumptions.

As Hunter (2012) points out, rhetorical relations play an important role in narrative comprehension, but once again, they are not specific to the meaning of *now*; rather, they derive from general relevance and coherence requirements. Hunter (2010) observes that Kamp & Reyle's (1993) example in (9a) below showing the aspectual constraint sounds awkward with or without *now*, and that the same event predicate with *now* becomes felicitous with more discourse context, as in (9b). She argues that the two clauses in (9b) 'hang together in a way that the two sentences of (9a) do not. The event described by the second sentence in (9b) concerns an entity introduced in the first sentence. By contrast, the two sentences in (9a) don't obviously have anything to do with each other and are thus awkward even without *now*' (Hunter 2010: 62). This further supports my claim that a new sentence must cohere in a significant way with its immediate context, and that this requirement is at work with or without *now*.

(9) (a) Bill had come home at seven. ?*He (**now**) wrote a letter.

(b) That was the kind of people in whom Paul had become so interested, and to whom he **now** wrote his letter.
(*The Story of the New Testament* by Edgar J. Goodspeed)

I have asserted that, unlike Hunter's (2012) claim that aspect does not determine the temporal relations, but in line with many other researchers of aspect and temporal interpretation in discourse (Kamp & Rohrer 1983, Partee 1984, Hinrichs 1986, Dowty 1986, Webber 1988, Kamp & Reyle 1993, Kehler 2002), telic event clauses move the narrative time forward, while state clauses maintain the current reference time. However, note that there was one exception to this principle, namely (3) above, repeated in (10a), in which a past state clause modified by *now* describes a later event.

(10) (a) Irene missed me so much that she drove from Tarifa to see me. All she wanted to do **now** was to take me back with her.

(b) Irene missed me so much that she drove from Tarifa to see me. All she wanted to do was to take me back with her.

As we observe in (10b), without *now*, a temporal overlap interpretation is more natural. It appears that the presence of *now* overrides the default narrative

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temporal interpretation rule of state overlap. I argue that *now* does not impose a temporal precedence relation with its preceding clause, but rather changes the aspectual class of the predicate to make it an event description. Assuming this, a sequential reading in (10a) is no longer an exception to the temporal update rule in narratives.

This being the case, it is important to understand why and how *now* changes the aspectual class of the predicate it modifies. As observed in the next section, in my corpus data, *now* in the past-tense clause almost always occurs with TEMPORARY STATE (i.e. stage-level predicate) or INSTANTANEOUS EVENT descriptions, but almost never with PROPERTY-DESCRIBING STATES (i.e. individual-level predicate, Carlson 1977). That is, *now* denotes a time at which a change of state takes place. These temporary state predicates entail the events that start the temporary states. Because of this, I argue, they can be COERCED to refer to their inception event when they are modified by *now* if the event in the prior clause is interpreted as causing the state. In such a case, they may describe events that follow the events in the preceding sentence because cause must precede effect.

De Swart (1998) defines coercion as the phenomenon of change in the aspectual type of a proposition under the influence of modifiers such as tenses, temporal adverbials and aspectual auxiliaries, which coerce the proposition to the appropriate type. For example, (11a, b) below illustrate that a state can be coerced into an event by emphasizing the starting point or endpoint of the state. (11c, d) show that events can also be coerced into states by giving the sentence an iterative or habitual reading.

(11) (a) John is liking his new job.
(b) Suddenly, I knew the answer.
(c) Mary was hiccupping.
(d) For months, the train arrived late.

Coercion happens because of a mismatch or a clash between the lexical aspect of predicates and the input constraints of their modifiers, and has been analyzed as involving an implicit coercion operator (Moens & Steedman 1988, Pustejovsky 1995, Jackendoff 1997, de Swart 1998, Rothstein 2004).[12]

Note that, unlike the aspectual coercion cases in (11), which exemplify a mismatch between argument and functor within a clause, our example of coercion involving *now* in (10a) takes place when a *now* clause combines with a preceding clause in discourse. It is triggered by a mismatch between the aspectual class of the new sentence, which is a state, and the narrative interpretation requiring that the cause precede the effect. This means that the source of coercion can

[12] In this respect, coercion is a repair mechanism. Mair's (2012) corpus study shows that coercion is exceptional and statistically negligible. Brennan & Pylkkänen's (2008) magnetoencephalography study reveals that aspectual mismatch initially involves the computation of an anomalous meaning but is later repaired through coercion.

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be sentence-external (Egg 2005, Dölling 2014). However, although the level of application is broader, I assume that the same mechanism that is responsible for coercion in (11) is at work in (10). First, the coercion operator, much the same as other aspectual operators like progressives and perfects, is an eventuality modifier, i.e. it maps a set of eventualities onto another set of eventualities (de Swart 1998). Second, coercion occurs when there is a mismatch or a clash in semantic composition. Once we expand the level of semantic analysis from sentence to discourse, as this paper does, the scope of coercion is not limited to the intra-sentential level. I will model the coercion process formally in Discourse Representation Theory in Section 3.

