for talking on topic. He notes that chained explanations create favorable circumstances for hierarichical topic organization and that their frequency and complexity depend to some degree on level of cognitive development as does the ability to keep track of "higher order nodes" of the topic. Hobbs notes that learning conventions for topic talk are likely also involved as evidenced by the observation that older individuals also hold each other accountable for staying "on topic."

Reichman formulates an explanation for developments in topic organization from the perspective of discourse linguistics. She emphasizes age changes in the use of linguistic markers of topic organization such as "Getting back to . . ." or "Well" that signal context-space changes in addition to patterns of pronomialization that signal which propositions are currently in focus. Reichman argues that linguistic conventions like these reveal that topic organization is an autonomous domain of language performance and an autonomous domain of development as well. Thus, Riechman's hypothesis contains both cognitive and conventional aspects; but it emphasizes convention while Hobb's hypothesis emphasizes cognition.

1
Topic Drift*

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1. INTRODUCTION

There is a word game one sometimes sees in Sunday supplements in which one is supposed to turn one word into another one letter at a time, each intermediate step being itself a word. Thus, one can turn WIMP into JOCK in seven steps:

        WIMP
        WISP
        WISE
        RISE
        RISK
        RICK
        ROCK
        JOCK

A conversation often proceeds in a similar manner. Each segment coheres with the preceding and the following segments, but where the conversation ends up is quite far from where it started. We may call this phenomenon *topic drift*. Each of the videotaped conversations we have analyzed for this volume illustrate instances of topic drift.

In this chapter I will first characterize each of the conversations in terms of the topic drift they exhibit. Topic drift occurs by means of successive small modifications in the topic, and I will next examine some of the mechanisms of topic modification that occur in the conversations. Finally, I will address a developmental issue—to what extent is topic drift a matter of cognition and to what extent a matter of convention?

2. OVERVIEW OF THE DIALOGUES

The participants in the dialogues we are examining were presented with the problem of constructing some sort of speech event in the given 20 minutes. They were supposed to talk about something "serious and/or intimate," yet they had to confine their conversation to matters they did not mind strangers hearing. The solutions they arrived at were quite various. As in all conversations they revealed a great deal of what their worlds were like. (See the Appendix for transcripts of each dialogue.)

ID1. Dialogue ID1 is a reunion between two best friends, one of whom had recently moved away. One has the feeling that these 8-year-old boys have many things to talk about and are bubbling with excitement about seeing each other again, and can't wait to get out everything they have stored up. The segments are typically very short, there is a great deal of interweaving as they negotiate topics, and there are frequent returns to topics already discussed. As one would expect from Dorval and Eckerman's (1984) findings that topic talk is not well organized among children of this age, there are often abrupt breaks between segments. Most often these are signalled by "Guess what." Many of the links that we do find between topics rest on very distant relations of parallelism and seem to be more a matter of cognitive associations than of attempts to structure the conversation in a coherent manner. There are occasional influences of the experimental situation on the conversation, as when Sam says about the camera, "I wish that thing would stop staring at us" (366), and as in their brief attempts, after being instructed to talk about something "serious," to talk about injuries, sick and dead relatives, and grades in school. But for the most part they are carried away with their excitement at seeing each other.

In subject matter their conversation covers what one would guess is a large portion of their everyday world. Concerning their family, their fathers' jobs are mentioned, and the danger of Sam's father's job is discussed at poignant length. Two kinds of dealings with their families are mentioned: they go on family trips to Tennessee or Florida, and they get disciplined, an issue strongly related to school and grades. Brothers and sisters are mentioned only very briefly. Grandparents are discussed, but primarily as a way of talking about sickness and death as something serious. There is no mention of other friends. Several segments deal with topics that can perhaps best be described as windows on the adult world. They briefly talk about amounts of money they have or had. They talk about tennis and golf in a way that centers on spectacular, even superhuman, success and has the flavor of a Saturday morning cartoon. They memorize, or try to memorize, their telephone numbers. The brands of commercial products are an extended issue three times in the dialogue. They discuss what kind of Atari games, what model of Atari, and what kind of bikes they have; they are learning their roles in a competitive, consumer society. On a more personal, child-oriented level, they talk about their ages and birthdays, where Sam now lives, movies, and toys. The movies and toys are almost all of the "Star Wars" variety. There is fantasy in the discussion of golf and tennis and in the idea of putting a bomb in someone's pants at school. Finally, there are several types of conventional discourse—jokes, betting (in a clarification subdialogue!), and hand games.

ID11. Dialogue ID11 is between two 12-year-old girls who are best friends. It is very different from dialogue ID1 and exemplifies many of the stereotypes about the differences between boys and girls and also the greater topical coherence achieved in older children's talk. Sharon and Jenny's conversation revolves almost entirely around relationships, who is and isn't their friend and why, whereas Jeff and Sam almost never mention other friends. In the girls' conversation we have no talk of games or toys, there are no jokes or conventionalized word games, and virtually no fantasy, as there are in the boys' conversation. They talk almost entirely not just about their friends, but about their friends' *being* friends, and, in particular, they talk about one former friend, Leslie, and why she no longer is a friend. Even the experimenter's request that they talk about something serious does not divert them from this topic. Occasionally, the conversation drifts away from this topic by mechanisms we will examine, to the topics of whether they are adopted, whether their parents will get divorced, and recreational activities. But they always return to a discussion of Leslie. There are very few abrupt topic shifts, even ones signalled by "Guess what" are often merely small shifts in topic.

