Towards a Proper Treatment of New Information Flow in Narrative Discourse

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1. Introduction

This study proposes a precise analytical tool for capturing the flow of information in a narrative by extending the basic insights of the **Preferred Argument Structure** (**PAS**) theory (Du Bois, 1985, 1987, 2003a, 2003b). Specifically, the categorization of argument positions into **A** (transitive subject), **S** (intransitive subject), **O** (object), or **Oblique** (object of preposition) must be refined.[1] Furthermore, new referents must be classified depending on whether the clauses containing them are **on-** or **off-timeline** in the sense of Thompson (1987: 442).

In the next section, the PAS theory is outlined. It will be clarified that the A-S-O classification method may not adequately capture the distribution of new referents and must be refined so that (i) the pragmatic role of non-agentive intransitive subjects under a high information pressure (Du Bois, 1987: 834–836) is properly reflected and (ii) language-specific constructions, such as the *there*-construction in English, can have the proper status because they serve important pragmatic functions in introducing new referents into a discourse. Furthermore, clauses containing new referents must be sub-classified depending on whether or not they advance a storyline. The necessity for a detailed examination of the discrepancy between form and use will also be argued.

In section 3, I demonstrate, using a finer categorization and the on- or off-timeline dichotomy, that new referents in the narrative discourses of 20 female and 20 male speakers of American English are consistently distributed. Namely, new referents tend to appear in clauses that are on the timeline and therefore serve to advance a storyline. Clause-final positions

and non-agentive intransitive subjects are the preferred loci of new referents. On the other hand, new referents in clauses that are off the timeline tend to signify ephemeral objects and characters. Such new referents are likely to occupy the object positions. These tendencies are the same for both male and female speakers. The only difference is that female speakers are more likely to allocate new referents to the off-timeline clauses. In section 4, the findings and some theoretical implications of this study will be discussed.

2. Critical Assessment of the Preferred Argument Structure Theory

2.1. Outline of the Theory

Du Bois (1985, 1987) identified speakers' preferences for locating new referents within clauses, which he termed the Preferred Argument Structure (PAS). Through his research on the narrative discourse of Sakapultek Maya (a Mayan language spoken in Guatemala), Du Bois focused on the relevance of the case system to the preferred positions for new information. In a morphologically ergative language such as Sakapultek Maya, the case-marking system is different from English in that the intransitive subject and the transitive object are treated in the same way morphologically. These two categories are grouped as absolutive, while the transitive subject is marked as ergative.

The narratives were collected by showing a short movie called "Pear Film" (Chafe, 1980) to 18 native speakers (15 female and 3 male) of Sakapultek Maya. The movie is about a boy who finds baskets of pears while cycling one day and the experiences he subsequently has with various people. The movie (http://www.pearstories.org/pears_video.htm) contains no dialogs, and its contents are considered interpretable regardless of the viewer's cultural background. After watching it, an interviewer asked each speaker to describe what had happened in the movie.

Du Bois classified the positions for the discourse referents into A (transitive subject; e.g., "Bill" in "Bill kicked a ball"), S (intransitive subject; e.g., "A kid" in "A kid came by"), O (object; e.g., "a ball" in "Bill kicked a ball"), and

Oblique (object of preposition; e.g., “a rock” in “He crashed into a rock”). This categorization was advocated by Dixon (1979, 1994) for characterizing the abstract semantic relationships of verbal arguments in an underlying structure.[2]

Du Bois (1985: 348–349, 1987: 818–824) found that a clause in Sakapultek Maya, whether transitive or intransitive, cannot contain more than one full NP (i.e., non-pronominal, overt NP) as its clause-core argument (i.e., A, S, and O). Although there were many instances of clauses with no lexical NPs, clauses with two lexical NPs were rare. Thus, there is a constraint, if not a categorical restriction, on the quantity of the NPs inside clauses, which became known as the **One Noun Phrase Constraint** (Du Bois, 1985: 348) or the **One Lexical Argument Constraint** (Du Bois, 1987: 819).

While transitive and intransitive clauses exhibit similar frequencies of single NP arguments, lexical NPs in transitive clauses tended to be the objects (O). This tendency, together with the fact that clause-core arguments in intransitive clauses are subjects (S), indicates that the preferred loci for lexical NPs are absolutive categories. Thus, speakers of Sakapultek Maya seem to avoid introducing a lexical NP into the transitive subject. This tendency became known as the **Non-Lexical A Constraint** (Du Bois, 1985: 348–349, 1987: 823). The One Lexical Argument Constraint and the Non-Lexical A Constraint comprise the grammatical dimensions of PAS.

Du Bois (1987: 830) found a strong correlation between the referent’s syntactic status as a lexical NP and its pragmatic property of being new, although lexical coding does not entail newness. Thus, the One Lexical Argument Constraint has a pragmatic dimension, which can be stated as the **One New Argument Constraint** (Du Bois, 1987: 824–826). Similarly, the Non-Lexical A Constraint can be characterized pragmatically as the **Given A Constraint** (1985: 349–350, 1987: 826–829).

2.2. Analysis of English: Accusative Patterning of New Referents?

Following Du Bois’ work on Sakapultek Maya, numerous researchers have corroborated the validity of the constraints in several typologically unrelated languages and in different genres of the same language (Du Bois, 1987: 837–

839, 2003a: 34–40, 2003b: 61–63, 69–70; Du Bois et al., 2003). In Kumagai (2006a), I conducted an analysis of English narratives and compared the results with those for Sakapultek Maya. The English corpus consisted of 20 female speakers of American English under the age of 30 who were enrolled at the University of California, Berkeley, and who saw the same movie as the Sakapultek speakers. The original goals of the research were to assess the hypothesis that "[g]rammars code best what speakers do most" (Du Bois, 1985: 344) and to find a correlation between usage (flow of new information) and form (morpho-syntactic properties of the preferred loci of new referents) by directly comparing the two languages based on the same analytical tools.

