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Three Children, Two Languages, and Strategic Reading: Case Studies in Bilingual/Monolingual Reading

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The major goal of this article was to describe and understand the cognitive and metacognitive knowledge of a proficient bilingual reader who was Latina. This was accomplished by comparing her reading processes and strategies with those of a marginally proficient bilingual reader and a proficient monolingual reader. Data collection processes included prompted and unprompted think-alouds, interviews, text retellings, a prior knowledge measure, and a questionnaire. All student participants read one narrative and two expository texts in English, and the two bilingual students also read a comparable set of Spanish texts. Qualitative analysis revealed four key dimensions that distinguished the proficient bilingual reader's performance from those of the other two readers: How she navigated unknown vocabulary in both languages, how she viewed the purpose of reading, how she interacted with text, and how she took advantage of her bilingualism. It was concluded that explicit knowledge of the relationship between Spanish and English can facilitate bilingual students' reading comprehension, that unknown vocabulary was an obstacle to reading comprehension for the two bilingual

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readers, that reading expertise and bilingualism visibly affected the reading comprehension of the bilingual students, and that the cultural and linguistic familiarity of the reading passages created a qualitatively different experience for the proficient monolingual reader.

A major challenge confronting educators in the United States is the low academic achievement of cultural and language minority children even though some gains have been reported (Applebee, Langer, & Mullis, 1987). For many, national surveys of academic achievement paint a portrait of minority students as bundles of problems, leading to the conclusion that they are at-risk for academic failure (So & Chan, 1984; Steinberg, Blinde, & Chan, 1984). This perception has channeled much research energy into an endless quest for debilitating traits. One consequence of this trend is that few observers, either from the education profession or the general public, associate successful reading with language minority students.

A more constructive research approach involves the search for enabling, rather than disabling, attributes of nonmainstream populations: for example, determining what successful Latino readers know about reading. Too often, successful minority students are discounted as anomalies—exceptions to the general trend. But they can be viewed as living proof that high expectations for the English-reading achievement of Latino students are not unreasonable. Such students also have the potential to serve as models of what proficient bilingual readers know and do when engaged in reading. Unfortunately, except for a few isolated examples (e.g., García, 1988; 1991; Padrón, Knight, & Waxman, 1986), careful analyses of language minority students are all too rare.

To illuminate this competence, we present the case of Pamela, a bilingual Latina student deemed to be a proficient English reader. More specifically, we wanted to describe and understand the cognitive and metacognitive knowledge that characterized her proficiency. A related objective was to understand the relationship between reading expertise and her Spanish/English bilingualism. As points of comparison, and to better understand whether Pamela's accomplishments stemmed from her bilingualism or her reading expertise, we included two additional readers: Catalina, a bilingual Latina student, viewed as a marginally proficient English reader, and Michelle, an accomplished monolingual Anglo-American reader.

A growing body of research focuses on the broad domain of second language reading in general (we refer the reader to syntheses and compendia of this literature: Bernhardt, 1991; Carrell, Devine, & Eskey, 1988; Weber, 1991). Although useful, this literature tends to view the academic achievement of children from minority language communities as peripheral to its main goal, that of understanding and specifying the parameters of reading in two languages. The 1990 census determined that over 17 million individuals living in the United States speak Spanish as their native language, and approximately 22,350,000 Americans identify themselves as Hispanic/Latino. Waggoner (1991) points out that the percentage of Latino students who do not

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complete their high school education is growing, even as students from other minority communities narrow the gap with students from the majority culture. We contend that the need for study and research focused specifically on successful Latino students (kindergarten through Grade 12) is not only warranted but absolutely essential.

Bilingual Reading

Speculation concerning the relationship of bilingualism to literacy knowledge and practices has led to the development of some provocative hypotheses. For example, Hosenfeld (1978) has suggested that learning a second language is a unique form of learning which may bring about greater awareness of the processes involved. The Soviet psychologist Vygotsky (1962/1934) viewed the learning of a foreign language as "conscious and deliberate from the start" (p. 109). He raised the possibility that one might expect to find differences between bilingual and monolingual children in their awareness of language and its functions.

Research on Chinese- and Spanish-speaking adults, considered poor English learners, has revealed that they use some metacognitive strategies while reading English, such as monitoring their comprehension and implementing repair strategies (Block, 1986). Hosenfeld (1978) determined that a native English speaker who was a successful reader of French could verbalize the benefits of using textual context for comprehending French print and that this reader could describe problems with comprehension while reading. Carrell (1989) found that native Spanish- and native English-speaking university students adjust their reading strategies on the basis of the language of the text and their own perceived proficiency in that language.