The view we get of the girls' world thus centers on the people in it. Friends can be nice or sweet, or they can be mean, bossy, or snobbish. They are mean when they get mad at one for little reason and make one cry. In such cases they ought to be dropped. But there is value in remaining friends. It is necessary to have friends. Jenny says she would faint if she didn't have a friend (225). Various friends are compared with respect to various qualities. All friends are girls. Only two boys are mentioned, a boy in class who bothers Jenny, and Jenny's brother whom she fights with. Parents are also mentioned. They fight with each other and threaten divorce, they get mad at their children, and sometimes they spoil them and turn them into snobs. There is a discussion of the possibility that one is adopted, but that centers around family resemblances, not around the parents' treatment of children. The activities that are mentioned are ice-skating, roller-skating, and a school field trip, but only about ice-skating is there any detail.

ID28. Dialogue ID28 is between two 16-year-old boys who are best friends. The topic drifts much less than in dialogue ID1—or, should I

say, it drifts rather than leaps, as ID1 does. But one has the suspicion that this may not be due to any effort to control the conversation, but is rather the result of a narrower set of concerns. At least a narrower range of topics is appropriate to talk about. Nevertheless, the whole dialogue constitutes, in a subtle form, a "topic fight" of the sort Sirois and Dorval (1988) observe among younger children. Richard wants to talk about his girl friend Alisha's disapproval of his drinking. Todd is interested in discussing the various forms of his angst. The first topic is Todd's lack of interest in asking anyone to the ring dance. Richard succeeds in changing the topic to the story of how Alisha told him off about drinking the previous night (38–48). The conversation meanders for a while, and then Todd tries to return to his topic of interest (77). Richard, however, resumes his own (78–86, 107–131), veering dangerously close to the issue of whether Todd has been involved in setting up Alisha to tell Richard off. They drift into a discussion of the events at a party the previous night, which enables Todd to reintroduce his angst in another form—his feeling of being out of place at the party (162). He successively generalizes his complaint—"I don't even feel right at school anymore" (170), "I can't talk to anyone anymore" (176), and "things bug me" (178). Richard seeks to downplay the seriousness of the incidents and then redirects the conversation back to "who was with whom" at the party. Todd finally uses the task of talking intimately to switch the topic abruptly to a particularly highly charged specialization of the general complaint "I can't talk to anyone anymore," namely, "We never talk anymore" (220), which Richard confirms with the nervously distancing phrase, "You mean, you and moi" (223). Richard then responds with successively retreating defenses—we do too (225–246), I didn't know you wanted to (248), we're too old for that (262). They end up agreeing that it is because of their new friends, like Sul and Misty.

The boys' lives seem to be organized around dating and drinking. The social occasions are dances, parties, and getting together to drink. Among their set of friends, people ask each other out, get bored with each other, feel uncomfortable in front of others, and get bugged by others. There are three kinds of evaluations made of others, all negative: They disapprove of behavior that makes one stand out, they evaluate others as ugly, and disapproval of excessive drinking is at least an issue. Concerning smaller-scale interpersonal relations, there is the conflict of Todd's desire to talk more and Richard's feeling that it is either no longer appropriate or no longer necessary. Parents appear exclusively as screwed up or ignorant.

ID23. Dialogue ID23 is between two 16-year old girls who are best friends. Of all the dialogues, it is probably the most incomprehensible to the observer, since it rests more on the participants' own mutual knowledge of recent events and common friends. Like dialogue ID28, it does not drift much, but this is probably also because of the narrow range of concerns.

The conversation is dominated by issues involving social relations—friends and mothers. Concerning friends, there are two issues. The first is various events involving a girl and a boy talking to each other; frequently, what is important is only whether they did talk, and not what they said. Second, there are various evaluations of acquaintances—a gross girl, a gay boy. Relations with mothers are dominated by issues of control—whether or not the mothers want to exercise control over certain social events in the girls' lives. The issue of drinking arises but without a hint that it might be a moral issue for the girls themselves.

ID47. Dialogue ID47 is between a pair of college-age young women who are best friends. It moves swiftly and smoothly from topic to topic. Throughout, one gets a strong sense of local coherence. Yet when we back away, we can see that there has been quite a bit of movement. The topic has moved easily from cars to Pam's cold, to issues of friendship and personality traits, to classroom chairs, to grades, back to personality traits, to graduate schools, to Marsha's friend Mike's job as a watchman, to tutoring. We examine below how this topic drift is accomplished. Like dialogue ID11 and in contrast to the other dialogues, this one is virtually undisrupted by the the experimenter.