The narrative transcriptions of the 20 female speakers of American English are available online (http://www.pearstories.org/english/english.htm) and in Chafe (1980: 301–319). Immediately after watching the movie, a female interviewer asked each speaker to describe what happened in the movie. The interviewer informed them that she had not seen the movie.

It is relatively easy to determine which entities are codified as discourse referents with different pragmatic properties because we can refer to the visual information from the film. Thus, referents that are **new** (i.e., characters and objects in the film that are introduced into the narrative for the first time), **given** (i.e., entities already introduced and referred to in the prior narrative), and **accessible** (i.e., entities that are typically expressed by definite expressions at their first mention because of a certain inferential link to a prior discourse) were identified,[3] and their positions were explicated.

The results demonstrated that the English narratives, like those of Sakapultek Maya, satisfied the pragmatic constraints of the PAS theory; most spoken clauses took only one new referent per clause, and such new referents rarely occupied the A position. Both Sakapultek Maya and English exhibited the One New Argument Constraint and the Given A Constraint in the datasets collected in the same narrative tasks.

However, differences between the two languages also emerged when their referent distribution was examined in detail. Of 177 new referents in the Sakapultek narratives, only 3.4% (6 tokens) occupied the A position. Instead, a significant number of the new referents were allocated to the S and O

positions. Of these, 58 tokens (32.8%) were found in S and 42 tokens (23.7%) were found in O, with the remaining number of the new referents in the following non-core argument positions: Oblique (31.1%), Possessor (1.7%), and Other (7.3%) (adapted from Du Bois, Table 6 [1987: 826]). Therefore, the manner of new referent distribution in Sakapultek Maya coincides with its ergative case marking.

The similarity between S and O in Sakapultek Maya can be detected by examining the ratios of the new referents within each category; of 187 referents occupying the A position, only 3.2% (6 tokens) were new, while the new tokens (58) accounted for 22.5% of all the S tokens (258). In addition, new tokens (42) accounted for 24.7% of all the O tokens (170) (Du Bois, Table 6 [1987: 826]).

On the other hand, based on the analysis of the English narratives provided by the female speakers of American English in Kumagai (2006a: 686–690), new referent distribution in English is consistent with its accusative case marking because the distribution of the newly introduced referents in clause-core argument positions is skewed toward O (114 tokens [49.4%]), rather than S (46 tokens [19.9%]) or A (4 tokens [1.7%]) (based on Kumagai, Table 10 [2006a: 684]).

The similarity between A and S became evident through a comparison of the ratios of new referents within each category. Of 444 referents in A, only 4 tokens (0.9%) were new. Similarly, of 538 referents in S, 46 (8.6%) were new. However, the new O referents (114) accounted for 22.1% of all the O tokens (516) (based on Kumagai, Table 10 [2006a: 684]).

The distribution of referents within the clause-core argument positions among the female speakers of American English, with respect to the pragmatic properties of being new versus non-new, was found to be statistically significant by the chi square test (Kumagai, Table 12 [2006a: 687]). This indicates that the new versus non-new distinction of the discourse referents affects the way in which they are allocated to grammatical positions. Furthermore, the residual analysis showed that the referent distribution in S was closer to that in A than in O. In other words, new referent distribution in subject positions differed from that in post-verbal argument positions

(Kumagai, Table 13 [2006a: 688]).

Although Du Bois (1987) and Kumagai (2006a) indicated that the flow of new information may directly reflect the case-marking pattern of each language, the results above contradict Du Bois' hypothesis of a universally ergative pattern of new referents in discourse (1987: 838–839). Although the narratives of the female English speakers were found to be sensitive to the two pragmatic constraints of PAS, it is unclear whether the case system may be relevant to the information flow of new referents or whether new information flow is always ergative regardless of the case system of the language concerned. It is necessary to tackle this question by extending the data for the analysis.

2.3. Apparent Gender Difference in the English Narratives

Kumagai (2006b) observed that new referents in narratives by male speakers did not show the accusative patterning prevalent among the female speakers. The analysis of male speakers was performed in the same manner as that for female speakers. The male speakers, like their female counterparts, were native speakers of American English under 30 years of age enrolled at UC Berkeley. The recording was conducted in the same year (1975), and the same procedure was followed. The interviewer was the same researcher who had interviewed the female speakers. She informed the male speakers that she had not seen the movie.

The results in Table 1 are consistent with the One New Argument Constraint, because both male and female speakers were unlikely to produce more than one new referent per clause. However, there is a remarkable difference between them. As indicated by the percentage of intransitive clauses containing single new arguments, male speakers (14.1%) were more likely than female speakers (7.5%) to use S as a locus of new referent introduction.

Table 1. Transitivity and number of new arguments in clause-core positions

Females (20)	0 New		1 New		2 New		3 New		Total
	n	%	n	%	n	%	n	%	n
Transitive	683	90.6	66	8.8	5	0.7	0	0.0	754
Intransitive	579	92.5	47	7.5	0	0.0	0	0.0	626
Copulative	234	85.4	39	14.2	1	0.4	0	0.0	274
Total	1496	90.4	152	9.2	6	0.4	0	0.0	1654
Males (18)	0 New		1 New		2 New		3 New		Total
	n	%	n	%	n	%	n	%	n
Transitive	407	89.6	44	9.7	2	0.4	1	0.2	454
Intransitive	335	85.9	55	14.1	0	0.0	0	0.0	390
Copulative	108	84.4	19	14.8	1	0.8	0	0.0	128
Total	850	87.4	118	12.1	3	0.3	1	0.1	972

Source: Kumagai, Table 2 (2006b: 200)

The difference between the male and female speakers also seems clear in Table 2. Although both groups of speakers obey the Given A Constraint, there is a difference in the percentage of a new S (female: 8.6%; male: 15.7%). Such a difference is not found in the other clause-core arguments.