1.2.3 *Change of state*

I have argued so far that a shift in temporal perspective occurs in narratives and that *now* functions in these cases to indicate the current temporal perspective. I have further argued that the temporal precedence and overlap relation between a *now* clause and its preceding clause follows from a more general and independent principle of narrative interpretation that hinges on the aspectual properties of clauses. Foregrounded telic events on the narrative time line update the temporal perspective, whereas backgrounded states maintain it. These explanations leave the lexical meaning of *now* rather vacuous, predicting that *now* can freely occur with past tense as long as the discourse in question is a narrative. However, the existence of a narrative time line and the occurrence of a perspective shift in and of themselves do not license the use of *now*, which seems to be subject to further discourse constraints. One further constraint in the use of shifted *now*, I claim, is the CHANGE OF STATE meaning. That is, *now* invariably indicates a change of state, denoting the turning point dividing the past and the future seen from the contextually salient narrative time.[13] This claim is based on the observation in my corpus data that *now* in the past-tense clause almost always occurs with temporary state (i.e. stage-level predicate) or instantaneous event descriptions, and hardly ever with property-denoting states. Moreover, as we will see in the next section, the time at which such a change of state occurs provides an important piece of information for an adequate understanding of the narrative.

As I previously mentioned, Recanati (2004) and Hunter (2010) also consider temporal contrast or change of state as an important component of the meaning of *now*. However, their notions are slightly different than the change of state meaning

[13] An anonymous *JL* referee asked whether the change of state meaning is also present in the use of *today* with contrastive focus. As Hunter (2010) points out, *now* can either mean that the changed state has recently started or indicate the immediacy of the state, depending on intonation. If *now* is focused, as in 'I am hungry NOW', it emphasizes the urgency and immediacy of hunger. If *now* is not focused, it simply indicates that the current state of being hungry has started recently. Although *today*, like *now*, seems also signal a change of state because it is awkward with individual level predicates (e.g. *?*Today I have blue eyes*), *today* or *yesterday* can shift only in Free Indirect Discourse in English but not in narratives in general, so there's a difference between the two types of adverbials.

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of *now* that I advocate here. Hunter's (2010) lexical entry of *now* imposes the condition that the described situation did not hold or will not hold at some time immediately in the past or immediately in the future of the time denoted by *now*.[14] However, *John left the gang and was* ***now*** *a changed man* does not imply that he will change back to a bad person again. Therefore, the condition that the situation does not hold in the future seems too strong. Moreover, in her later paper, Hunter (2012) abandons this claim, arguing that contrast meaning is not part of lexical meaning of *now* but a mere pragmatic by-product, putting forward a rhetorical relation-based analysis of *now* instead. Recanati (2004: 19) discusses a temporal comparison or contrast between two times but is not necessarily concerned with a change of state: '*now* can refer to any period, provided it stands in contrast to another, more distant period. On this view, "here" essentially contrasts with "there", and "now" with "then". When considering two times, or two places, if one is thought of as closer than the other, we can refer to the closer one as "now" or "here"'.

To support better my claim that the shifted *now* can only occur when a change of state is asserted or implied, let us look at some attested examples.

(12) Five months later, I sat with her as she lay in bed . . . I was alone in her bleak room. Alone, because there was none of her in it, just a body that **now held** no essence of my mum.

(Hunter 2012: ex. (3))

The use of *now* in (12) asserts a change of state that has happened to the speaker's mother, contrasting her current vegetative state and her former normal state. Here, *now* combines with a state description *hold no essence*, and thus overlaps with an event of *sitting with her*. Hunter (2012) uses this example to explain that in subordinating relations – in particular, ELABORATION – *now* can be omitted without affecting the interpretation. I argue that *now* still adds the meaning of contrast and change of state, indicating that such a change happened not long before and has been continuing until the event that serves as the temporal perspective point, i.e. she sat down with her mom. Without *now*, such a change of state is only pragmatically implicated without being asserted. When *now* modifies an event description that moves the narrative time forward as in (13) below, the change of state meaning of *now* is shadowed by the fact that events inherently

[14] Recanati (2004) does not provide a formalization of the lexical semantics of *now*. Hunter's (2010: 70) formalization of *now* is as follows:

$$[[\text{now}_{VP}]] = \lambda P \lambda e \lambda x \exists t(\uparrow \exists e_1(\text{at}(e_1, t) \wedge e_1 = ? \wedge \exists e_2 \exists t'(\text{at}(e_2, t') \wedge \neg P(e_2, t') \wedge ((t < t' \wedge \neg \exists t''(t' < t'' < t)) \vee (t < t' \wedge \neg \exists t''(t' > t'' > t))) \wedge P(e, x) \wedge \text{at}(e, t))))$$

In her system, the operator ↑ forces the resolution of the proposition in its scope in the outermost context possible, instructing to look first in the utterance context. The lexical entry of *now* states that P did not hold or will not hold at some time immediately in the past or immediately in the future of t, where t is either the time of utterance or a time introduced in discourse.

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entail a change of state by themselves.[15] However, there is still a clear contrast or change of state between not having caught fire and exploding, the latter of which happened only after dipping into liquid air. The explosion is consequential upon the action of dipping.

(13) The scientist dipped the felt into liquid air and the result was astonishing. Before being dipped into the liquid air, it had not caught fire; but **now** it **exploded**, it was consumed so rapidly.

(Hunter 2012: ex. (8))

Why does *now* entail change of state? As pointed out in Hunter (2010), since *now* refers to the time that is salient in context (either utterance or discourse context), it is often redundant and unnecessary unless it highlights an eventuality that holds during the contextually salient time. The eventuality becomes highlighted typically when it is contrasted with its opposite state. (14), which is a slightly modified version of (1b), provides some evidence for my claim.