The subject matter of the dialogue consists of three areas: (a) Their institutional lives can be divided into school and economics, and orthogonally into the present and the future. Present-school concerns include classes and grades. Future-school concerns involve the choice of a graduate school. Present-economics surfaces in talk about tutoring, future-economics in discussion of ultimate vocation; (b) Their friends and family include their intimate others, Marsha's mother, two women friends, and each other; (c) The dialogue was primarily organized around a discussion of each other's personality traits that contribute to their friendship. The traits are agreeableness, a positive attitude, for example, an optimism about grades, and patience, as exemplified in tutoring. The parallels between this dialogue and dialogue ID11 are remarkable.

3. SOME MECHANISMS OF TOPIC DRIFT

3.1. Coherence Structure and Discourse Pivots

In this section some of the mechanisms that seem to be responsible for topic drift are identified and characterized, and examples from several of the dialogues are given. The approach to text coherence described by

Hobbs (1985) will be assumed. The style of analysis applied here is similar to that applied by Hobbs and Agar (1985) to the meanderings of conversation in an ethnographic life history interview.

The devices for topic drift discussed here are (a) a kind of association based on semantic parallelism; (b) chained explanations, or explanations that become topics in their own right; and (c) metatalk used as a way of introducing a new topic.

In the theory of discourse coherence presented by Hobbs (1985), one seeks to discover between adjacent *segments* of coherent discourse one of a small set of coherence relations. We will focus on three of the coherence relations since they are responsible for most of the topic drift in the dialogues—parallelism, explanation, and a third one which previously I have called *evaluation* but here is more appropriately referred to as *metatalk*.

Each coherence relation can be characterized in terms of the inferences that can be drawn from the explicit content of the text segments that it links and from the participants' world knowledge. The characterizations of the three coherence relations of interest are as follows.

One type of *parallelism* between two segments occurs when the two segments assert propositions from which we can infer that identical properties hold of similar entities. Schematically,

$$(1) \qquad S_1 \vdash p(a_1), \qquad S_2 \vdash p(a_2)$$

That is, segment S_1 entails $p(a_1)$ and segment S_2 entails $p(a_2)$, where a_1 and a_2 are similar. Two entities are similar when it is mutually known that they both have some common, relevant property. Another type of parallelism occurs when, from the assertions of the two segments, we can infer similar properties holding for identical entities. Schematically,

$$(2) \qquad S_1 \vdash p_1(a), \qquad S_2 \vdash p_2(a)$$

Two properties are similar if they both imply the same, more general, relevant property. These definitions cover examples of surface syntactic parallelism. Moreover, since they speak not just of what is explicit in the sentences but of what can be inferred from them as well, they also cover examples of semantic parallelism between segments that are superficially quite dissimilar.

One segment S_2 functions as an *explanation* of a previous segment S_1 when the situation or event described in S_2 can serve as a cause for the situation or event described in S_1, given the appropriate background knowledge.

A segment S_1 is *metatalk*, or evaluation, if it asserts a relation between

some other segment S_2 and the goals of the conversation. In the conversations examined, the goals are simply to talk in front of a camera for a length of time, so the metatalk often concerns the problems of what to talk about next.

Two technical terms are crucial in this account—*segment* and *the assertion of a segment*. Briefly, a clause is a segment, and when two segments are linked by a coherence relation, they combine into a larger segment. The segment structure of a dialogue is independent of its turn structure. Segments can span turns, and several can occur within a single turn.

The assertion of a clause is generally the predication made by the main verb, although this can be overridden by intonation, syntactic structure, or mutual knowledge of what is given and new. When two segments are composed into a larger segment, the assertion of the composed segment can be determined from the assertions of the constituent segments and the coherence relation that links them. For some coherence relations, the assertion is computed equally from the two segments. For example, for the first kind of parallelism, the relation was recognized by inferring from the two segments that similar entities had identical properties. The assertion of the composed segment is that property predicated of the superclass by virtue of which the two entities are similar. Thus, if a_1 and a_2 are similar because they share property q, the assertion of the composed segment is $(\forall x)q(x) \supset p(x)$, that is, things that have property q also have property p.

For other coherence relations, the assertion of the composed segment is simply the assertion of one of the constituent segments. This occurs when one segment is dominant and the other is subordinate. (In fact, this is what *dominant* and *subordinate* mean.) For example, for explanation, where the relation can be glossed as "Segment S_1, because segment S_2," the explanandum S_1 is dominant, while the explanation S_2 is subordinate. Hence, the assertion of the composed segment S_1S_2 is just the assertion of S_1.

By using coherence relations to compose segments in this fashion, large, tree-like structures can sometimes be built over an entire discourse. However, in casual conversation, a segment will often be related in one way to its preceding segment and in another way to the following segment, so that no single tree-like structure spans all three. In such cases, topic drift occurs. This kind of structure is what Polanyi (1987) has called a "discourse pivot." When the discourse structure is diagrammed, there are two adjacent trees, and the last terminal node of the first is the first terminal node of the second. Although segments are taken to *assert* only a single predication, they always *convey* more than one. A discourse pivot occurs when one or both participants reinterpret the thrust of a segment by taking it subsequently to have asserted a

different predication than the predication by virtue of which it found its place in the previous discourse structure. Our first two mechanisms for topic drift are examples of·such discourse pivots. Jefferson (1984) examines the use of discourse pivots by conversational participants to escape from talk of troubles.