Because both groups were native speakers of American English describing the same experience and both datasets were collected in the same year from similar age groups using the same procedure, any difference in new information management in the two groups would have to be ascribed to the speaker's gender. However, it is counterintuitive to conclude that male narratives are more ergative in their new referent distribution because a language-internal system as robust as the alignment of referents to grammatical positions seems unlikely to be sensitive to language-external factors such as the gender difference.

Table 2. Grammatical role and information status of referents

Females (20)	New		Accessible		Given		Total
	n	%	n	%	n	%	n
A	4	0.9	0	0.0	440	99.1	444
S	46	8.6	0	0.0	492	91.4	538
O	114	22.1	12	2.3	390	75.6	516
Oblique	61	20.9	15	5.1	216	74.0	292
Other	6	50.0	0	0.0	6	50.0	12
Total	231	12.8	27	1.5	1544	85.7	1802
Males (18)	New		Accessible		Given		Total
	n	%	n	%	n	%	n
A	2	0.7	0	0.0	300	99.3	302
S	54	15.7	3	0.9	287	83.4	344
O	73	19.5	11	2.9	290	77.5	374
Oblique	67	28.9	17	7.3	148	63.8	232
Other	8	20.5	3	7.7	28	71.8	39
Total	204	15.8	34	2.6	1053	81.6	1291

Source: Kumagai, Table 3 (2006b: 201)

2.4. Excessive Abstraction of Referents' Properties

The conflicting result discussed in section 2.3 necessitates a reconsideration of the analytical method. To do so, some problems of my previous analyses will be addressed. First, I argue that the apparent differences between male and female speakers are attributable to the use of A-S-O categorization, which generalizes varying semantic properties of discourse referents. For example, although transitive subjects may have various semantic roles depending on the verb (Du Bois, 1985: 357; Hopper and Thompson, 1980: 251–255; Thompson and Hopper, 2001: 28) from agent ("another guy" in [1]) to location ("he" in [2]) or perceiver ("they" in [3]), those diverse roles are neutralized, and all the arguments in question are classified into a single category A:[4]

(1) and another guy picks up the rock, (Female Speaker 6)
(2) and he has three baskets, (F5)

(3) and they see this little accident. (F9)

Similarly, intransitive subjects cover not only agentive semantic roles ("a young boy" in [4]) but also theme-like or patient-like roles ("his hat" in (5)). S can also become an argument of a copulative sentence ("three little boys" in [6]):

(4) A young boy on a bicycle, [.45] that was much too big for him, [1.35] rode [.45] thee .. from the [.2] direction in which the goat [.25] person had come, (F12)
(5) and his hat flies off also. (F15)
(6) Now three little boys are .. a little b--it away from him. (F17)

Neutralizing semantic diversity may also conceal other important pragmatic properties of referents in a given argument position. It is therefore necessary to seek a finer degree of abstraction for this analysis.

2.5. Existential *There*-Constructions

Another problem with my past analysis is that no proper place can be found for existential *there*-constructions. As illustrated in (7), the post-verbal argument position is typically filled with a new human referent ("a man"):

(7) and there's a man at the top of the ladder, (F1)

Opinions vary among researchers regarding the syntactic category of the post-verbal argument. Fox and Thompson (1990) and Kumph (1992) assumed that the argument in question is an intransitive subject (S), while Lakoff (1987: 540–549) suggested that the subject of this construction is "there." The evidence supports Lakoff's view. In the tag-question formation, "there" behaves like a subject ("There has been an accident, hasn't there?"). The locative expression can sometimes trigger auxiliary agreement ("And then there's these three little boys, who are walking" (F5)).[5] It can also be used inside the accusative-with-infinitive construction, where "there"

functions as the subject of the infinitival complement (“I don’t want for there to be any trouble” [Zandvoort, 1975: 16]).

It should be noted, however, that the post-verbal argument of the *there*-construction is semantically close to O, given its theme-like role. The argument is also close to O syntactically because it is in a post-verbal position. Since these constructions contain conflicting properties, it is difficult to easily determine the membership of the argument position. Though this argument was classified as O in Kumagai (2006a, b) based on the syntactic properties of the *there*-constructions, this classification must be reconsidered for the following reasons.

Fox and Thompson (1990: 307–312) argued that the post-verbal argument in *there*-constructions exhibits important characteristics in the discourse. In the relative clauses whose heads occupy the post-verbal position of *there*-constructions (e.g., “there’s twins that- twins that live over there” [p.308]), the argument position (“twins”) tends to be occupied by non-identifiable human referents. Fox and Thompson suggested that “subject and object roles are used for quite different kinds of information in English” (1990: 310). Namely, subjects are likely to be associated with “definite, identifiable, specific human referents” (ibid.), while objects tend to be “associated with nonidentifiable, nonhuman, nonspecific referents” (ibid.).

If newness and non-identifiability are prominent factors for an object and the feature of humanness is easily associated with a subject, it follows that a new referent in the post-verbal position of the *there*-construction will tend to have both subject- (i.e., human) and object-like (i.e., new, non-identifiable) characteristics. Fox and Thompson also noted that new referents are introduced into this position “in order to be discussed further” (1990: 311) because “they are themselves of interest” (ibid.).

