Processing Interclausal Relationships

Studies in the Production and Comprehension of Text

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Chapter 5

Interclausal Connectives as Indicators of Structuring in Narrative

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Discourse allows its users to share stories, build conceptual understandings, express attitudes and perspectives, and engage in vicarious experiences. Writers, speakers, readers, and listeners of discourse make use of a variety of linguistic devices to achieve these various purposes. The role that one such set of devices, *interclausal connectives*, can play in accomplishing the goals of discourse is reviewed in this chapter.

The discourse function of interclausal connectives has been a source of disagreement in recent times. Some researchers see connectives as peripheral to discourse and omit them from their study of the discourse structure and function (Kintsch, 1977; Stein & Glenn, 1979; Trabasso & Sperry, 1985).

Others researchers give connectives a minimal role—that of marking relations between adjacent clauses (Chomsky, 1957; Gleitman, 1965; Halliday & Hasan, 1976). It is this view that underlies the very name of these discourse elements: interclausal connectives. Chomsky (1957), in his classic work, *Syntactic Structures*, assigns a simple syntactic role to the coordinate conjunction subclass of connectives. These connectives serve to conjoin any two constituents of the same type from different sentences into a single sentence, provided the rest of the original sentences are identical. He notes that qualifications of this simple rule may be necessary. Gleitman (1965) takes up Chomsky's syntactic approach and defines those qualifications. The result is a highly complicated set of syntactic rules to account for the syntactic constraints for different connectives. Halliday and Hasan (1976) considered conjunctions that are intersentential, rather than intrasentential connectives. In their view, these

connectives are discourse cohesion devices that link adjacent sentences. Their view differs, in this respect, from Chomsky and Gleitman, but is similar in that the connectives link successive clauses, and their role is one of establishing structural ties between these clauses.

Another group of theorists have shown that connectives are sometimes used to mark larger, global units of discourse. They add to their interclausal role another function, one that involves discourse structuring (Schiffrin, 1987). In this view, connectives occurring between clauses have been called *discourse markers*.

We have argued that interclausal connectives can play an even more central role in discourse (Segal, Duchan, & Scott, 1991). For example, we found that connectives signaled the structural relations between elements in simple narratives and that they were thus crucial in building a coherent mental model for interpreting happenings in the story world. Without such connectives, the reader would not be able to build the intended model. We thus are more comfortable calling interclausal connectives *model-building connectives* so as to focus on their conceptual, rather than linguistic function.

This view of model-building connectives is associated with theorizing about the organization and function of narratives. We have proposed that tellers of narratives present and construct the narratives so that the audience (readers or listeners) can experience vicariously the events that make up the story. To do this, the teller derives the details of the story from a multidimensional mental model that represents aspects of a story world. It is proposed that the teller and the audience are each able to shift from a here-and-now perspective into a conceptual location within the world of the story. For example, in the story of *The Wizard of Oz* (Baum, 1900), both the writer and reader (viewer) walk down the yellow brick road with Dorothy and her friends. Those experiencing the story become engrossed in it, conceptually leaving their living rooms to join the events in the imaginary world of munchkins, witches, and wizards.

Our theory holds that this perspective shift to within the story world is necessary to interpret everyday deictic terms such as *I, we, this, today, recently, come,* and *here*. A major part of the meaning of these terms is determined by the situation in which they are used. *I* refers to the speaker; *this* refers to an object nearby; and *today* refers to the present day. In narrative, these deictic terms often are interpreted from a space–time–person origin within the story itself. *I* is a focal character in the story, *this* is a focal object or place; *today* is the time of the event being described. To meaningfully interpret these terms, the teller and reader must situate themselves within the world of the story.

In everyday discourse, interlocutors (speakers and listeners) interpret deictic terms from the here-and-now of their current situation. We claim that deictic

terms in narrative discourse are interpreted from a perspective within the model. Interpreters thus experience the narrative world from a deictic center within it. This narrative discourse theory is called the *Deictic Shift Theory* (Duchan, Bruder, & Hewitt, 1995; Duchan, Meth, & Waltzman, 1992; Galbraith, 1995; Segal, 1990; 1995a; Segal, Bruder & Daniels, 1984; Segal, Duchan, & Scott, 1991).

This deictic shift is manifest in a variety of ways in discourse structuring—ways that affect interpretation of much more than deictic terms. One of the more obvious manifestations is through the use of definite noun phrases. The interpreter, upon hearing a definite noun phrase, is led to place the object identified into an accessible place in the story. Once the object is created and localized, pronouns can refer directly to them. Adverbial phrases are another way deixis is manifest in discourse. When such phrases are placed at the beginning of sentences, they often signal to the interpreter that there will be a deictic discontinuity in the story line. This could be a shift in space, time, or character.

In *The Pearl*, John Steinbeck (1954/1975) wrote "Kino squatted by the firepit and rolled a hot corncake and dipped it in sauce and ate it" (p. 5). Steinbeck has us witnessing Kino as he sits near a particular hot firepit, eating a corncake. While reading this phrase the deictic center in the story is with Kino at the firepit. Moreover, the firepit exists in the story, as a specific entity that lasts through the activity of eating corncakes and beyond. Once it is referred to by the author, it becomes a substantial entity within the story world. Its continuity is experienced as objects in the real world are, and it is expected to "behave" as a firepit throughout the story.