(14) Finally, at six o'clock, Mr. Johnson started to speak. **Now** there were only ten people in the room. ?In fact, there were only ten people before the meeting began.

(14) implies that there were more than ten people in the room before Mr. Johnson started to speak at six o'clock and the number of people shrunk to ten by that time. This implication cannot be cancelled by adding the last sentence in the discourse. Without *now*, however, the discourse sounds better.

In sum, *now* not only refers to the shifted temporal perspective in narratives but also indicates a change of state. I will elaborate on this point through the narrative examples in the next section.

1.2.4 *Summary and roadmap*

Let me now summarize and reiterate my main claims: (i) the temporal perspective shift is a function of narratives, reflecting the fact that narrative discourse creates a narrative time line, which serves as the current temporal perspective to which *now* may refer; (ii) the temporal relation of a *now* clause with its preceding clause is a function of the aspectual property of the VP it combines with, and can be

[15] Because event clauses inherently imply a change of state, *now* in event clauses often triggers an additional pragmatic implication about the speaker expectation, parallel to *finally* or *after a long time*; the change occurred later than expected, or it should have happened earlier. The example in (2) illustrates this well. This is the reason why the use of *now* sounds superfluous and awkward when the speaker expectation is absent, as in (i).

(i) A man entered the bar. He **now** sat down. He **now** ordered a beer.

Smessaert & ter Meulen (2004) and Lee (2008) formalize the speaker expectation meaning of aspectual adverbs like *already*, *still* and *finally* in Discourse Representation Theory, implementing it in terms of focus semantics, which contrasts the current situation with an alternative possible situation that occurs earlier or later.

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independently accounted for using the much studied phenomenon of aspect and temporal interpretation in discourse; and (iii) the use of *now* signals a change of state, and the time at which such a change of state occurs provides an important piece of information for an adequate understanding of the narrative.

The rest of the paper is organized as follows. In Section 2, I examine naturally occurring narrative examples quantitatively to support the above claims. Section 3 proposes a semantic analysis of *now* in Discourse Representation Theory (DRT; Kamp & Reyle 1993). Section 4 concludes the paper by summarizing the main points and discussing their implications.

2. A QUANTITATIVE ANALYSIS OF *NOW* IN NARRATIVE DISCOURSE

In this section, I will present the results of my corpus analysis of *now* in narrative discourse data. I examined 100 randomly selected samples of narrative discourse containing *now* from the British National Corpus (BNC).[16] Using the source information, I only chose short stories and novels, which consist of typical narratives. I examined discourse in which a sentence with *now* is preceded by three to four sentences and followed by another. Table 1 summarizes the tense and aspect forms that are used with *now* in my corpus data. As we observe in Table 1, among the 100 examples of *now* in discourse, 37% occurred with the present tense, and 63% occurred with the past tense. When occurring with the past tense, 63.5% (40 out of 63) were paired with state predicates, while 38% (23 out of 63) were paired with event predicates, including 17 (28%) telic verbs (predicates that denote an event with a built-in end point, e.g. *build a house*, *die*) among the latter.

<table>
<tr><td colspan="4">Past tense</td><td colspan="2">Present tense</td></tr>
<tr><td colspan="2">State</td><td colspan="2">Event</td><td colspan="2">State</td></tr>
<tr><td>State verb</td><td>Grammatical state</td><td>Telic verb</td><td>Atelic verb</td><td>Direct speech</td><td>Non-direct speech</td></tr>
<tr><td>14</td><td>26</td><td>17</td><td>6</td><td>33</td><td>4</td></tr>
<tr><td colspan="2">40</td><td colspan="2">23</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td colspan="4">63</td><td colspan="2">37</td></tr>
<tr><td colspan="6">100</td></tr>
</table>

Table 1
The distribution of *now* sentences in narrative discourse.

[16] The British National Corpus is a 100-million-word collection of written and spoken language samples from a wide range of sources, designed to represent a wide cross-section of British English from the latter part of the twentieth century.

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2.1 Now *with the present tense*

When used with the present tense, a clear majority (33 out of 37 instances, 89.2%) appeared in direct speech put between quotation marks. In the present tense in both quoted direct speech and simple narratives in my corpus, *now* did not occur with telic event descriptions, but only with state descriptions. (15) contains an example of *now* occurring in a quoted direct speech in narrative.

(15) 'I know you're in love with me,' said Lucy, making a neat mound of cigarette ash, firming her hand against shaking, 'and I said it before, and I'll say it here and **now**. I do love you. I'm not in love with you – there's a difference.'

(16) is an example of *now* occurring in a present-tense sentence that is not a quoted direct speech. Although a state predicate is used in this example, a temporal sequential relation can be easily inferred, although not required.

(16) I **feel** her touch my hand again, but I can't look at her. I **feel** all upset **now**. Marie's my friend. I don't hate her.

I have claimed that such a case involves a type of coercion from a stage-level state predicate (Carlson 1977) to an inchoative (i.e. inception/beginning) event that inaugurates the state. When the preceding event clause describes an event that causes such a change of state, *now* implies that the state starts to hold right after the event because the state cannot hold before the event that causes it to take place. The first clause in the previous sentence in (16) describes an event (Marie touching the narrator's hand) that caused him to get upset. Without *now*, the second sentence describes an overlapping state with the preceding event.