One important example of a discourse pivot is what might be called a *parallel association*.[1] Suppose we have three successive segments, S_1, S_2, and S_3, from whose assertions we can infer the propositions $p_1(a_1)$, $p_1(a_2)$, and $p_2(a_2)$, respectively.

$$S_1 = \vdash p_1(a_1), \qquad S_2 = \vdash p_1(a_2), \qquad S_3 = \vdash p_2(a_2),$$

There will then be a parallel relation between S_1 and S_2 and another between S_2 and S_3, but there will be no relation between the composed segment S_1S_2 and segment S_3. We can diagram the structure as follows:

$$p_1(\{a_1, a_2\}) \qquad \{p_1, p_2\}(a_2)$$
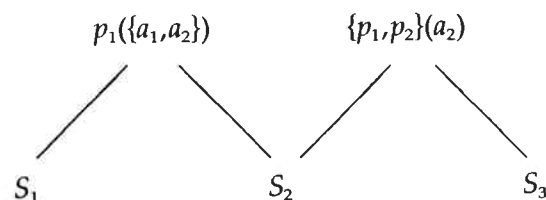
S_3 links with S_2 but not in a way that allows it to link with the composed segment S_1S_2. The drift we get resembles the Sunday supplement word game. First we changed the argument and kept the predicate the same; then we changed the predicate and kept the argument the same. More generally, S_1 and S_2 may be linked by any coherence relation (R), while S_3 links to S_2 by a parallel relation but not to the composed segment S_1S_2 linked together by the coherence relation R.
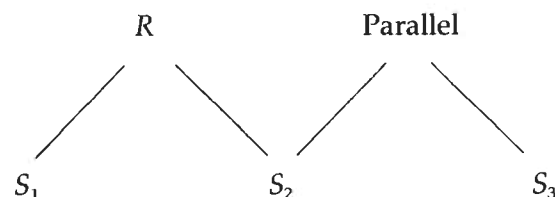

Tangents frequently occur by this means. The parallel coherence relation is thus a common source of topic drift and is often thought of more loosely as simply an association to the prior segment.

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[1] Dorval and Eckerman (1984) refer to this as a "tangential turn."

Another common kind of discourse pivot occurs when a segment which is subordinate is subsequently treated as dominant, illustrated by the following diagram (where we indicate the dominant segment by a double line).
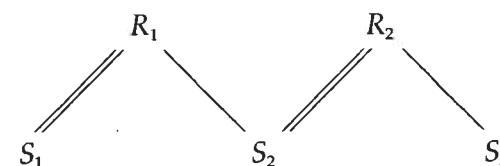
Chained explanations are like this. In "well-behaved" discourse, when one segment is followed by another segment explaining the assertion of the first, the first segment is dominant; the pair is "trochaic," in Longacre's (1976) terminology. There will be a return to the topic of the first segment as soon as the explanation is accomplished. However, in casual conversation, the explanation sometimes turns out to be more interesting than the explained, and the conversation somehow never gets back to the original topic. In the above diagram, segment S_2 is provided as an explanation for segment S_1, but this then calls forth its own explanation in segment S_3. Sometimes several of these moves are chained, one after the other, carrying the conversation quite far from where it started. Of course, there is always the possibility that the participants will pop back to the suspended topic of S_1 and that the structure of the whole discourse will thereby become unified again. In this case, the final structure is the following:

(3)
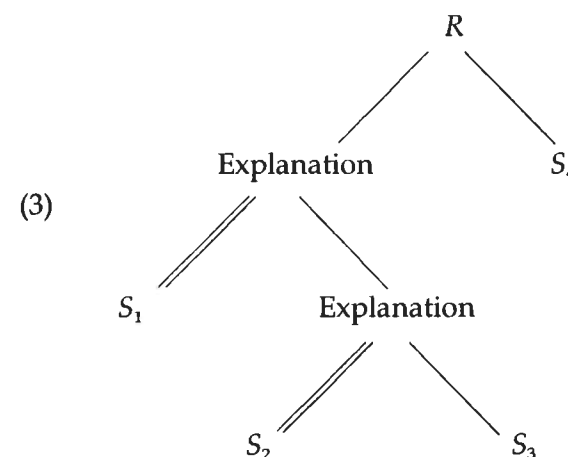
We now examine a number of instances of these mechanisms in action in the dialogues.

3.2. Parallel Associations

ID28. A small-scale example of a parallel association occurs early in dialogue ID28.

(12) *Richard:*   . . . she goes, well, there's somebody I want to ask, and I said who? She said, you know who it is. I said, I said, said I don't wanta say Todd because, ha ha, that's really stupid, Misty, . . .
(14) *Richard:*   . . . and I said, why don't you ask me . . .
. . . then she says, well, did you ask Alisha. . . .

The topic of the first line is *go-with(Misty,Todd)*, of the second line *go-with(Misty,Richard)*, and of the third line *go-with(Alisha,Richard)*. As in the word game, they have changed one element at each step and ended up talking about a different problem.

Later on, there is another parallel association shift of topic.