In this same example, there are two instances of *it*. By some interpretations, these pronouns refer to the word *corncake*. This construal casts them as anaphoric pronouns (Halliday & Hasan, 1976). That is, they stand for their antecedent—a word. The deictic shift view holds that the corncake exists in a mental model and the *it* refers to that mentally constructed entity, not the word that labels it.

Research on discourse deixis has shown how referring expressions tie to conceptual elements in the interpreters' models, rather than to lexical meanings associated with words in the text (Greenspan & Segal, 1984; Segal, 1995b; Wiebe, 1995). We have also identified how expressions can be interpreted from different perspectives within the same mental model. That is, interpreters can shift their perspective from an objective view of the events taking place in the story world to an observation of the world from the subjective perspective of a character within the story. Weibe (1995) studied language devices that signal shifts from an objective orientation of a scene to a character's subjective interpretation of the same scene.

Consider this example: "She [Hannah] winced as she heard them crash to the platform. The lovely little mirror that she had brought for Ellen and the gifts for the baby!" (Franchere, 1964, p.3).

We, the readers, see Hannah wince and, with her we hear the objective crashing of something to the platform. We then enter the subjective world of Hannah's mind as she thinks about what it is that fell and what it means to her. Thus we shift our mental perspective from what is physically occurring to one that observes Hannah's subjective experience of it.

The role interclausal connectives play in discourse is clarified when they are viewed in the Deictic Shift Theory. In Segal, Duchan, & Scott (1991) we showed that narratives have a range of interpretations that vary depending upon the connectives they contain. The primary role for the connective *and* is to mark continuity between information in the upcoming clause and previously known events. When an *and* occurs, this signals to the interpreter that the events connected by the *and* are to be seen as a single conceptualized unit rather than simply as a concatenated string.

Then, in contrast with *and*, was found to signal discontinuity in the discourse line and not just to mark temporal relationships between adjacent clauses (Duchan, Meth, & Waltzman, 1992; Segal et al, 1991). Often the content following *then* requires a deictic shift. *Then* marks shifts in location or time, or it introduces a new character or redirects an interpreter to a previously identified one.

We also found (Segal et al, 1991) that causal connectives *so* and *because* often signaled a shift into a subjective perspective in addition to marking causal relations between events. A 5-year-old boy, Wally, used these connectives to explain the thinking process of his main character, a little lion (Paley, 1981):

> Once upon a time there was a little lion and he lived alone *because* his mother and father was dead. And one day he went hunting. And he saw two lions. And they were his mother and father. *So* he took his blanket to their den. *Because* it was bigger. (p. 9)

For each of the uses of the causal connectives, Wally accounts for the lion's behavior based on how the lion thinks about his experiences. He lived alone because he thought his mother and father were dead. *So* and the second *because* are part of a complex subjective argument by the lion for why he moved in with his parents (because their space was bigger than his) and what the move entailed (taking his blanket to their den).

From examples like this, one learns that what is connected by an interclausal connective is not always expressed directly in the text. Rather, it may be created from common knowledge applied to the mental model (Clark, 1992; Schiffrin, 1987; Stalnaker, 1978). The language of the story provides only a skeleton of

the mental representations. Interpreters are free to, and indeed often are required to, fill in needed information to make sense of the text.

The role of connectives in narratives, then, is to guide the interpreter as to how to construct meaning for a text. They tell interpreters when to add information, and what they need to supply to make the text coherent. The connectives provide cues for how events and objects in the story relate to one another. In this way, connectives function to help interpreters build a mental model of the narrative.

To further develop the idea that the process of modelbuilding is guided by connectives, a detailed analysis is conducted how the connective *but* functions in several types of naturally occurring discourse. *But* offers us a nontrivial example of how a connective occurring in natural discourse adds significantly to the interpretation of the discourse. It also provides a concrete demonstration of different ways that analysts have represented the role of connectives in discourse.

Some previous accounts of *but* have cast its interpretation in terms of propositions surrounding the term. They often ignore the discourse contributions or functions of *but* and treat the connective as a logical operator signaling adversative, contrastive, or concessive relations that hold between propositions in the text (e.g., Bloom, Lahey, Hood, Lifter, & Fiess, 1980). Bloom, et al., assumed that children's acquisition of *but* involves their learning adversative relations between clauses and their using of *but* marks those relations.

Similarly, R. Lakoff (1971) identified one use of *but*, what she calls the "semantic opposition *but*," as marking a simple opposition between elements of a text. In this case, there are two opposing elements and *but* marks their contrast. In the sentence "John is tall, but Bill is short" (R. Lakoff, p. 133) the *but* marks the contrast in height between John and Bill.

R. Lakoff (1971) also pointed to instances in which elements of the text fail to directly illuminate the contrast existing between the clauses surrounding *but*. She attempted to solve this problem by claiming that preexisting presuppositions fill in the needed information. For example, she described one type of propositional relation between clauses surrounding *but* as requiring a presupposed expectation. The expectation allows the two clauses connected by *but* to be a valid grammatical structure. To interpret *John hates ice cream, but so do I*, one must presuppose that the usual case is that John and the speaker have different tastes in food and that this case is marked as unusual through the use of *but*. G. Lakoff (1971) incorporated the aforementioned analysis into a symbolic notation system that makes the presupposition explicit:

Assertion: S1 and S2
Presupposition: Expectation = (S1 implies not S2)

The S1 as applied to the aforementioned example about ice cream is *John hates ice cream.* S2 is *so do I* (hate ice cream). Because *but* is used rather than *and*, we are required to presuppose the expectation *If John hates ice cream, I will not.* *But* is thus used when S2 occurs in a context in which its opposite would be expected. This logical (semantic) analysis gives *but* the simple role of conjoining two clauses under the condition that Clause 1 and Clause 2 are contrastive.