2.2 Now *with the past state sentence*

As we see in Table 1, among 40 state predicates in the past tense, 14 state verbs and 27 grammatical state constructions were used.[17] One important observation in my corpus research was that 13 out of 14 state verbs were stage-level predicates but not property-denoting or individual-level predicates. These predicates include *was ill, was his turn, felt not so slender, knew where he was going, looked a little less cracked*, etc. There was only one example where a property-denoting predicate appears with *now* in my corpus, which is given in (17) below. Even here, the use of *now* strongly implies a change of state, i.e. Dawson City was not a ghost town but has turned into one.

[17] State verbs like *know* and *like* lack a change of state or a goal (culmination, built-in endpoint) in their lexical meaning, whereas grammatical state constructions, such as progressives, perfects, passives and modals, operate on a predicate and change it into a state description. For example, the progressive turns an event description into a state description expressing an ongoing process (e.g. *run* refers to an event but *be running* refers to a progressive state).

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(17) Not far away a turgid and fast moving river rushed southward in narrow gorges. Beached there were old weather-worn skeletons of the wide-wheeler paddle boats formerly used for passenger service between White-horse and Dawson City. The latter was **now** a veritable ghost town with its derelict buildings holding up false-front facades in the fashion of Hollywood sets. But times had changed since 1898.

Based on this observation, I assert that, because shifted *now* almost always occurs with temporary state descriptions in my corpus, together with the fact that it implies a change of state even when it occurs with permanent or property-denoting ones, as in (17) above, shifted *now* is used only when a change of state is implied. This is more important for states because events involve change of state in their lexical representation intrinsically.

Let us look at some more examples. In (18), *now* modifies a temporary state predicate, *be cold*.

(18) Jinny had taken the little girls home and Sarah and Mrs. Bennet left. Soon afterwards Tony took Helen away. 'I think she should be in bed', he said, and Anne **agreed**. Helen, who had been so calm during the night, **was now cold** and shaking with delayed shock, and Anne told her how glad she had been of her company.

What licenses the use of *now* here is the change of state and the temporal contrast between the current state modified by *now* and its prior opposite state: Helen was calm during the night but was now cold and shaking. The clause modified by *now* describes a situation that overlaps with a situation in the preceding telic event clause: It is inferred that Helen was cold when Anne agreed that she should be in bed. The *now* sentence also provides an explanation for the previous clause: Because Helen was cold and shaking with shock, Tony took her away and Anne agreed that she should be in bed. This discourse-relevance constraint, I argue, needs to be met independently, regardless of *now*. The only contribution *now* makes in discourse is that the described state, which typically overlaps the event in the preceding telic event clause, did not hold before that event, and this information is relevant for a coherent interpretation of the discourse.

(19) illustrates a case in which a state verb (modified by *now*) moves the narrative time forward.

(19) 'I think I can help you.' Oh, wow. . . but **now**, inexplicably, he **felt** an urge to back away, to turn and run from her. Still trying vainly to keep it light, he said, 'Thanks for the thought.'

It is inferred from (19) that he felt an urge to back away after she claimed she could help him, which caused him to want to flee. Here, the meaning of contrast is obvious: He did not feel the urge to back away before she said she could help, but he began to feel that way after hearing those words. Among the 40 cases in which *now* modifies a state predicate in the past, I found nine instances (22.5%) of

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coercion from a temporary state predicate to an inchoative event. The remaining 31 cases follow the general state overlap principle.

Let us next observe grammatically state constructions (such as progressives and perfects), whose temporal relationship with the preceding event clause is almost exclusively an overlap relation. That is, coercion is extremely rare in grammatically state constructions probably because of a conflict between imperfective aspectual operator and perfective coercion operator.

(20) I hotfooted it down to the bedroom again in time to witness half the ceiling crashing in flames on to the bed I had been sleeping in moments before. Quickly beknickered, I **attempted** the stairs to my treasures again, but they, too, **were now burning**. Geodesic sculptures were dropping from the ceiling and exploding around me.

It is inferred from (20) that the stairs were burning when the narrator attempted to venture down them. The use of *now* here indicates a change of state from the stairs not burning to being consumed by flames. The discourse connective *but* explicitly cues the contrasting meaning.[18] The state of stairs burning began before the event of speaker trying to go down them.

(21) illustrates a case where a clause immediately preceding the *now* clause is also a state.

(21) She **thought** it was funny how things had worked out. All that time, and she hadn't been able to get him to look at her. **Now**, his security escort **was dishing him up** to her on a plate. She would soon be alone with him, but she mustn't be over-zealous.

When a *now* clause is stative in the past tense, it describes a situation that overlaps with a situation in the preceding clause. If the preceding clause is similarly a state, as in (21), that state would also have to rely on a preceding telic event clause for its temporal location. This simply follows from the fact that background clauses, which occur between foreground telic event clauses, depend on the foreground event clauses for their temporal interpretation, i.e. they hold throughout these events. Since both the preceding pluperfect clause as well as the past progressive clause modified by *now* constitute background, they overlap with the foregrounded event in the first clause describing her thinking. His security escort began dishing him up to her right before she thought it was funny how things had worked out, providing an explanation for the event in the first clause. The clause immediately preceding the *now* clause, which is in the pluperfect form, makes explicit the contrastive meaning.