(38–86) *Richard:*   [Story of Alisha's telling off Richard because of his drinking.]
(87–89) *Todd:*   That's what Lynn said and then she got pissed at me again last night. . . . Something about Janet.

The two segments stand in a parallel relation, in that a "telling off" is described in both cases, in the first case Alisha telling off Richard about his drinking and in the second case Lynn telling off Todd about Janet. Nevertheless, in spite of the local coherence thus achieved, it in fact constitutes an attempt by Todd to shift the topic from Richard's drinking to his own angst.

ID1. Parallel association is the chief device the boys in dialogue ID1 have for shifting the topic, other than abrupt breaks. In some cases the parallelism is so tenuous as to be hardly more than mere association. One instance takes the boys from a series of jokes to a discussion of a movie. Sam is telling a "Knock Knock" joke, whose punch line is

(62) *Sam:*   "E.T. phone home. Hello Momma? You there?"
[3.2 second pause]
(63) *Sam:*   Did you see Star Wars?
(64–8)   [Jeff hasn't seen Star Wars. Discussion of HBO.]
(69) *Sam:*   You saw Star Track?
(70) *Jeff:*   Yeah.

Here we move from a joke about the science fiction movie character E.T., to the science fiction movie "Star Wars," to another science fiction movie with a very similar name.

Another example possibly hinges on alternate interpretations of a possessive noun phrase. As a response to the experimenter asking the boys to talk about something "serious," Sam says

(221) *Sam:*   You know my grandfather is sick?
(222) *Jeff:*   Yeah.
(223) *Sam:*   My *mother's* grandfather.
(224) *Jeff:*   Guess what.
(225) *Sam:*   What.
(226) *Jeff:*   My, uh—my—my great grandfather is still alive.

It is likely that, by "*mother's* grandfather," Sam means the grandfather on his mother's side. It is possible, however, that Jeff gives this the more common interpretation—his great grandfather, and proceeds to talk about his own great grandfather.

A very poignant example of drift by parallel association comes early in the dialogue. The experimenter has just asked them to talk about something serious, so they talk about grades. Jeff says,

(159) *Jeff:*   Only Friday, Saturday, and Sunday I can go out an play. That's all.

This is an issue of discipline, and leads Sam to ask,

(167) *Sam:*   Do you ever get a spanking?

They discuss how much and how hard they get spanked, and then Sam says,

(172) *Sam:*   Uh, my mother spanks me real hard.
My father, he'd do anything just to keep me from
. . .
He doesn't care about me either.

In quick succession Sam and Jeff have gone from grades to parents' making them study to spanking to Sam's father not liking him. Jeff escapes from the topic, or perhaps just fails to pick it up, by simply continuing to talk about how much his parents make him study.

(173) *Jeff:*   And guess what. I must study the rest of the days, Monday, Tuesday, Wednesday, Thursday.

It is not clear whether this is a deliberate move out of an uncomfortable topic or simply a continuation of the topic Jeff had begun and hadn't

been able to finish. But there are indications elsewhere in the conversation that Jeff is made uncomfortable by talk of Sam's trouble with his father.

Another and perhaps more convincing use of a parallel discourse pivot to escape from an uncomfortable topic is found at the end of an exchange analyzed in the next section. The sequence from utterance (250) to utterance (286) is about the possibility of the ship Sam's father is on being bombed and sinking. Toward the end it concerns the technical details of what kind of bomb it would take and how direct a hit would be required to sink the ship, but lurking in the background is the fact that it is the ship Sam's father is on. Sam escapes from this topic with utterance (287).

(287) *Sam:* Um, I have these three ships. I have a Coast Guard, a battleship, and a small ba—another small battleship.

He moves from a discussion of real ships to toy ships, and thereby moves back into safe territory.

ID11. Most of the topic drift that occurs in dialogue ID11 occurs by means of gentle parallel associations. For example, the dialogue begins with Jenny talking about her father being mad at her last night (1–8). From there it moves to talk of Leslie being mad at her (9–12) and of Leslie's dispositional properties—nice, mean, sweet—relevant to being mad (13–18). Returning to the theme of what happened last night, Sharon says she did nothing last night (19–24). Then they discuss what they will do tomorrow, namely, ice skating (25–29). They talk about their skill in ice skating (30–39), and this leads to Sharon's statement about her skill in roller skating (40). This progression can be represented schematically in the following chart. Parallel associations are represented with an arrow labelled *p*; other developments are indicated by an arrow labelled *d*.

$$
\begin{aligned}
&\textit{mad-at(Father, Jenny, last-night)}\\
&\quad\textit{-p} \rightarrow \textit{mad-at(Leslie, Jenny,–)}\\
&\qquad\textit{-d} \rightarrow \textit{disposition(Leslie)}\\
&\quad\textit{-p} \rightarrow \textit{do-nothing(Sharon, last-night)}\\
&\qquad\textit{-p} \rightarrow \textit{ice-skating(Sharon, tomorrow)}\\
&\qquad\quad\textit{-d} \rightarrow \textit{skill-in(both, ice-skating)}\\
&\qquad\qquad\textit{-p} \rightarrow \textit{skill-in(Sharon, roller-skating)}
\end{aligned}
$$