Other, more recent accounts of *but* have given additional freedom to what *but* can mean (Schiffrin, 1987; Thompson & Mann, 1986). Thompson and Mann analyze *but* as a marker of *concession* in which a contrast in the mind of the reader is to be reinterpreted as a compatibility. They provide the following example in which they claim that the recipient of a letter is being invited to consider a new interpretation of a contrastive relation (Thompson & Mann, 1989, p. 440):

1. Your kind invitation to come and enjoy cooler climes is so tempting.
2. but I have been waiting to learn the outcome of medical diagnosis.
3. and the next three months will be spent having the main thumb joints replaced with plastic ones.

A typical reading of the aforementioned passage would have *but* signaling a contrast between going to *cooler climes* and being unable to go because of a *medical diagnosis* and need for surgery. Thompson and Mann, however, go one step further and suggest that the reader, after seeing the conflict between enjoying *cooler climes* and needing thumb surgery, comes to realize that the two goals are ultimately compatible (e.g., *The visit will have to be put off*). This interpretation is motivated by the presumed need of the letter's author to demonstrate sincerity in his refusal of the invitation—*but* helps show that thumb surgery is *not just an excuse for not visiting.*

Schiffrin (1987), like Thompson and Mann, allows for a rich interpretation of *but*. She analyzes an argument during a conversation into an abstract discourse structure and shows how *but* and the following clause fits that discourse structure. In some cases, *but* introduces a statement in support for an argument; in others cases, *but* introduces a new position. The role *but* plays for listeners is to signal that the point made following the *but* contrasts in some way with the information currently in focus. In Schiffrin's analysis, *but* marks the introduction of these contrasts. It does not, however, inform the interpreter as to what relations are being contrasted, nor does it provide a conceptual mechanism for creating such contrasts.

What we intend to demonstrate from the analyses that follow is how our constructivist deictic shift view expands on the semantic–syntactic function for

the connective *but* provided in early renditions of formal logic frameworks, at the same time, limiting the possible interpretations provided within the more recent discourse inferential approaches. Further, analyses are aimed at arriving at a conceptual framework that gives *but* a stronger than usual role in the construction of plausible interpretations of narrative discourse.

The sources of *but* usage were the following texts: (a) *Wally's Stories* (Paley, 1981)—transcriptions of short oral narratives produced by a 5–year–old child; (b) *The Wizard of Oz* (Baum, 1900/1956), a well–known story written for children; and (c) *The Garden Party* (Mansfield, 1954), a short story written by an adult for an unfamiliar, adult audience.

The analyses were aimed at discovering what the producers of discourse were attempting to convey in the passages that contained the term *but* and how the term functioned to achieve their goal. We interpreted what was being conveyed by *but* in light of what was offered by the adjacent clauses surrounding it as well as what had been built up in the mental model from the text preceding it. From this information we derived a set of regularities that accounted for most of the situations in which *but* occurred.

A CHILD'S ORAL NARRATIVES

The first 10 occurrences of *but* were examined in a set of 20 oral stories told by a 5–year–old to his teacher over a period of a year (Paley, 1981). The stories ranged in length from 6–23 clauses. There were 13 instances of *but*, all occurring in clause-initial position. The analyses of the first 10 showed the following relational contexts in which *but* occurred.

A Failed Psychological Anticipation

In these cases, the character's goals, wishes, hopes, and expectations were not fulfilled. There were two instances that qualified under this relation. In the first example, a father's goal, mentioned in the third line, is to find his son on the moon. But his expectations are not fulfilled in line 6 (Paley, 1981, p. 65).

1.1 The father didn't see him
2 and then he went out to find the boy.
3 He thought maybe the boy flew up the moon
4 because the boy was magic.
5 So he went up there
6 but still he didn't find him.

In example 2, the character with the blocked plan is the giant. He intended to lure children into the circle in lines 4–6, but failed in line 7 (Paley, 1981, p. 66):

2.1 There was a magic circle in the forest
2 and a giant lived inside.
3 There was a boy and his sister walking into the forest.
4 The giant tried to trick them
5 because if you stepped inside the circle
6 you turned into a spell.
7 But he couldn't trick them.

An Unexpected Outcome of a Situation

In information derived from the text of Wally's stories, as well as from the real world story logic gleaned from everyday life (called *verisimilitude* in Segal, 1995b), readers are led to to expect that a set of events would continue. The context in which *but* occurred was that in which these expectations were violated. There were three examples of these in Wally's stories.

In the first, knowledge from life would lead one to assume that if a person decides to remain with a caretaker, the caretaker should stay there. This would be especially true if that caretaker were a parent (this assumption is not made explicit in the text). But, in Wally's story this continued state was not fulfilled (line 4) (Paley, 1981, p. 12):

3.1 Once there was a man and a mother and two sisters and a brother.
2 First the oldest sister ran away.
3 Then the second sister decided to stay home with the father.
4 but he ran away too.