So far we have observed that past-tense state predicates modified with *now* either overlap with the event in a preceding clause, or are coerced to refer to a

[18] My corpus contained 14 cases where discourse connectives for contrast such as *but*/(*al*)*though* were used.

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following event when the event in the preceding clause is the one causing the event in the *now* clause. One important difference between typical state overlap and the overlap relation in *now* clauses is that the former holds just because states have no beginning or end point, and they are assumed to persist unless otherwise indicated, whereas the latter clearly involves a change of state, and the inception of the changed state happens right before the event in the prior clause. In that way, it becomes relevant for the interpretation of the discourse.

2.3 Now *with the past event sentence*

Let us turn to *now* in past event sentences. Among 100 discourse examples, 23 instances of *now* occurred with event descriptions. I found only six examples in which *now* occurred with an atelic (i.e. activity verbs, which lack a built-in endpoint, e.g. *run*) clause. Like most state clauses, atelic event clauses do not normally move the narrative time forward, describing instead an event that overlaps with the eventuality introduced by the preceding clause. (22) is an example of *now* modifying an atelic clause, in which a temporal overlap relation is observed.

(22) Tamar had no alternative but to do as he said, and they **rode** from the yard without another word. How bitterly she **regretted now** that she had not revealed the episode with Davis before her marriage to Stephen.

We most naturally infer from (22) that Tamar felt regret while she was riding from the yard. It implies that she did not harbor such bitter regrets before they rode from the yard without talking to each other. The event in the preceding clause provides an explanation for the event in the *now* clause.

In my corpus data, I found 17 instances in which *now* modifies a telic event predicate. All of the telic verbs were achievements[19] that describe a turning point between two opposite states, such as *bring, find*, *become*, *open*, *turn*, *return*, *take notice*, *come*, *rekindle*, *accept* and *start*, some of which are given in (23) and (24).

(23) Aggie, sitting looking into the fire, nodded as she thought: And aye, Mama took the only step left to her, and look where it's got her. She **now turned** towards the table when Ben said, 'You finished?' and the child replied, 'Yes, thank you. Can I help to wash up?'

[19] Among telic predicates, accomplishments, such as *build a house*, describe durative events that have built-in goals (culmination). Achievements like *win* and *die* consist of solely their culmination points; the phase leading up to the culmination point is not part of such an event. The ending of achievements is not distinguishable in the representation from their start, despite the common-sense knowledge that even such atomic events do take time. These are 'instantaneous' transitions in a semantic or conceptual sense.

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(24) Then the Dawn Maiden gave him one of the Sun's burning rays; she wound it up like a ribbon and put it in a box which she hung round his neck. The king's son mounted his horse again, and they rode on for seven days, until they came to the islands of the Black Sea, where there is such darkness that a spoon might stand up in it. **Now** he **opened** his box and took out the sun's ray. It gave light, but only to him; not a created soul in the world could see him.

In these examples, it is clear that the clause modified by *now* indicates a change of state, moving the reference time forward. In (23), the event of turning follows the event of nodding. In (24), the king's son opened the box to take out the sun's ray, which only became necessary when they came to the very dark islands of the Black Sea. (24) shows that the time of opening is not anaphoric at all in a strict sense. The first sentence in the discourse introduces the box for the first time, so opening it cannot overlap with a time that is already introduced in the previous discourse.

Although most of telic event clauses modified by *now* move the narrative time forward, there were some exceptions in my corpus, specifically those in which a *now* clause elaborates on its preceding clause, as shown in (25).

(25) The young prince had showered and changed since she had last seen him. He **wore** red **now**, the colour of the summer, his ma kua, the waist-length ceremonial jacket, a brilliant carmine, his loose silk trousers poppy, his suede boots a delicate shade of rose.

It is well known that telic event sequences do not always move the narrative time forward, specifically when the second clause describes an event that is included in the event mentioned in the first clause, as illustrated in (26).

(26) John gulfed down the beer. Some of it ran down his chin.

Since the second event is part of the first one, the former must be temporally included in the latter. The second clause in (26) is part of background, elaborating on the foregrounded event in the first clause.

2.4 *Summary*

First, we have observed in the corpus data that shifted *now* almost exclusively occurs with stage-level state predicates or instantaneous events that result in a change of state (i.e. achievements). The fact that *now* combines with these predicates suggests that the perspective time denoted by *now* is the very moment at which a change of state occurs, i.e. a turning point that divides the past and the future. As a result, the use of *now* in narratives typically implies a temporal contrast between opposite states.

Secondly, we have observed that *now* with state sentences does not invariably describe an overlapping state but sometimes describes a later event. I have argued

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that a type of coercion from a stage-level state predicate to an inchoative event that starts the state is at play in such a case. The coerced inception event is instantaneous, like achievements, and *now* combines with it to describe a change of state that follows the given reference time.

Thirdly, the temporal inferences in discourse that we have observed follow independently from the principle of narrative progression, rather than from the meaning of *now*. When *now* combines with a state, the overlap relation follows from the general principle that state clauses overlap with the current reference time. On the other hand, when *now* combines with telic events, it triggers the sequential interpretation because event descriptions move the narrative time forward. Through the corpus data, we have observed that discourse containing *now* is subject to the same principles.