The results of my narrative analysis, to be outlined in section 3, corroborate the observations and findings of Fox and Thompson. New referents in the post-verbal argument position of *there*-constructions tend to be human. Most human referents are important characters that are persistently referred to in the subsequent narratives. On the other hand, nonhuman referents are less likely to be introduced in such constructions. If they do appear, they are treated

as ephemeral entities in narratives and are less likely to become persistent discourse referents. For further details, see Kumagai (2014). Because *there*-constructions have the important discourse function of introducing human (subject-like) but non-identifiable (object-like) referents into the post-verbal argument position for further reference,[6] treating the referent in this position as either S or O is unconvincing. Thus, the *there*-construction must be given its own status.

2.6. The Treatment of Intransitive Subjects

Subcategorizing S into agent-like intransitive subjects (**Sa**) in (8) and patient-like intransitive subjects (**So**) in (9) is inevitable because So-type subjects, like the *there*-construction, serve the important function of introducing new referents into discourse. As will be shown in section 3.2, most new referents in the S position have non-agentive semantic roles. Extending the A-S-O categorization is necessary to clarify this important property:

(8) A young boy on a bicycle, [.45] that was much too big for him, [1.35] rode [.45] thee .. from the [.2] direction in which the goat [.25] person had come, (F12) (= (4))
(9) and his hat flies off also. (F15) (= (5))

2.7. Two Types of Clauses Containing New Referents

A narrative contains not only temporally sequenced events but also the meaning and information that serve to add supplementary contents to such events. Thus, it is worth investigating the types of clauses in which new referents are situated and how much they contribute to the discourse contents.[7] I propose to classify the clauses in question into **on-** or **off-timeline** clauses (Thompson, 1987: 442). In Thompson's classification, events tend to appear in the on-timeline clauses, while both less-significant events and stative descriptions are typically found in the off-timeline clauses (cf. Labov's [1972: 359–362] **narrative clause** and Du Bois' [1980: 227–232] **narrative and descriptive modes**).[8]

Thompson's dichotomy can capture intricate linguistic phenomena more accurately than the notions of **foregrounding** and **backgrounding** (Hopper, 1979; Hopper and Thompson, 1980), in which a distinction is made in the narrative discourse "between the language of the actual story line and the language of the supportive material, which does not itself narrate the main events" (1979: 213). A problem with the notion of grounding is that its precise linguistic properties are difficult to define. For example, a temporally sequenced clause often corresponds to a foregrounded clause, but such a clause, while foregrounded in terms of its content, can nevertheless be displaced into a subordinate clause, the preferred position for background information.

Introducing foreground material into the subordinate clause is not an exceptional phenomenon. Thompson's (1987: 445, Table 1) analysis of written narratives indicates that 11% of subordinate clauses are on-timeline.[9] An analysis of appositive relative clauses by Loock (2010: 95–103) suggests that the continuative appositive relative clause in (10) can convey a temporally ordered event following the event expressed in the main clause. This indicates that a subset of appositive relative clause, while syntactically subordinate, may nevertheless convey foreground information. Loock (ibid.: 98) also noted that time adverbials (e.g., "then," "now," "later," and "in turn") can be added to such relative clauses as in (11), corroborating their on-timeline and eventive interpretations:

(10) So we asked a man, who shrugged his shoulders and disappeared into a nearby shop. (Loock, 2010: 96)
(11) So we asked a man, who then/after that shrugged his shoulders and disappeared into a nearby shop. (ibid.: 99)

Similar phenomena are observed in the Pear Film narratives, as the examples (12)–(14) illustrate:

(12) they [.9] go very close past each other, so that his [.6] his hat flies off. (F18)

(13) And everything was going fine until another person a girl came by on a bicycle, and he was looking at her, (Male Speaker 8)[10]
(14) And they go the other way, they're about forty yards apart when the guys come across his hat, which had fallen, (M17)

As Thompson (1987: 445–451) suggested, subordinate on-timeline clause may fulfill some discourse functions related to text cohesion (e.g., indicating dependency of one event on the other and emphasizing simultaneity of two events) and the avoidance of simple and repetitive listing of temporally ordered events in the main clauses. These examples indicate that we need to treat individual cases carefully, especially in terms of their relationship to neighboring clauses. Furthermore, we cannot decide on the timeline status of the clause by surface coding alone. The classification of on- and off-timeline clauses is considered an important clue to capturing the manner of new referent distribution.

2.8. Remarks on Coercion Phenomena

Finally, let us consider **coercion** phenomena (Couper-Kuhlen, 1989; Glasbey, 1998; Smith, 2003: Ch.4). When certain time adverbials indicating change in situation (e.g., "suddenly," "and then," and "now") are added to clauses in which predicates are lexically stative (e.g., "know," "resemble"), the time adverbials may override the original situation types of these verbs, resulting in eventive interpretations (compare [15] and [16]). Similarly, such time-adverbial expressions may highlight the dynamic nature of events in the progressive, as in (17). Examples (18) and (19) indicate that simply ascribing the basic aspectual property of a verb to the decision on the on- and off-timeline clauses may lead to an incorrect analysis:

(15) Mary knew the truth. (Smith, 2003: 71)
(16) Suddenly Mary knew the truth. (ibid.)
(17) Mary is resembling her mother day by day.
(18) and then, this little girl is riding on a bicycle and she passes him, (M7)
(19) Now, what happens is, three boys are walking along. (M7)

Progressives may convey the ongoing background situation of another clause, especially when they appear in subordinated clauses as in (20). However, as example (21) indicates, when they are used in independent main clauses, progressives can also highlight a gradual change or extended action without a time-adverbial expression (Labov, 1972: 387, footnote 14). Therefore, once cannot easily determine whether a given progressive is on- or off-timeline simply by looking at the surface forms.