In the next example, about Snow White, *but* contributes to the story structure. Snow White was expected to have a sustained visit (implied). This is known only because *but* signals to us that there is an unexpected event. It is concluded that the visit was significantly shorter than expected (line 2) (Paley, 1981, p. 155):

4.1 and Snow White came to visit
2 but she didn't stay.

Finally, Wally leads his audience to believe that a man had one son (line 2, singular referent) and that this set of circumstances is likely to continue, but one finds in line 5 that he has two (Paley, 1981, p. 28):

5.1 Once upon a time a man went out to hunt
2 and his son went with him.
3 He found a lion
4 and the lion killed the boy
5 but the man had two sons
6 and one was still at home.

A Category That Contains an Element With an Unexpected Property

A third use of *but* by Wally signaled the description of an unexpected attribute of an object or event already introduced in the story. There were three such cases in his stories. In one example, he relied on his audience knowing that under normal circumstances lions are visible, but this one was unusual in that it becomes invisible (line 3) (Paley, 1981. p. 46):

6.1 Then the father saw a lion.
2 He started to shoot
3 but the lion became invisible.

In the next example, Wally implies that orphaned children are not expected to have siblings at all, but this boy had many (line 2) (Paley, 1981, p. 155):

7.1 There was a little boy with no mother and no father.
2 But he had seven brothers and seven sisters.

In the next case, Wally implies that carrot seeds are usually not magic. But this one was exceptional (line 2) (Paley, 1981, p. 194):

8.1 A little boy planted a carrot seed
2 but he didn't know it was magic.

An Unexpected Consequence of a Changed State

This category is similar to the preceding one, but in this case the state of affairs is dynamic rather than static. Often a situation changes but the expected result is not obtained. Wally's stories contained three of these relations. In the first, a lion accepts a bargain (lines 2, 3, 4). The lion expects the boy to keep his word as expressed in the bargain, but he didn't (line 5) (Paley, 1981, p. 69):

9.1 Once a boy saw a lion in the forest.
2 He said, "give me all your gold
3 or I'll cut off your head."
4 So the lion gave him all the gold
5 but he still cut off his head.

In a second example, the *but* follows the coda of a story (Paley, 1981, p. 120):

10.1 "What words do you want to know?"
2 "Lion, tiger, and wolf."
3 "You already know them."
4 "You just said them."
5 "Then animal pretend talk must be English."
6 So they lived happily ever after.
7 But the man and lady know some words the boy didn't know.
8 So they did have a lot to teach him.

The most salient interpretation of *but* in line 7 is at a level of metarepresentation. The coda, *they lived happily ever after* (line 6), is expected to create an end to the story, one state. This expectation is violated in line 7 with the story's continuation, and the violation is marked by a *but*, qualifying as an unexpected consequence of a changed state.

Uses of *but* found in the Wally stories extended over four relational contexts all having a three-part logical structure. An abstract representation of the components in the structure shows the first element as one that establishes the domain (D) within which the *but* operates. The second element sets up an expectation (E) which would normally follow from (D). This element is an expectation following from typical conditions and is necessary to interpret the third element as one that violates (V) expectations. The third element usually follows the expression of *but*. The four relational contexts are found in Table 5.1.

Although Wally was only 5–years–old, he worked in a sophisticated way with this abstract schema. In these stories, D, E, and V are sometimes explicit and often tacit. The relationship between D and V need not occur as an adjacency pair, as one might expect from a beginning user of this schema. Rather, Wally easily interspersed appropriate background material when needed. Wally was able to motivate for the reader the background needed to establish the logical structure of the *but* schema and its various subtypes.

The three elements (D, E, and V) comprise a logical structure, one we will be calling a *but* schema. Each of the elements within the schema is interpreted

TABLE 5.1
Four Relational Contexts of *but* Evidenced in the Stories of a 5–year–old

Domain	*Expectation*	*Violation*
hope, wish	should come true	is not fulfilled
situation	should produce certain results	unexpected outcomes
category	expected elements	unexpected elements
change	expected consequence	unexpected consequence

in relation to the other two. The *but* signals to the interpreter that a domain is being marked by the one producing the discourse and that the interpreter needs to determine what the domain is (D content). The interpreter must also determine what expectations are being associated with the domain (E content) and how they are being violated (V content).

One question that must be considered is whether the *but* schema found in the Wally stories were provided by Wally or are imputed to his text by the more sophisticated reader. First, it is found that Wally used *but* only sparingly and in contexts that allow for sensible interpretation. One abstract schema was found to be applicable in four and only four abstract, relational contexts. Furthermore, as is seen from the examples by adults presented here, these were the very same contexts that they used.

A STORY WRITTEN FOR CHILDREN

Next, the first 10 instances of *but* were analyzed in L. Frank Baum's *The Wizard of Oz* (Baum, 1900/1956). This story was written by an adult for children, so one would expect it to be more complicated than a story produced by a 5–year–old child and less complicated than one produced by an adult for an adult audience. The first 10 instances of *but* fell within chapters 1 and 2 of the story. All 10 fell within 2 of the 4 categories found in the Wally data—4 of the 10 were tied to situations that did not continue as would be expected; the remaining 6 described examples of a category that contained elements that had unexpected properties or that were contrastive with one another.