3. An analysis of *now* in Discourse Representation Theory

In this section, I will provide a discourse-level, formal semantic analysis of *now* using Discourse Representation Theory (DRT; Kamp & Reyle 1993, van Eijck & Kamp 1997). In DRT, it is the Discourse Representation Structure (DRS), not the individual sentence as such, which is semantically interpreted. Hence, the theory is useful for analyzing narrative discourses and the anaphoric relations among sentences within it. Observe how DRT analyzes sequences of sentences as in (27).

(27) (a) A man came in. He sat down.
(b) A man came in. He was happy.

A DRS for tensed discourse includes events, states, and location times as objects in the universe of discourse, specifying relations of precedence and inclusion among them. The eventuality described by a non-initial sentence e is interpreted as related temporally to some other event e' introduced by the preceding discourse context. The temporal relation between e and e' becomes especially important when the new sentence does not contain a temporal adverbial, which typically determines the value for the variable for the location time, so that the new eventuality e can be located only in relation to the antecedent context. Although the way in which e and e' are related could depend on a number of different factors, the most important one is whether e' is an event or a state. If e' is an event, then it is typically understood as following the event e. This case is illustrated by the second sentence of (27a) above. When the second sentence is interpreted, the event of a man coming in is the last mentioned event. And the new event, that of him sitting down, is naturally seen as following the event of his entering. If e' is a state, on the other hand, the relation is typically that of overlap. This is the case for the second sentence of (27b) above. From (27b), it is inferred that the man was happy when, not after, he came in. Kamp & Reyle (1993) adopt Reichenbach's (1967) notion of reference time (Rpt) by introducing into the DRS a condition of the form Rpt: = α, where α is some discourse referent which represents a time or an event already present in the DRS. (28) below is the DRS for (27). A Discourse Representation

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Structure K is a pair of a set of discourse referents $x_1 \ldots x_n$ (universe of K) and a set of DRS conditions $C_1 \ldots C_n$, which are separated by | from each other.

(28) (a) [x, e_1, e_2 t_1, t_1, n | man(x), e_1: come in (x), $e_1 \subseteq t_1$, $t_1 <$ n, Rpt: = e_1, e_2: sit down (x), $e_2 \subseteq t_2$, $t_2 <$ n, $e_1 < e_2$]

(b) [x, e_1, s_1t_1, t_1, n | man(x), e: come in (x), $e \subseteq t_1$, $t_1 <$ n, Rpt: = e, s: happy (x), $t_2 \subseteq$ s, e $\subseteq$ s]

(n is the utterance time, x < y means x temporally precedes y, and x $\subseteq$ y means x is temporally included in y)

The first sentence of (27a) introduces an event discourse referent e_1 of a man coming in, which is included in its location time t_1. The location time precedes the utterance time. The processing of the second sentence of (27a) involves adding the condition Rpt: = e_1, meaning that e_1 acts as a reference point for the second sentence. The second sentence describes an event, and thus the relation between this event and the reference point is succession. On the other hand, the second sentence in (27b) is a state, and its interpretation will again require the choice of a reference time, which is the event described by the first sentence e_1. Since the eventuality denoted by the second sentence is a state, the processing principle entails the inclusion of the reference point. The DRS thus constructed is true iff there is an embedding function that verifies the DRS in the given model.

Kamp & Reyle (1993: 596) introduce the Temporal Perspective point (TPpt) in addition to Referent point (Rpt); they use Rpt for narrative progression, as we have observed, and TPpt for perspective, which is crucial for the interpretation of shifted *now* and pluperfects.

(29) (a) Fred arrived at 10. He had got up at 5.

(b) [n, e_1, t_1, x, e_2, t_2 | ~~TPpt: = n~~, $t_1 <$ n, Fred(x), e_1: arrive(x), $e_1 \subseteq t_1$, at 10(t_1), TPpt: = e_1, $t_2 < e_1$, y = x, $e_2 \subseteq t_2$, at 5(t_2), he(y), e: get up(y)]

As we see in (29b), Kamp & Reyle equate TPpt with the speech time for a simple past event sentence in the present tense. When the second sentence of (29a) is interpreted, however, TPpt shifts to the time of e_1, providing a temporal perspective from which the event described in the second sentence is seen as past. Therefore, the TPpt is reset to e_1 (a strikethrough on the previous TPpt, which is n, represents the resetting).

Kamp & Reyle argue that the simple past event description has the relation [TPpt at the utterance time; described eventuality before the utterance time], whereas the simple past state description has the relation [TPpt before the utterance time; described eventuality before the utterance time]. This is forced because of their assumption that *now* with the past tense, which signals a temporal perspective shift, can only occur with state sentences and, therefore, only state sentences involve a temporal perspective shift to the location time of a preceding event sentence. However, they do not want to claim that whenever a state sentence

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is processed, the TPpt shifts to the location time of the preceding event. For instance, in the example given in (30) below, the TPpt is at the speech time for the first sentence, then shifts to the time of the man entering the bar for the second sentence, because this sentence is a state description, and subsequently shifts back to the utterance time for the third and the fourth sentences.

(30) A man entered the bar. He was wearing a black jacket. He sat down. He ordered a beer.

In order to avoid this undesirable and unintuitive result, Kamp & Reyle argue that even simple past state sentences allow the relation [TPpt at the utterance time; described eventuality before the utterance time]. This allows us to keep the TPpt at the utterance time for an extended discourse like (30) above. However, as one can easily see, the price to pay is the multiple ambiguity analysis of the simple past tense in English. We also cannot predict when TPpt overlaps the state eventuality and when it does not. Kamp & Reyle seem to suggest that the occurrence of *now* with the past tense will clearly indicate the TPpt shift, but *now* does not exclusively occur with state clauses, as we have observed.