(20) When I was taking a nap in my room, that huge tremor occurred.
(21) a man was picking pears in [.45] what seemed to be his orchard, [2.55 [1.1] a--nd [.8]] came along first, .. /someone/ came along first. (F16)[11]

Furthermore, certain *there*-constructions must be regarded as being on-timeline even when non-stative time adverbials are absent. Although they accompany a lexically stative predicate, they can nevertheless be used to present a referent to the discourse.

The visual information of the film goes a long way towards distinguishing temporally sequenced events from other materials, in addition to the ease and accuracy with which the pragmatic properties of the entities in the film are gauged. The visual information is also helpful in deciding whether the "events" or "states" expressed by the linguistic coding are appropriate for the contents. For example, a progressive sentence such as "I'm driving" can be used as a response to both "Would you like some wine?" and "Can I speak to you now?" In the former case, the response expresses a near future; in the latter, it expresses an ongoing event. Utterances with stative predicates (e.g., "I'm in," "I'm back") can be used when a speaker has entered the car or has returned home. The temporal structure of certain expressions cannot be easily figured out with the linguistic coding alone.

3. Information Flow in Narrative Discourse

3.1. Some Advantages of Using the Pear Film

In this section, we will re-explore the information flow of the Pear Film narratives under a framework that overcomes the problems noted in section 2. In order to ensure an equal number of female and male speakers, two male speakers were added to the discourse analysis. The speech of the additional male speakers was collected at UC Berkeley in the experiment described in section 2.3. These two male speakers, like the other male and female speakers, obey both the Given A Constraint and the One New Argument Constraint.

Du Bois (1987: 834–837) emphasized the choice of discourse genre and the quantity of new referents to be introduced into the spoken clause (i.e., information pressure) in the investigation of new information flow. Because the PAS constraints indicate the maximum possible number and loci of new referents inside a spoken clause, it is necessary to choose materials in which new characters and objects are frequently introduced. In this respect, texts in which only a few referents occupy argument positions cannot clearly show us whether the constraints in question are operational. Unlike conversational texts between close friends, in which the main characters tend to be both speakers and hearers and share a lot of background information, the Pear Film involves a number of protagonists whose information is not shared with the narrator and the interviewer. Such material, although somewhat artificial, is nevertheless more suitable for testing the upper-limit possibilities of new information in discourse.

Ideally, a decision on the type of clause a new referent belongs to must be made, as was done by Tomlin (1984, 1985, 1986, and 1987), without considering how the clause and the referent are coded linguistically because exclusive dependence on syntax may lead to circularity when determining the relation between the linguistic form and its significance in discourse. If we can rely on visual information, for example, the correlation between the clause and the referent can be investigated in a reliable manner. The

visual information from the Pear Film can help us determine the information status of characters and objects expressed in the spoken clause, distinguish temporally sequenced events from other materials, and easily and accurately decide whether the “events” or “states” expressed by the linguistic coding are appropriate for the contents (see section 2.8).

3.2. The Pragmatic Properties of Discourse Referents

Following the theory of information flow by Chafe (1987, 1994, inter alia) and the theory of discourse analysis by Du Bois (1980, 1987), nominal expressions referring to concrete objects or characters in the movie were analyzed as discourse referents. The analyzed tokens were confined to the referents coded explicitly in either a clause-core or a non-core argument position of finite clauses. Head nouns were classified as being new, accessible, or given, with their positions and roles (i.e., A, Sa, So, O, There, Oblique, and Other) specified. Example (22) illustrates a series of spoken clauses observed at the beginning of one female speaker’s narrative (Chafe, 1980: 304):

(22) Okay, [2.05 .. u--h [1.1]] the movie is basically about uh [.2] u--m [.85] a number of [.45] individuals, [.6] uh a guy who’s picking pears, [2.1 [1.0] u--m [.6]] and a kid on a bicycle. Basically those are the two .. protagonists in this. [2.8 [1.05] And .. um [.6]] the guy who is picking pears, [3.15 um [2.35] um [.35]] picks the pears and puts them in a [.45] in um [.4] these baskets that he has. (F3)

New referents signify **inactive** concepts (Chafe, 1987: 31–36; 1994: 71–76). They include characters and objects in the film that appeared for the first time in the narrative (i.e., “a guy who’s picking pears” and “a kid on a bicycle”). Therefore, the heads of each NP, namely “a guy” and “a kid” are counted as new referents. In the last clause, things expressed by “these baskets (that he has)” were not mentioned previously in the narrative. The head noun of this expression is classified as another new referent.

Given referents signify **active** concepts (Chafe, 1987: 26–28; 1994: ibid.)

previously mentioned in the narrative. Thus, they establish an anaphoric relation with another expression in the prior discourse. Since the pronominal expression "those" in (22) refers to characters previously mentioned in the narrative (i.e., "a guy [who's picking pears]" and "a kid [on a bicycle]"), it is regarded as given. Similarly, "the guy (who is picking pears)," "the pears," and "them" are given referents.

Accessible referents signify **semi-active** concepts (Chafe, 1987: 28–31; 1994: ibid.), which are likely to be realized as definite expressions at the first mention. Accessible referents are inferentially linked to the characters or objects already introduced into the prior discourse. Typical examples of the accessible referents are body part expressions of characters, as in (23) and (24):

(23) and he's [.4] turning his head,.. behind him, looking at her, (F5)
(24) and he's [.7] checks his leg to make sure [.6] to see if he's got any [.25] bruises or anything. (F10)

Note that "head" in (23) and "leg" in (24) were mentioned for the first time in the narrative. Since the body parts were always preceded by a mention of their owners, the previous introduction of the owners into the narrative is assumed to facilitate evocation of a semantic frame or schema (Chafe, 1987: 29–31) in which body parts are assumed to be easily associable elements.