An Unexpected Outcome of a Situation

In the first example, the author describes how a house was at one time painted (Line 3), but has blistered, faded, and turned dull and gray (Line 4 and 5). Although a reader may assume that a fresh paint job will fade over time, the *but* leads one to conclude that whatever fading one might have expected cannot compare to the dreariness that actually occurred (Baum, 1900/1956, p. 10):

1.1 The sun had baked the plowed land into a gray mass, with little cracks running through it.
2 Even the grass was not green, for the sun had burned the tops of the long blades until they were the same gray color to be seen everywhere.
3 Once the house had been painted
4 but the sun blistered the paint and the rains washed it away
5 and now the house was as dull and gray as everything else.

The aforementioned text is interpretable within the 3-element *but* schema derived from our interpretation of Wally's stories, the domain (D), expectation (E), and violation (V) as:

D The house was beautifully painted
E One would expect it to remain in reasonable shape
V But it is blistered, dull and gray

In the next example, a description of a dynamic, dangerous situation, a storm, is provided. Storms upset those in them, but this one had an unexpected consequence (Baum, 1900/1956, p. 14):

2.1 It was very dark,
2 and the wind howled horribly around her
3 but Dorothy found she was riding quite easily.

The *but* schema offers the following interpretation of example 2:

D There was a storm in progress
E One would expect it to have violent consequences for someone in it
V But Dorothy was riding quite easily.

The example that follows, as with most of the others, conforms to the DEV schema. The girl thinks her dog is lost, but she is wrong (Baum, 1900/1956, p. 14):

3.1 Once Toto got too near the open trap door, and fell in
2 and at first the little girl thought she had lost him.
3 But soon she saw one of his ears sticking up through the hole . . .

And the DEV schema interpretation is :

D Toto was in danger when he fell through a trap door in a flying house

E The girl expected that he would be lost
V But he wasn't.

Dorothy, in the next example, expected the cyclone to continue its destructive activity (Baum, 1900/1956, p.14):

4.1 At first she had wondered if she would be dashed to pieces when the house fell again
2 but as the hours passed and nothing terrible happened,
3 she stopped worrying and resolved to wait calmly and see what the future would bring.

A DEV schema interpretation reveals:

D Dorothy was worried about her demise
E She expected to be dashed to pieces quickly
V But nothing happened

A Category Contains an Element With an Unexpected Property

Example 5 describes Dorothy's getting better as having a lonely quality (Baum, 1900/1956, p. 14):

5.1 Hour after hour passed away
2 and slowly Dorothy got over her fright;
3 but she felt quite lonely

A DEV schema interpretation is:

D Feelings tend to be unequivocal
E Dorothy felt better
V But she also felt lonely

In example 6, a typical situation accompanying a cyclone is first described. The *but* clause describes an exception to those circumstances (Baum, 1900/1956, p. 13):

6.1 In the middle of a cyclone the air is generally still
2 but the great pressure of the wind on every side of the house raised it up higher and higher . . .

DEV structure reveals the following possible interpretation:

D Cyclones have still centers
E One would expect a house in the center of a cyclone to remain stationary
V But, instead, this house, located in the cyclone's center was raised higher and higher

The following example takes the size of adults as its category focus (Baum, 1900/1956, p. 18):

7.1 . . . she noticed coming toward her a group of the queerest people she had ever seen.
2 They were not as big as the grown folk she had always been used to;
3 but neither were they very small.

Interpreted with the DEV schema:

D The people were not as big as grown folk
E So, one might expect them to be small
V But there were not very small either.

All of the previous examples fit comfortably into the DEV construction, with a domain established and an expectancy denied. In the next three examples, *but* signals to the interpreter to note a contrast. For these examples, one does not need to construct an expectancy to be denied.

In Example 8, Toto, the dog, is upset with the house's occasional tipping and spinning. Dorothy remains calm, in contrast to the reaction of Toto (Baum, 1900/1956, p. 14):

8.1 Toto did not like it.
2 He ran about the room, now here, now there, barking loudly;
3 but Dorothy sat quite still on the floor and waited to see what would happen.

The interpretation does not require a full DEV schema, but can be depicted as a contrast between two elements (A and B). *But* informs the reader to pay attention to the contrastive nature of the elements:

A. Toto ran around the room.

B. Dorothy sat quite still.
But—contrast Toto's behavior to Dorothy's.

In example 9, like example 8, the *but* marks a contrast provided to the interpreter and does not require a DEV schema for interpretation (Baum, 1900/1956, p. 20):

9.1 The men, Dorothy thought, were about as old as Uncle Henry, for two of them had beards.
2 But the little woman was doubtless much older:
3 Her face was covered with wrinkles,
4 her hair was nearly white,
5 and she walked rather stiffly.

And the contrast involves:

A. The adults look as old as Uncle Henry
B. The woman was much older.
But—contrast the age of the adults with the woman.

In a last example, there is again a contrast that is marked by *but*. A group of people approached Dorothy and stopped out of fear (Baum, 1900/1956, p. 20):

10.1 When these people drew near the house where Dorothy was standing in the doorway, they paused and whispered among themselves, as if afraid to come farther.
2 But the little old woman walked up to Dorothy.

The contrast is as follows:

A. The people paused and seemed to be afraid
B. The woman was more adventurous
But—contrast the fear of the men with the adventurousness of the woman.