As I have argued in the previous sections, in narratives, the temporal perspective shifts to a narrative time line, which is typically in the past tense, and the utterance time becomes secondary.[20] This is the function of narrative discourse but the individual clauses and tense and aspect forms that occur in it do not share this function. I argue that TPpt coincides with the speech time in non-narratives, whereas TPpt shifts to a past narrative time in narratives and possibly gets updated as a new telic event is introduced, describing a later event. Assuming these, we can avoid the undesirable multiple ambiguity of the simple past tense in English because TPpt becomes a property of discourse rather than the lexical meaning of tense and aspect forms in isolated sentences. I articulate the discourse rules of fixing and updating TPpt in (31). I assert that *now* refers to TPpt.

(31) *Discourse rules*

(i) Temporal Perspective (TPpt) is the utterance time in non-narratives, whereas it shifts to a past time in context in narratives.
(ii) TPpt in non-narratives is fixed to the utterance time, whereas TPpt in narratives gets updated when a new telic event is introduced, describing a later event.

We are ready at this point to provide the DRT analysis of sentences containing *now*. We have observed that *now* can combine both with event and state predicates.

[20] Although narratives are typically in the past tense, present and future narratives are also possible. An anonymous *JL* referee asked whether *now* can occur in future narratives signaling a perspective shift. In principle, I think it can. A cursory examination of 100 discourse examples from BNC in which *now* modifies future tense, however, showed that these are mostly non-narrative discourse (interviews, conversations, news reports), where *now* still denotes the speech time.

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Following the general interpretation rules, when *now* modifies an event, the event is included in the location time; when *now* modifies a state, the state includes the location time. Let us first look at the case where *now* modifies a state sentence in the present tense. In (32), BEG(s) means 'beginning of the state s'.

(32) Helen is cold **now**.
[x, s, t, n | TPpt: = n, Helen(x), s: be cold(x), s $\supseteq$ t, t = n, BEG(s) $\leqslant$ t, now(n)]

As shown in (32), the condition BEG(s) $\leqslant$ t represents the change of state meaning of *now*, ensuring that there is an inception event for the state and that it immediately precedes or is equated with the location time. Because of the presence of *now*, (32) implies that Helen has recently become cold. In the present tense, as is the case in (32), the speech time is the location time of the described event. The value of *now* refers to TPpt, regardless of whether it is the utterance time or a narrative time. In this case, the utterance time n is in the denotation of *now* because TPpt is the utterance time (I assume that (32) is a non-narrative, which is anchored to the speech time).

Let us now observe how DRT analyzes an event sentence modified by *now*.

(33) Helen turns **now**.
[x, e, t, n | TPpt: = n, Helen(x), e: turn(x), e $\subseteq$ t, t = n, BEG(e) $\leqslant$ t, now(n)]

As shown in (33), the event discourse referent e is included in the location time t, which in turn is equated with the utterance time n. Although the condition that the described event has just started to hold at n does not need to be specified because it is entailed by virtue of the fact that the event is temporally confined within its location time, I have added it in (33) for the sake of the uniform treatment of *now*. The denotation of *now*, as in (33), is TPpt, which is the utterance time n in this case.

Let us proceed to discourse examples in which *now* occurs with the past tense. (18) above, which is an example of *now* occurring with a past-tense state sentence, is repeated in (34a). The DRS for the simplified discourse of (34a) is given in (34b).

(34) (a) 'I think she should be in bed,' he said, and Anne **agreed**. Helen, who had been so calm during the night, **was now** cold and shaking with delayed shock.

(b) [t_1, t_2, x, e y, s, n | TPpt: = t_1, Anne(x), e: agree(x), e $\subseteq$ t_1, t_1 < n, Rpt: = e, Helen(y), s: be cold (y), $t_2 \subseteq$ s, t_2 < n, BEG(s) $\leqslant$ t_2, e $\subseteq$ s, now(t_1)]

In (34b), *now* refers to the TPpt, which is t_1. The reason why the second sentence in which *now* occurs does not move the narrative time forward is due to the aspectual class of the main verb, which is a state. In this case, the location time including the event e of Anne agreeing, which serves as the reference point, is

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included in the state modified by *now*. In addition, the state described by the *now* clause begins right before the event of Anne agreeing.

The discourse in (25) above, which is repeated in (35a), contains an example in which *now* combines with an event sentence.

(35) (a) They **came** to the islands of the Black Sea, where there is such darkness that a spoon might stand in it. **Now** he **opened** his box and took out the sun's ray.

(b) [x, y, e_1, t_1, t_2, v, z, e_2, n | ~~TPpt: = t_1~~, they(x), the islands(y), e_1: come to (x, y), $e_1 \subseteq t_1$, $t_1 <$ n, Rpt: = e_1, he(z), his box(v), e_2: open (z, v), $e_2 \subseteq t_2$, $t_2 <$ n, $e_1 < e_2$, BEG(e_2) $\leqslant t_2$, TPpt: = t_2, now(t_2)]

Since both the first and the second sentences are telic descriptions, they dynamically update the temporal context, resetting the TPpt. Furthermore, as shown in (35b), the condition $e_1 < e_2$ ensures that the event in the second sentence follows the event in the first sentence. Therefore, the observed temporal progression is a function of the aspectual class of the VP and follows from an independent condition in the DRS. In this case, *now* denotes the updated TPpt.