Phrases such as "the movie" and "a number of individuals" in the first spoken clause were excluded from the count because the former refers to an artifact of the experimental situation and the latter does not refer to specific objects or characters. Similarly, the phrase "the two protagonists" was excluded from the count because it does not directly refer to any particular character, instead defining a type of character or object to be introduced into the narrative. Du Bois (1980: 256) terms such expressions **dummy** or **slot** expressions. Because the pronoun "this" in the same clause refers to the movie, it was likewise excluded for the same reasons. A deleted subject, although considered to be given, was excluded from the text count because it was not coded explicitly as a linguistic expression. Furthermore, speech act

participants (e.g., “I,” “you,” and “we”), words and phrases under the scope of negation, generic NPs, and predicate nominals were not counted because they do not refer to specific objects or characters in the movie.

3.3. Results

The proposed analytical tools can now provide us with an explicit characterization of the manner of new referent distribution, as seen in Table 3.[12]

Table 3. New referent distribution and gender difference in two types of clause

On-timeline	A	Sa	So	O	There	Oblique	Total
Females (20)	4	3	40	49	24	50	170
	2.4%	1.8%	23.5%	28.8%	14.1%	29.4%	100.0%
Males (20)	2	7	50	39	23	66	187
	1.1%	3.7%	26.7%	20.9%	12.3%	35.3%	100.0%
Off-timeline	A	Sa	So	O	There	Oblique	Total
Females (20)	0	1	2	33	9	8	53
	0.0%	1.9%	3.8%	62.3%	17.0%	15.1%	100.0%
Males (20)	0	0	0	24	3	5	32
	0.0%	0.0%	0.0%	75.0%	9.4%	15.6%	100.0%

Fisher’s exact test: p = 0.334339 (On-Timeline); p = 0.691335 (Off-Timeline)

Fisher’s exact test was conducted on the analyzed data in Table 3 to investigate whether the distribution of new referents to the grammatical positions in the two types of clauses may be affected by the speaker’s gender. The result indicates that the distinction between male and female speakers is not significant in either type of clause.

In both female and male narratives, the on-timeline clauses are more relevant than the off-timeline ones for new referent introduction because the majority of new referents (76.2% [170/223] for females; 85.4% [187/219] for males) are allocated to on-timeline clauses. This result is consistent with the view that temporally sequenced clauses may play a crucial role in the flow of new information. To corroborate it statistically, Fisher’s exact test was conducted on the data in Table 4:

Table 4. New referent distribution and clause types in male/female narratives

Females (20)	A	Sa	So	O	There	Oblique	Total
On-timeline	4	3	40	49	24	50	170
	2.4%	1.8%	23.5%	28.8%	14.1%	29.4%	100.0%
Off-timeline	0	1	2	33	9	8	53
	0.0%	1.9%	3.8%	62.3%	17.0%	15.1%	100.0%
Males (20)	A	Sa	So	O	There	Oblique	Total
On-timeline	2	7	50	39	23	66	187
	1.1%	3.7%	26.7%	20.9%	12.3%	35.3%	100.0%
Off-timeline	0	0	0	24	3	5	32
	0.0%	0.0%	0.0%	75.0%	9.4%	15.6%	100.0%

Fisher's exact test: p = 4.26636e−05 (Females); p = 0.734427e−08 (Males)

The result indicates that the categorization of clauses into two types strongly affects the way in which new referents are distributed to the grammatical positions in both male and female narratives.

On the one hand, new referents tend to be allocated to the clause-final positions (i.e., O (= [25]), *There*-Construction (= [26]), and Oblique (= [27]), whether in the on- or off-timeline clauses.

(25) and he's riding along /and/ he hits a rock. (F13) [On-timeline]
(26) There's a--uh [.4] farm laborer, (F5) [On-timeline]
(27) somebody comes by with a [.65] walks by with a goat or something… (F10) [On-timeline]

On the other hand, the clause-initial, patient-like argument (i.e., So) of on-timeline clauses also accommodated a fairly large proportion of new referents for both female (23.5%) and male (26.7%) speakers, as illustrated in (28) and (29):

(28) and a man comes by leading a goat. (F19)
(29) and then these three other kids came along, (M15)

It seems clear from the information displayed in Tables 3 and 4 that So

in the on-timeline clauses is more likely to be utilized than Sa or A for the task of new referent introduction. In terms of new information flow, we can state that patient-like subjects behave like objects (Lambrecht, 1994, 2000). In other words, agentive subjects are the least preferred positions for new information.

Of further importance is the fact that the manner of new referent distribution in on-timeline clauses exhibits S-O (more precisely, So-O) alignment as far as the clause-core argument positions are concerned. The ergative flow of new information in the temporally ordered clauses indicates that ergativity is partly discourse based (Du Bois, 1987). This partial ergativity is a reflection of the pragmatic pressure for new referent introduction, although it is not a strong motivator for shaping the case-marking system of English (Du Bois, 1985, 1987; Newmeyer, 1998: Ch.3; Dixon, 1994: Chs.7 and 8).

Finally, let us examine the off-timeline clauses. They have a stronger tendency than on-timeline clauses to allocate new referents to the clause-final positions (94.4% for females; 100.0% for males). Although the total number of new referents is nearly the same (female: 223; male: 219), female narratives have a higher proportion of new referents in off-timeline clauses (53 tokens for females; 32 for males). This indicates that female speakers tend to pay attention to not only the storyline of the film but also other properties of characters and things, which is reflected by their use of O (= [30] and [31]), *There*-Construction (= [32]), and Oblique (= [33]):

(30) and he wears a white apron, [1.55 [1.3] to ..] hold the pears in. (F8)
(31) he had three baskets beneath the tree, (F12)
(32) there's a rock in the r road, and he [.25] hits it with his bike, (F5)
(33) … And UH /clears throat/ … UM-- … anyhow he was up in a ladder. (M20)

The new referents in the off-timeline clauses tend to be objects that do not become persistent topics in the subsequent narratives. Such new referents are likely to appear in the O position (62.3% for females; 75.0% for males).