The use of *but* is quite informative in understanding this text. It seems that Baum uses *but* to point out to the children the implicit contrasts from which they can evaluate the occurrences of events in the story. These contrasts help establish feelings of suspense and involvement for them. It is known from the success over time of *The Wizard of Oz*, as well as from our analysis of the Wally stories, that children as young as 5–years–old appreciate the contrastive structure of *but*.

AN ADULT NARRATIVE

Katherine Mansfield's, *The Garden Party*, was selected as an example of an adult writing a narrative for an unfamiliar adult audience. The first 10 occurrences of *but* occurred in the first 5 pages of the 15-page story. The story contained 28 instances of *but* in total. The first 10 were classifiable into the same 4 categories as were the stories told by Wally: 2 were instances of *but* that failed psychological anticipation in which expressed goals, wishes, hopes, or expectations were not fulfilled; 4 were instances of unexpected continuation of situations; 3 examples were of a category that contained elements with unexpected properties; and there was one occasion that was an unexpected consequence of a changed state. None of the *buts* followed the abbreviated contrastive schema found in Baum's, *The Wizard of Oz*. Rather, they all conformed to the more elaborate DEV schema, involving a domain and its inherited expectations.

A Failed Psychological Anticipation

In these first examples, Laura, the main subjective character, was denied a goal and an expectation. (Mansfield, 1937/1954):

1.1 Laura wished now that she had not got the bread-and-butter
2 but there was nowhere to put it, and she couldn't possibly throw it away. (p. 535)

The *but* schema for this passage reveals the following possibility:

D Laura has a concern about having bread and butter
E She wants to keep her bread and butter and she wants to put it down
V But there was nowhere to put it and she couldn't possibly throw it away (there are two clauses after the but, indicating that the scope of the E element spans two events.)

2.1 Good morning," she said, copying her mother's voice.
2 But that sounded so fearfully affected that she was ashamed and stammered like a little girl . . . (p. 535)

Interpreted through the *but* Schema:

D Laura tries to sound authoritative by imitating her mother's voice.
E She would expect her mother's voice to sound authoritative.
V But, her imitation of it sounded affected.

An Unexpected Outcome of a Situation

In these examples, there is a break in the dialogic, subjective, or physical continuity. (Mansfield, 1937/1954)

3.1 "H'm, going to have a band, are you?" said another of the workmen...
2 "Only a very small band," said Laura gently.
3 Perhaps he wouldn't mind so much if the band was quite small.
4 But the tall fellow interrupted. (p. 535-536)

A *but* schema interpretation:

D Laura is in a discussion
E We expect to have the dialog continue.
V But the tall fellow interrupted.

4.1 And now there came a long, chuckling absurd sound.
2 It was the heavy piano being moved on its stiff castors.
3 But the air!
4 If you stopped to notice, was the air always like this? (p. 537)

A *but* schema interpretation:

D Laura is listening and reacting to human activities in the house
E One would expect her to continue to do this
V But she shifts her focus to more ephemeral matters outside.

5.1 "It's some mistake," she said faintly.
2 "Nobody ever ordered so many.
3 Sadie go and find mother."
4 But at that moment Mrs. Sheridan joined them. (p. 538)

A possible *but* schema interpretation:

D Sadie was asked to go and find her mother.
E One would expect her mother to be elsewhere.
V But she's right there.

6.1 "Yes, I ordered them. [canna lilies].
2 Aren't they lovely?"
3 She pressed Laura's arm.

4 "I was passing the shop yesterday,
5 and I saw them in the window.
6 And I suddenly thought for once in my life I shall have enough canna lilies.
7 The garden-party will be a good excuse."
8 "But I thought you said you didn't mean to interfere," said Laura. (p. 538)

An interpretation from the *but* schema:

D Mother said she wouldn't be involved in the planning.
E She is expected not to interfere.
V She interfered by ordering the canna lilies.

A Category Contains an Element With an Unexpected Property

There are no obvious constraints on what kind of element may have unexpected properties. Here we are informed that physical objects, knowledge bases, and proposed object locations have them. (Mansfield, 1937/1954):

7.1 His smile was so easy, so friendly that Laura recovered.
2 What nice eyes he had, small but such a dark blue! (p. 535)

A *but* schema interpretation:
D He had nice, small eyes—ordinary properties.
E One would not expect his eyes to be unusual.
V But such a dark blue is notable.

8.1 . . . he turned to Laura in his easy way,
2 "you want to put it somewhere where it'll give you a bang slap in the eye,
3 if you follow me."
4 Laura's upbringing made her wonder for a moment whether it was quite respectful of a workman to talk to her of bangs slap in the eye.
5 But she did quite follow him. (p. 535)

A *but* schema interpretation:

D Someone of Laura's class is likely to have difficulty understanding lower class colloquialisms.

E One would not expect someone of Laura's class to understand it.
V But Laura did.

This example follows directly from the preceding one, (Ex 8)

9.1 "A corner of the tennis-court," she suggested.
2 "But the band's going to be in one corner." (p. 535)

Interpretation from the *but* schema:

D Laura's suggestion should be a good idea
E It would be expected to have a "bangs slap in the eye" effect.
V But there is a problem with it.

An Unexpected Consequence of a Changed State

In this last example, a daughter refuses to accept responsibilities granted her by her mother. (Mansfield, 1937/1954).