Finally, we have observed that stage-level state predicates sometimes undergo a coercion that transmutes them into an inchoative event that begins the described state. Following de Swart (1998) and others, I treat coercion as an implicit operator of the same type as grammatical aspectual operators like the perfect or the progressive. That is, coercion operators C are eventuality modifiers, which map a set of eventualities onto another set of eventualities. In de Swart (1998), the input and output type are represented as indices on the operator, e.g. C_{sd}. For the progressive she assumes a mapping C_{sd} from stative onto dynamic eventualities. This operator is added before the progressive operator applies, satisfying its input conditions. In her system, (36a) forms the DRS in (36b).

(36) (a) Susan is liking this play.

(b) [PRES [PROG [C_{sd} [Susan like this play]]]]

The coercion with *now* occurs when a preceding sentence describes an event that causes the change. (37a) below is a simplified example of (19) above. (37b) provides the DRS of the same example. I employ an inchoative coercion operator C_{INCH},[21] which changes a temporary state to its beginning point (i.e. it maps a state s to an inchoative event e that starts s). Here, coercion is triggered by a mismatch

[21] Following Dölling (2014), I define C_{INCH} as λPλe.∃e':BEG (e', e)[P(e)]. When applied to a state, i.e. λe.∃e':BEG(e', e)[feel(e)], it maps a temporary state of feeling to its beginning point. Other kinds of coercion operators, such as Iterative coercion, which changes events to processes, and Habitual coercion, which changes events to habitual states, have the same formal structure: λPλe.Qe':R(e', e)[P(e)], where Q is a variable for a quantifier, and R represents general relations between eventualities. Dölling (2014) argues that these values are underspecified at the semantic level and later filled through pragmatic enrichment. If we follow this line of coercion analysis, it is not surprising that the value of R, in our case, BEG, is supplied through discourse context.

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between the aspectual class of the new sentence, which is a state, and the narrative interpretation requiring that the cause precede the effect.

(37) (a) She said she could help him. **Now** (inexplicably) he **felt** an urge to back away.

(b) $[t_1, x, e_1, t_2, y, e_2, t_2, n \mid \sout{\text{TPpt: } = t_1}, she(x), e_1: say(x), e_1 \subseteq t_1, t_1 < n, Rpt: = e_1, he(y), an\ urge(z), s: feels(y, z), C_{INCH}(s) = e_2, e_1 < e_2, \text{BEG}(e_2) \leqslant t_2, t_2 < n, TPpt: = t_2, now(t_2)]$

I provide a DRS Construction Rule for tensed sentences in Table 2 and a DRS Construction Rule specific to *now* in Table 3.

CR.$S_{[\text{TENSE} = \beta]}$
Triggering configuration: $S_{[\text{TENSE} = \alpha]}$ Choose TPpt: If $\alpha = -\text{PAST}$, then TPpt: $= n$ If $\alpha = \text{PAST}$, then TPpt: $= \alpha$ where $\alpha < n$ follows from K Choose Rpt: o Introduce into U_K: If S(s), a new state discourse referent s If S(e), a new event discourse referent e A new location time discourse referent t Introduce into Con_K: If S(s), $t \subseteq s$, $o \subseteq s$ If S(e), $e \subseteq t$, $o < e$

Table 2
DRS construction rules for tensed sentences.

CR.NOW
Triggering configuration: ADV – *now* Choose TPpt: TPpt = t Introduce into Con_K: now(t), $\text{BEG}(e) \leqslant t$, where e is an eventuality described by the VP that *now* modifies. Constraints on coercion: If e' is interpreted as causing e, where e' is an eventuality described by a preceding clause, introduce into Con_K: $C_{INCH}(s) = e, e' < e$

Table 3
DRS construction rule for *now*.

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4. Conclusion

It is by now well known that indexical expressions such as *now* are not as rigid as previously thought and can shift (e.g. *now* can refer to a time other than the utterance time) in some contexts (e.g. a literary style like Free Indirect Discourse in English or under report verbs in some languages). What is interesting about shifted *now* is that its distribution is much broader than these limited contexts. The conditions under which it can shift, however, are unclear and still under debate. Many recent proposals have tried to derive this property from the lexical meaning of *now*, thus treating it as a special case. Contrary to previous analyses, I argued that the temporal perspective shift and temporal relations are functions of narrative discourse itself rather than the lexical semantics of *now*. I further argued that the only lexical meaning of *now* is that its denotation is flexible, referring to a contextually salient time, whether it derives from the actual utterance context or a discourse context. In addition, *now* invariably indicates a change of state, denoting the turning point dividing the past and the future seen from this contextually salient location time. My claim was supported by a quantitative study of naturally occurring narrative examples from the British National Corpus, and formalized in the discourse-level formal framework of Discourse Representation Theory. I also provided a new analysis of state sentences with *now* triggering a narrative progression utilizing the notion of aspectual coercion.

The use of *now* hinges on the distinction between narrative vs. non-narrative discourse types. Understanding discourse types and their different functions is essential for interpreting even a small lexical item like *now* and thus needs to be explored in more detail with more formal precision informed by naturally occurring discourse data.

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