Although the overall distribution of new referents in each type of clause

did not significantly differ by speaker gender, as indicated in Table 3, we can nevertheless detect subtle differences between the male and female speakers. Male speakers were more likely to concentrate on mentioning persistent characters and objects in on-timeline clauses, making their narratives similar to reports. However, female speakers were more attentive to matters that do not necessarily serve to advance the storyline. This characterization and the overall distribution patterns in Tables 3 and 4 are specific and open to a discussion and critical examination, in contrast to the analysis based on the A-S-O categorization, which may lead us to speculate that male narratives are more ergative than female narratives.

3.4. Summary

In this study, I provided a descriptive framework for capturing the flow of new information in a narrative discourse by rethinking the level of abstraction of the analytical tools and focusing on the timeline properties of clauses where new referents appear. This approach generated the following results.

First, new referents with the potential of being referred to persistently in a discourse are more likely than other types of new referents to appear in clauses that contribute to shaping the contents of a narrative. Second, such new referents have preferred loci: non-agentive positions (i.e., So, O, clause-final position of *there*-construction, and oblique NP). Third, even the new referents that are less relevant to the storyline have a preferred locus in which they are situated (O).

These findings indicate that the new information flow in English is not arbitrary; rather, it reflects the semantic similarity between non-agentive intransitive subjects and objects. The new information flow in English can be regarded as ergative in the on-timeline clauses, but it is not ergative in the off-timeline clauses. Although a gender difference was detected in the new information flow in the off-timeline clauses, this should be interpreted as a difference in the type of attention paid to the story, which is reflected in the linguistic coding.

4. Some Implications

The findings of this study only appear to reflect a language-specific tendency in English, but they could have important implications for the analysis of other languages. Let us discuss the following points: the validity of subcategorizing intransitive subjects and the availability of the constructions used for new referent introduction.

4.1. Semantic and Pragmatic Sub-Classification of Intransitive Subjects

Durie (2003) lent support to the argument for sub-classifying intransitive subjects into So and Sa. According to Durie, intransitive verbs in Acehnese (an Austronesian language) are classified into morphologically distinct classes, based on whether S is an actor or undergoer: Sa (actor), So (undergoer), and Se (undergoer of nonverbal predicate).

Durie found through his discourse analysis that the morphological splitting of S in Acehnese is "not just a property of the grammatical coding system: it is also reflected in pragmatic alignments of grammatical roles in texts" (p.181). The actor roles are least likely to accommodate new information (only 2% of A and 6% of Sa take new referents). In contrast, O has the highest percentage of new information (43%), and both Se (35%) and So (31%) come closer to O (all the relevant data are taken from Durie [Figure 3, 2003: 180]). Thus, subcategorizing intransitive arguments can reveal important semantic and pragmatic properties of languages.

4.2. Properties and Functions of Special Constructions

To promote a finer categorization of argument positions in English, we granted special status to *there*-constructions and non-agentive intransitive subjects (So), both of which were found to have important pragmatic functions for new referent introduction. It must be noted that this is not an ad hoc treatment for English because similar phenomena involving special constructions also exist in other languages. For example, Du Bois (1987: 831) noted the tendency of many Sakapultek speakers to use the semantically empty intransitive verb *k'o:(l)*- ("there is"). According to Du Bois, these

speakers tended to introduce new referents in intransitive sentences first before developing their narratives with transitive clauses.

The use of special constructions for new referent introduction is also observed in French. Speakers may use the expressions *voici/voilà NP*, in which the new referent is introduced as if it were an object of the perception verb *voir* ("see"). Lambrecht illustrated some other constructions in which new referents are introduced into an impersonal construction, as in (34), or into a cleft construction, as in (35). In both cases, the new entities appear in the object position of a transitive verb *avoir* ("have"):

(34) Y'a le telephone qui sonne!
there-has the phone that rings
"The phone's ringing!" (Lambrecht, 1986: 246)
(35) J'ai ma voiture qui est en panne.
I have my car that is in breakdown
"My car broke down." (Lambrecht, 1994: 14)

Both the entity and predicate form a single event in which the entity is introduced into the discourse as a new referent. Although the detailed linguistic mechanisms for new referent introduction may vary from language to language, the three languages share a similarity in how they introduce new entities into clauses: the agentive subject position is avoided as a locus for new referents.

5. Conclusion

The analytical method in this study can clarify some consistent patterns in the flow of new information in English narrative discourse. The validity of this method is justified because the results of discourse analysis properly capture both the similarities and differences between the two types of speakers. A finer categorization of referents and recognition of constructions for new referent introduction can be justified from facts found in languages other than English.

The insights gained from this study can also be applied to other types of narrative data with multiple **context spaces** (Reichman-Adar, 1984), and conversational data containing numerous speech act participants and modal expressions. The present analysis may not be amenable to a speedy scanning of large bodies of data because it requires a more in-depth, time-consuming analysis of smaller amounts of data. Nevertheless, this time-consuming approach seems to be essential for obtaining a satisfactory understanding of the information structure of discourse, whether it be narrative or a conversation.