10.1 "Where do you want the marquee put, mother?"
2 "My dear child, it's no use asking me.
3 I'm determined to leave everything to you children this year.
4 Forget I am your mother.
5 Treat me as an honoured guest."
6 But Meg could not possibly go and supervise the men. (p. 534)

A *but* schema interpretation:

D The mother declines to make her usual decisions.
E She expects her daughter to take over.
V But daughter could not possibly do it.

One of the reasons that Mansfield's story was selected for investigation of *but* clauses is that it is known from previous study that much of the text was presented from a subjective perspective in the style of free indirect discourse (Banfield, 1982; Galbraith, 1995). This different style writing had the potential of presenting *but* in different contexts and logical frames than those in the other samples. It is found, however, that the logical and relational contexts were the same as those found in the other sets of examples, indicating that *but* plays a very similar role in three very different styles of narrative.

SUMMARY

There were only 4 types of conditions in which *but* was used across each of the different discourse contexts for the 30 examples (Table 5.2). *But* occurred in contexts in which there were expectations related to someone's thwarted plans, to situations, to unexpected or contrastive elements in a category or domain, and to changes in states. Within each of these relational contexts, *but* guides us to interpret the relevant text in relation to a particular aspect of a given situation—the domain of interpretation. The relational contexts are neither marked as such in the text, nor are they obviously identifiable units in the mental model under construction. Rather, they are conceptual entities that must be known or inferable by the interlocutors in order for the *but* to be interpreted. That *but* can be understood is, in itself, evidence for the need to go beyond the text in order to understand the text (Adams & Collins, 1979).

All but three of the *but* structures required a 3-part interpretive schema. When the word *but* is expressed in a text, the interpretation requires foregrounding a domain, determining expectations of elements within that domain, and identifying violations of those expectations. This DEV schema was derivable for 27 examples studied.

Each element of the DEV schema needed to be abstracted from the text. The motivation to create the abstract structure is the need to understand the relationships triggered by the connective *but*. This structure, while abstract, is so important to text interpretation that even 5–year–olds seem to have learned its significance. Indeed, it is our judgment that 5–year–old Wally understood this abstraction and could not have placed *but* in interpretable contexts without an understanding of an underlying DEV schema and how to use it correctly.

Understanding the DEV structure requires the interpreter to set up a contrast between the unexpressed expectancy and its violation. The simpler structure that we uncovered in the remaining three *but* examples also requires the interpreter to identify and focus on a contrast, but, in this case, the contrast is based on elements explicitly expressed in the text. *But* allows a tension to be felt between the elements expressed, without the need for an expectancy to be denied.

The two structures, the full DEV structure and simpler contrast structure, both require considerable conceptual construction on the part of the interpreter. A DEV interpretation requires providing a domain and its concomitant expectancies; the *contrast* structure requires identifying the contrastive elements and the dimension upon which the contrast depends.

This empirical analysis of these 30 examples was classified into only 4 relational contexts. The small number of contexts and the considerable overlap

TABLE 5.2
The Four Relational Contexts and the Domains They Encompass

1. A Failed Psychological Anticipation
1. The father is looking for his son (CON, 1)*#
2. The Giant is luring children into the circle (CON, 2)
3. Laura has a concern about having bread and butter (AN, 1)
4. Laura tries to sound authoritative by imitating her mother's voice (AN, 2)

2. An Unexpected Outcome of a Situation
1. Caretakers stay with their charges (CON, 3)
2. Snow White was visiting (CON, 4)
3. A man had a single son (CON, 5)
4. The house was beautifully painted (ANC, 1)
5. There was a storm in progress (ANC, 2)
6. Toto was in danger when he fell through a trap door in a flying house (ANC, 3)
7. Dorothy was worried about her demise (ANC, 4)
8. Laura is in a discussion (AN, 3)
9. Laura is listening and reacting to human activity in the house (AN, 4)
10. Sadie was asked to go and find her mother (AN, 5)
11. Mother said she wouldn't interfere (AN,,6)

3. A Category That Contains an Element with an Unexpected Property
1. Lions are usually visible (CON, 6)
2. Orphaned children are not expected to have siblings (CON, 7)
3. Carrot seeds are usually not magic (CON, 8)
4. Feelings tend to be unequivocal (ANC, 5)
5. Cyclones have still centers (ANC, 6)
6. The people were not as big as grown folk (ANC, 7)
7. Toto was agitated (ANC, 8)
8. The adults look as old as Uncle Henry (ANC, 9)
9. The people paused and seemed to be afraid (ANC, 10)
10. He had nice, small eyes (AN, 7)
11. Someone of Laura's class is likely to have difficulty understanding lower class colloquialisms (AN, 8)
12. Laura's suggestion should be a good idea (AN, 9)

4. An Unexpected Consequence of a Changed State
1. A boy and a lion made a bargain (CON, 9)
2. Stories end with a coda (CON, 10)
3. The mother declines to make her usual decisions (AN, 10)

*CON = child's oral narrative
ANC = adult narratives to children
AN = adult narrative (to unfamiliar adults)
# numbers following code letters refer to example number in the above text.

of the findings from the different genres was surprising. It is not known if these findings are accidental to the set of examples chosen or whether they, in fact, are a complete taxonomy of relational contexts related to *but*. If this finding is universal, a theory is needed to explain its universality.