We see a similar, though smaller-scale, progression later in the dialogue. Jenny abruptly introduces the topic of whether they are adopted (190–192). As evidence, she considers whether she looks like her bother

(192–194). It is then agreed that she looks like her mother (195–196). Her brother, they say, doesn't look like anybody (196). He doesn't act like anybody either (197–198). Kelly doesn't look or act like anybody either (199–201). Freddie acts like Sharon's father (201–203). Then they return from the theme of "acting like" to the theme of "looking like." Jenifer looks like Jenny (204–210). Finally, Amy looks like her step-brother (211–222). Schematically, this can be represented as follows:

$$
\begin{aligned}
&\textit{Adopted(Sharon/Jenny)}\\
&\quad\textit{-d} \rightarrow \textit{Not-Look-Like(Jenny, brother)}\\
&\quad\textit{-p} \rightarrow \textit{Look-Like(Jenny, mother)}\\
&\quad\textit{-p} \rightarrow \textit{Not-Look-Like(brother, anybody)}\\
&\qquad\textit{-p} \rightarrow \textit{Not-Act-Like(brother, anybody)}\\
&\qquad\quad\textit{-p} \rightarrow \textit{Not-Look/Act-Like(Kelley, anybody)}\\
&\qquad\qquad\textit{-p} \rightarrow \textit{Act-Like(Freddie, Sharon's father)}\\
&\qquad\textit{-p} \rightarrow \textit{Look-Like(Jenifer, Jenny)}\\
&\qquad\quad\textit{-p} \rightarrow \textit{Look-Like(Amy, step-brother)}\\
&\quad\textit{-p} \rightarrow \textit{Act-Like(Freddie, Sharon's father)}\\
&\textit{-p} \rightarrow \textit{Look-Like(Jenifer, Jenny)}\\
&\quad\textit{-p} \rightarrow \textit{Look-Like(Amy, step-brother)}
\end{aligned}
$$

ID47. An interesting, fairly large-scale example of drifting via parallels occurs in dialogue ID47. Talking about graduate school, Pam says,

(155) *Pam:* It's not that very far off future.

That leads to a discussion of how Marsha will have to get a job first to earn some money. Then she raises a parallel difficulty.

(169) *Marsha:* And anyway, I can't have Mike just up and, in the middle of this . . .
Oh, I didn't tell you he got promoted to watchman, so he you know, he's slowly working his way up.

The second line, especially the "so" clause, can be interpreted as a further reason that he can't just be uprooted. Pam, however, picks up on the new job insofar, as it relates to convenient working hours.

(170) *Pam:* Is he still working all those long hours?

It is possible that the next topic comes after an abrupt break, but it is also possible that the two segments are related as parallel issues con-

cerning free time and how it is spent, as Marsha follows up a discussion of getting to see Mike more now, with

(175) *Marsha:*   I was, I told Paul for y'all to come by last night after, um, you got finished tutoring.

A brief discussion of this then leads to a parallel aspect of how last night was spent.

(178) *Pam:*   But anyway, I tutored this guy last night . . .

Thus, by means of three parallel relations between successive segments, the conversation has sidestepped from the topic of money, to Mike's working hours, to an invitation last night, to tutoring.

3.3. Chained Explanations

ID1. There are few examples of chained explanations in dialogue ID1, but it underlies what is possibly the most fascinating and again poignant extended exchange in the dialogue, in utterances (214) to (287). It involves Sam's father. The experimenter has just intervened and asked the boys to talk about something serious. They first talk about sick grandparents, and then Sam switches the topic to talk about a crank phone call his mother received, another serious issue. This closes with his report of what the caller says, followed by a repair.

(249) *Sam:*   'I know your husband's not deyuh.'
(250) *Jeff:*   Dead?
(251) *Sam:*   N—there.
(252) *Jeff:*   Oh, *there.*

This completes the repair, but a theme that is later picked up, Sam's father dying, has been introduced.

Then as an explanation, Sam says that his father was on a ship at the time. This leads to a discussion of where the ship is and what kind of ship it is (257-266). But first Jeff has asked when Sam's father will be back from the ship, and Sam has said, "Probly never" (254-256). In utterance (267) Jeff asks for a explanation of why Sam's father will probably never return. This leads to a discussion of whether or not the ship has sunk. Jeff's request for an explanation for how Sam knows the ship hasn't sunk leads to a playful discussion of shields over ships and bombs hitting ships, ending with Jeff playing taps for Sam's father, a topic Sam has to escape from. Thus, the structure of the segment is

Crank phone call, in which Sam's father wasn't there,
  because he was on a ship,
  as he is now on a ship,
    from which he will probably never return,
      but not because it will sink,
        because it has a shield over it.

ID28. A rather long chain of explanations is exhibited in dialogue ID28. After saying that it is funny that Alisha should tell him off for drinking, Richard explains his judgment:

(48) *Richard:*   . . . because when we were coming home, she goes, can't wait to go to Dede's tomorrow night and get drunk off our behinds . . .

In the following seven turns, Richard explains why Alisha will be at Dede's and not with him—because he is going out with Sul. Next he explains why he will be going out with Sul.