Notes

1 I would like to thank Wallace Chafe for his warm encouragement and support. I especially thank him for providing me with the male speakers' narrative data, which was collected at UC Berkeley but never published. The main idea of this article was presented at the Colloquium at the Graduate School of International Development, Nagoya University on March 29, 2011; the Thirteenth International Pragmatics Conference in Delhi, India, on September 9, 2013; the Fourth Linguistics Colloquium at Nara Women's University on March 27, 2014; and the Second International Workshop on Information Structure of Austronesian Languages at the Research Institute for Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies, on February 11, 2015. This research was supported by the Japan Society for the Promotion of Science (JSPS), Grant-in-Aid for Scientific Research (KAKENHI) (C), Grant Number 21520511.

2 Du Bois and other researchers of the PAS theory apply this categorization method to surface-level arguments (Du Bois, 2003a: 30).

3 For more details on the pragmatic properties of the discourse referents, see section 3.1.

4 See the Appendix for details of the transcription conventions of the female narratives. Throughout this article, I underlined the parts for exposition that are relevant to the illustration and/or discussion.

5 Fox and Thompson (1990) seem to assume that the post-verbal argument in the *there*-construction is "the subject of that clause, since it can always trigger auxiliary agreement" (p. 310). Unfortunately, their observation appears to be contradicted by one of the examples cited in their article:

(i) there's twins that- twins that live over there, (ibid.: 308)

6 Another reason for avoiding a non-identifiable referent in the subject position is that it may be difficult for speakers involved in a spontaneous discourse to introduce a new entity into the subject and talk about it further in the same clause (Du Bois' [1987]) Given A Constraint and Lambrecht's [1994] **Principle of the Separation of Reference and Role**). Instead, speakers are thought to utilize a special construction in which the subject position is a locative phrase and the entity in question is located in the post-verbal position.

7 See Dixon (1994: 208, footnote 1) for a similar view.

8 According to Du Bois, clauses in the narrative mode serve to advance a storyline, while those in the descriptive mode express "categorizations, descriptions of clothing, statements of relation to other discourse participants" (1980: 227). Based on this dichotomy, however, some activities that do not significantly contribute to the storyline may be grouped in the narrative mode, which may obscure the result of a narrative analysis.

9 Reinhart (1984: 796) noted that narrators may purposefully place a temporally sequenced event into an embedded or subordinate clause to treat it as background information. Despite such an important observation, Reinhart eliminated temporally ordered information in subordinate clauses from the domain of her investigation following Labov, who assumed that subordinate clauses do not serve as temporally ordered clauses because "once a clause is subordinated to another, it is not possible to disturb its semantic interpretation by reversing it" (1972: 362).

10 The male narrative data do not accompany special prosodic and temporal transcriptions that can be found in the female narratives.

11 In (21), the Given A Constraint is violated. Such an instance, although rare, may nevertheless appear at the beginning of a narrative, in which a narrator can prepare for their utterance and may treat a new referent as if it were given (Du Bois' [1987: 838–839, footnote 20] **initialization effect**).

12 New referents in the "Other" category and cases in which categorization into either type is problematic were excluded. The results in Tables 3 and 4 reflect the revision of the past data analyses. The statistical tests were conducted with software provided by Shigenobu Aoki of Gunma University (http://aoki2.si.gunma-u.ac.jp/exact/exact.html).

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Appendix

The following symbols were used by Chafe (1980: 301) for special purposes. If the illustrated utterances do not have any symbols indicating sentence-final intonation, it means that there is another utterance immediately following it. Since only the relevant portions are extracted, some examples do not start with a capital letter.

.	sentence-final falling intonation
?	sentence-final level or rising intonation
,	clause-final but not sentence-final intonation
/X/	X may not be an accurate transcription
/?/	portion unintelligible
ay	indefinite article pronounced to rhyme with “say”
thee	definite article pronounced to rhyme with “see”
--	lengthened segment
..	break in timing too short to be measured as pause

[X]	pause lasting X seconds
[X [Y] a--nd u--m [Z]]	a sequence lasting a total of X seconds, consisting of a pause of Y seconds, “a--nd u--m,” and a pause of Z seconds

英語ナラティブにおける新情報の流れを捉える

熊　谷　吉　治

“Pear Film” という無声短編映画を観た後にあらすじを語った米語母語話者（男性20人、女性20人）の発話記録を元に、談話で初めて登場する人や物が文のどの位置に現れやすいか、発話資料をどの程度の抽象度で分析すると的確に情報構造を捉えられるかを論じた。

文の項（argument）を A（他動詞主語）、S（自動詞主語）、O（目的語）のように分類する方法は、抽象度が高く、当該項位置に現れる指示物の意味的多様性を包み隠してしまう恐れがある。また、繰り返し言及されやすい登場人物を談話に導入する役割を持つ There 構文の文末の項位置を、単純に「主語」か「目的語」に還元することは困難である。

本研究では、自動詞主語の意味的多様性に留意し、S というカテゴリーを Sa（行為者の意味役割を持つ項）と So（行為者ではない意味役割を持つ項）に分け、さらに、There 構文に独自のステータスを与えることを提案する。

加えて談話に現れる文を、ストーリーの時間的な変化に直接関与する文（On-Timeline Clause）と、そうでない文（Off-Timeline Clause）に分けることにした。映画の画像情報を頼りにしながら、表層的な言語表現と実際の意味内容とのずれにも配慮し、新情報の現れ方を整理して男女の比較を試みた。

その結果、ストーリーの時間的変化に関わる内容を表す文では、新情報の現れ方に男女差はなく、文の中核的項に関する限り、新情報は So と O に現れやすいことが明らかになった。これは談話における能格性（ergativity）の具現と考えることができる。一方、ストーリーの時間的変化に関与しない内容を表す文では、新情報の現れ方に男女差が見られた。しかしこの差は、映画の内容にどこまで注意を払うかの差であり、出来事や状態の記号化の方法そのものに男女差があるという事ではない。