In conclusion, the following has been discovered from this analyses of the use of *but*:

1. The understanding of a particular use of *but* often requires consideration of information presented in clauses much earlier in the text than the clause just preceding the *but*.
2. Interpreting *but* often requires the incorporation of information about real world events—inferences depending upon the presumption of verisimilitude.
3. Interpreting the meaning of *but* in most cases requires that there be an exception to an expectation. This requires identifying the relevant domain within which both expectations and their violations can operate—a *but* schema.
4. There were only four relational contexts signaled by the *but* in these data. We have no principled reason to assume that these four represent a universal semantic or pragmatic taxonomy, but the possibility needs further exploration.
5. The *but* schema is functional for speakers and listeners of different abilities and across very different narrative styles.

CONCLUSIONS AND IMPLICATIONS FOR UNDERSTANDING HOW CONNECTIVES HELP STRUCTURE DISCOURSE

The aforementioned findings support a conceptual view of connectives, one in which terms traditionally thought of as connecting clauses, function instead to connect entities being constructed in a mental representation. The conceptual entities activated by the connectives may be found within the current model or may need to be brought to the model. The entities and their relations then become available to play a role in the evolution of the discourse content.

This analysis of connectives points out that the entities and relationships in the text are not simply propositions added to the interpreters' previously attained model. Instead, elements of the model must be reinterpreted. *But*, for example, always requires identifying a contrast between two different elements, either between the expectation and the occurrent exception or between explic-

itly expressed elements. Thus the interpreter must reorganize a previous interpretation to accommodate the meaning of the connective. This reorganization is obvious in the DEV structure that requires a construction of the domain and the expectancies therein. In the case of the simple contrast, the opposition signaled by *but* requires that the first element be reinterpreted in light of the opposition it marks.

Findings also, reveal that connectives often require interpreters to shift their frame of reference from the "here-and-now" of the speaking/reading context to the world of the discourse. The text is interpreted from a particular perspective within the mental model. This goes beyond a traditional mental model approach for representing discourse in that it requires a conceptual deictic shift into the model, and, once there, it requires that interpretations be based on an internal perspective on the events being presented in the discourse.

An example might clarify notions of how connectives work in structuring discourse. One of the Wally stories begins as follows (Paley, 1981, p.4): "There was a little boy with no mother and no father. But he had seven brothers and seven sisters." Had there been an *and* in place of the *but*, one would interpret the sibling sentence simply as an assertion of this family situation. The *but* requires the reader to contrast the notion of being orphaned with that of having many siblings and to see this juxtaposition as being focused upon and unexpected. In other words, one must reevaluate the status of the information in the clauses in light of the information marked as unexpected by the *but*.

This example also poses for us the question about the source of the expectation. Who expected there to be no siblings? There are three possible sources of this expectation: the interpreter, from general knowledge; Wally, as the author of the story; or the little orphan boy. It cannot be the boy, because he is the orphan with the siblings—he wouldn't be surprised. It is impossible to discriminate between the other two. Nonetheless, the fact that one must ascribe an expectation to someone makes the point that discourse, in particular discourse containing *but*, requires taking a point of view.

This study of *but* has revealed that to understand discourse, one cannot treat the sequences of information expressed by the text in a linear fashion. One of the major functions of interclausal connectives is to help specify what the nonlinear relations are among the elements of the mental model being created. This role of connectives is consistent with our earlier work in which we studied the relational nature of *and*, *then*, *because* and *so*, as well as *but* (Duchan, Meth, & Waltzman, 1992; Segal, et al, 1991). Connectives in the studies were found to signal different interpretive relations: continuity, discontinuity, causality, and adversity. These required reinterpreting the current model in view of known information and from a particular deictic perspective.

The analysis of *but* as well as *then* (Duchan, et al., 1992) reveals surprisingly few possibilities of relational contexts signaled by a particular connective. Much of the complexity arises from assuming the perspective within the model, rather than on multiple logical relations triggered by the connectives.

There is a general puzzle in natural language interpretation. One the one hand, linguistic elements must have a core meaning that is transituational, so that interpreters can understand the language when it occurs in novel situations. On the other hand, language must be sensitive to the specific nuances provided by different situational needs.

The tension between the two positions requires a diverse interpretation of the same structures. Findings presented here give a possible solution to this dilemma. A very circumscribed number of abstract relational contexts were found to be associated with a particular linguistic form (*but*) that can serve to structure an extremely large number of specific contextual domains (30 in this study). To the extent that connectives and probably other linguistic forms serve an abstract structuring role in a circumscribed way, they allow for a common basis of interpretation for diverse contexts. Since the structuring is abstract, the variations in context have the potential of giving particular linguistic forms the potential for shaping an infinite number of instantiations. This formulation supports the idea that there are but few syntactic possibilities underlying particular forms. This notion supplies a means of applying Chomsky's principle of sentences (Chomsky, 1965, p.8) "making infinite use of finite means" beyond syntax.

Chomsky's notion can be taken into the conceptual arena of interpreting connected discourse. Abstract conceptual structures are seen as being guided by closed class lexical items, such as connectives, and these abstract structures are seen as interacting with deictic perspectives to shape the specific interpretation of that text. Further work is needed on the notion that connectives provide a text with an abstract structure whose particulars are to be filled in, depending upon the specific perspective and context in which they occur.

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