(56) *Richard:*   See, we wanted to go to Pontchartrain Beach last weekend, but he couldn't.

Next comes an explanation of why Sul couldn't go to Pontchartrain Beach.

(60) *Richard:*   And then his mom said no . . .

Next comes an explanation of why his mother said no.

(62) *Richard:*   . . . his mom's screwed up.

(65) *Todd:*   No, you can't go to Pontchartrain Beach. There's going to be a Mexican Revolution there.

Finally, Richard gives an alternate explanation for not going out tonight.

(68) *Richard:*   . . . and then I'm thinking mom's not paying me for ring dance and so I have to save my money.

This leads to a discussion of how much money he has.

3.4. Metatalk

Particularly because of the experimental situation into which the subjects were put, there is a certain amount of talking about what they

should be talking about, that is, metatalk. It frequently occurs that meta-talk is used to shift the topic, and in a variety of ways.

ID1. There was little or no use of metatalk in dialogue ID1, unless we count the phrase "Guess what." Probably because the two boys had so much to say to each other, there was never a problem of what to say next. Even the two instances in which the experimenter intervened are followed immediately by one of the boys launching into a serious topic, without any accompanying metatalk. We cannot draw any conclusions about the development of metatalk, however, for other children of that age group show some virtuosity in directing the course of conversation by metatalk.

ID28. A very nearly brilliant use of metatalk occurs near the end of dialogue ID28. For the entire conversation, Todd has been trying to talk about his angst, always expressing an uncertainty about its true source, and Richard has always shifted the topic back to his own concerns. The conversation grinds down to a halt, and Todd pops back to the task they are supposed to be performing.

(216) *Todd:*   You think we're being intimate enough.
(217) *Richard:*   No.
(218) *Todd:*   What the hell are we supposed to talk about? I mean, I know
                   what's bugging me.
(219) *Richard:*   What's bugging you?
(220) *Todd:*   That we don't talk.

First he says it is their task to talk about something intimate, and then, as a way of accomplishing that task, he introduces directly the topic he has tried to introduce indirectly for the entire dialogue. This topic dominates the remainder of the conversation.

ID47. The previous example was connected with the experimental situation. But this is not necessarily the case. In dialogue ID47, we find examples of major shifts of topic generated by metatalk, specifically, by a comment on or an evaluation of the very *fact* that the preceding utter-ance was made. This device occurs twice in succession fairly early in the dialogue. Pam sniffs, and Marsha asks her how her cold is, and Pam answers. Then

(30) *Marsha:*   That's good, gotta stay healthy.
(31) *Pam:*   Yeah. Do you care about me, Marsha?
(32) *Marsha:*   Of course I care about you.
(33) *Pam:*   Yeah, one thing about you is that you always agree with me, one
   thing I like.

Utterance (31) is a comment on the *fact* that Marsha has expressed her concern. Utterance (33) is a comment on the role of the third utterance as an agreement with the second utterance. This leads to an extended discussion of Marsha's agreeableness (one in which Marsha spends the whole time disagreeing), one of the most important topics in the course of the conversation.

4. DEVELOPMENTAL ISSUES: COGNITION OR CONVENTION?

It is illegitimate to attempt to extract any generalizations from the small amount of data examined in this volume. The behavior is com-plex, the data is rich and intricate, and people vary. Much more work of the sort described by Dorval and Eckerman (1984) and Sirois and Dorval (1988) is required. Nevertheless, we might point out some is-sues and venture some conjectures on the basis of what we have ex-amined.

The first question that arises is whether there is any increase in the use of or proficiency with the different mechanisms for topic shift. Briefly, there does not seem to be any such increase. People of all ages studied seem completely competent in managing parallel associations and metatalk. I have the impression that explanations, and hence chained explanations, are more common in the older subjects' dia-logues. It could be that one feels a greater need to explain one's self as one gets older. But as we have seen in Section 3.3, they certainly occur in younger children's dialogues as well.

The second issue is whether older children and adults produce con-versations with deeper, more recursive structure than younger children. This is a difficult issue to study because of the problems in distinguish-ing between returns and pops. A *pop* occurs when an embedded sub-ordinate segment is closed and there is a resumption of a previous, suspended, higher-level, dominant segment on the right frontier of the discourse structure, yielding a structure like that in (3). The resulting structure then subsumes the intervening material. This can happen frequently with chained explanations. When it does hap-pen, we have a deeply recursive structure. By contrast, a *return* is simply a resumption of a topic that occurred previously, but is not one that had been suspended and is not on the right frontier of the discourse structure. The resulting discourse structure does not sub-sume the intervening material. The following diagrams illustrate the difference:

R_1 R_2

S_1 S_2 S_3

Return

R_2

R_1 S_3

S_1 S_2

Pop
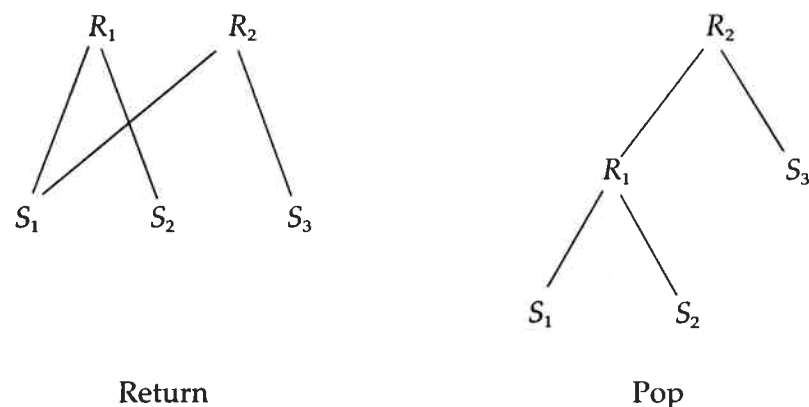
Because in the parallel relation each segment is of equal weight, i.e., neither is dominant or subordinate, when topic drift occurs by means of parallel associations a resumption of a previous topic necessarily cannot be a pop. It can only be a return. Briefly, you can't pop back from a tangent; you can only return. Similarly, you cannot pop from an abrupt break; you can only return. If younger children make more use of abrupt breaks and parallel associations and less use of chained explanations, we see a flatter, much less deeply recursive structure in their discourse. This generalization would require much more extensive investigation to substantiate, but, if it were to hold up, it would have an obvious explanation in terms of cognitive development. On the other hand, one could perhaps explain it as well by the acquisition of conventions for the maintenence of topical coherence.

This is in fact our final conjecture. Is it the case that, as children get older, they make a greater effort to maintain topical coherence? We see this in a comparison of dialogues ID1 and ID28. In both, topical coherence is managed locally, where managed at all; the conversation in progress is viewed through a very narrow window. But awareness of the structure of the whole dialogue differs. Dialogue ID1 has a very linear structure; there is very little embedding. Dialogue ID28, because of the chained explanations, has a highly recursive structure, and the window through which the participants perceive the ongoing conversation includes a view of the previous higher nodes in this structure. This allows the boys to pop back to previous topics. We see this when Todd attempts to pop back to his problem of interest, who to take to the ring dance—

(77)Todd: I'll probably end up coming with somebody at the last minute.

—while Richard responds by popping back, not as far, to his problem of interest, his conflict with Alisha over his drinking.

Similarly, there is a sharp contrast between dialogues ID1 and ID28 in the occurrence of abrupt breaks. Dialogue ID1 has a large number of abrupt breaks and an absence of any signals that these abrupt breaks might be out of order. In dialogue ID28, on the other hand, where one participant believes there is an abrupt break, he calls it into question.

(131) *Richard:* I don't drink that much.
(132) *Todd:* Are you still talking to Misty? A lot, I mean?
(133) *Richard:* Am I still talking to Misty?

In the third line, Richard is questioning the relevance of talking to Misty to his drinking problem. One way of licensing an abrupt break is to show that you have suddenly remembered something. Richard does this in (203), but even here it turns out not to be an abrupt break, but the beginning of an explanation of the issue of the last four turns.

Investigation of this issue is complicated, however, by the fact that an appearance of topical coherence can result simply from a narrowness of concerns. For example, in dialogue ID11 there is a topical coherence on the issue of friendship with Leslie, but this may just be an artifact of their being wrapped up in this particular issue at that time. The apparent topical coherence of ID28 may result from the same cause, while the seeming incoherence of ID1 could result from the boys' wide range of common interests.

If topical coherence does in fact increase with age, one question is whether this is a result of cognitive development or of imposed conventions. Does it happen because older children are capable of larger stretches of coherent thought, or does it happen because others come to demand more highly structured talk from them. It is likely that the answer is "Both." Conventions are made available, or are imposed, as our cognitive development enables us to abide by them.

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2

Communication and Mutual Engagement*

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> The linguistic domain as a domain of orienting behavior requires at least two interacting organisms with comparable domains of interactions, so that a cooperative system of consensual interactions may be developed in which the emerging conduct of the two organisms is relevant for both. (Maturana, 1970)

I began my work on conversation in 1977 as a computer scientist trying to get computers to understand language. One day, sitting in my office contemplating the enormity of the task, the obvious finally struck: The lab was outside, not inside. Off I marched that very day, tape recorder in hand. I was very excited and confident. I knew this had to be the way to go, though I had no idea of what to expect. I spent hours taping everyone I knew, and hours transcribing what they had to say. Then I looked at the data. It was great. The patterns were obvious—here was Bill saying "By the way" again and starting a new topic of conversation; here he was saying "But anyway," and resuming that previously interrupted topic; and here was Fran doing the same thing. And look at how Fran uses a pronoun after a "But anyway," but not after a simple "But." I wonder if Bill does that. Yes, Bill does that too—wow! And so a theory was born, and, years later, scores of papers as well.

But now we have a problem. I'm asked to analyze and write about conversations whose participants' ages range from 8 to 24. What do I do? I do what any rational, pragmatic person would do. I compare the conversations of the younger age groups to the older age groups. Fair enough, and it is so recorded in the first draft of this paper. And, then, fortunately, we have a participants' workshop before the book is published. There I met and listened to child language developmentalists, sociologists, and anthropologists. And I reevaluated my thinking on the

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