Research focused on the reading strategies of bilingual Latino students is relatively new. Langer and her associates (Langer, Bartolomé, Vásquez, & Lucas, 1990) claim that use of good "meaning making strategies" (pp. 462–463) affected the reading comprehension of children of Mexican origin more than did language proficiency. Langer et al. also claim that the students they studied used their Spanish language competency as an important source of information for the construction of meaning. Pritchard (1990) showed that bilingual Latino high school students used the same reading strategies across languages. O'Malley and his colleagues (O'Malley, Chamot, Stewner-Manzanares, Kupper, & Russo, 1985; O'Malley, Chamot, Stewner-Manzanares, Russo, & Kupper, 1985) report that Latino high school students engage in self-evaluation, self-monitoring, self-management, and self-reinforcement while learning English. These same students also view their knowledge of Spanish as an asset for learning English. In all, there is both limited theoretical speculation and some research evidence available to warrant investigation of bilingual readers from Latino backgrounds.

Case Studies in Reading Research

Calls for detailed, well-documented information on individual readers are often advocated, and yet seldom produced. Kleiman (1982) critiqued reading

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research examining the differences between good and poor readers and concluded that group comparisons may not provide the most useful information about beneficial reading strategies. He also claimed that detailed, in depth information about many individual cases is necessary for the development of general principles regarding good and poor reading practices. Cziko (1992) has also argued against group-based comparisons because of their tendency to obscure important findings. He proposes that focused, in-depth analysis of theoretically interesting cases possesses more potential for learning. Spiro and his colleagues (Spiro, Vispoel, Schmitz, Samarapungavan, & Boerger, 1987) contend that packaging information in the form of detailed and complex cases is a superior method for delivering instruction in ill-structured domains (such as the current knowledge base for second language reading).

Yin (1989) sees the strength of a case study in "its ability to deal with a variety of evidence documents, artifacts, interviews, and observations" (p. 20). Yin defines a case study as an empirical inquiry that: (a) investigates a contemporary phenomenon within its real life context, when (b) the boundaries between phenomenon and context are not clearly evident, and in which (c) multiple sources of evidence are used (p. 23). These conditions and stipulations describe well the situation of bilingual readers in American schools. Many relevant sources of data are available for these readers. In short, it seems reasonable to assume that a case study approach to investigating bilingual reading holds potential for learning about a relatively poorly understood phenomenon.

Use of Think-Alouds in Research

Think-alouds allow researchers a means for discovering the processes and knowledge underlying reading behavior (Baker & Brown, 1984). Think-alouds require individuals to verbalize as many of their thought processes as possible while silently reading a text (Wade, 1990). Other researchers suggest that normally automated processes can be observed when subjects encounter problems with comprehension, as is likely when readers encounter relatively difficult text (Afflerbach & Johnston, 1984).

Think-alouds can reveal information about students' interpretation of text and reading comprehension that is not always readily visible with other methods such as oral miscue analysis. Oral miscue analysis tends to be used when researchers are interested in understanding the types of decoding strategies readers employ. It frequently is used to compare the reading performance of bilingual students across two languages in order to investigate the effects of first-language literacy and second-language proficiency (see Barrera, 1981; Hudelson, 1981). Several researchers have used oral miscue analysis to compare the extent to which bilingual students use the same language cue systems (syntactic, semantic, graphophonic, discourse) to decode text in their native and second-language reading.

Although widely employed, the think-aloud procedure is not without its limitations (Afflerbach & Johnston, 1984). The primary concern regarding use of think-alouds is whether the need to divide attention between reading

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and verbalizing thinking processes interferes with subjects' thinking (Afflerbach & Johnston, 1984). This is an especially important concern in reading research because verbal ability and reading comprehension probably depend on overlapping competencies (Garner, 1987). Other concerns include problems associated with the novelty of thinking aloud and difficulties people encounter in trying to report processes that are so automated that they are unaware that they are even engaging in them (Olson, Duffy, & Mack, 1984).

Other scholars, such as Ericsson and Simon (1980, 1984) suggest that cognitive processes are not substantially altered by think-alouds. To counter the novelty problem, Olson, Duffy, and Mack (1984) recommend that subjects be provided with an explanation of the think-aloud procedure and that they engage in practice sessions before actual data collection. Hartman (in press) also found that explanation and practice increased students' level of comfort with the procedure as well as their disposition to engage in it actively.

In short, the think-aloud procedure has allowed researchers a much closer look at cognitive processes that are not easily accessible. A substantial understanding of the comprehension process can be constructed by examining think-aloud data and comparing it to data gathered from other indexes, such as text recalls, interviews, prior knowledge measures, and general background material (Afflerbach & Johnston, 1984; Garner, 1987).

Method

Students

The 3 sixth-grade student participants were selected from a larger study that focused on documenting and understanding the metacognitive strategies of sixth- and seventh-grade expert bilingual readers (Jiménez, García, & Pearson, 1994). The school they attended is part of a medium-sized district (5,824 students), which serves both working- and middle-class students. Total student population at the participating school was 428 at the time of the study. The minority student population was 147, or 34%, of whom most were Latino (27.5% of the total student population).

Three criteria were employed for selection of student participants. These were, in order of importance: students' ranking as proficient and less proficient English readers, their ability to think aloud while simultaneously reading silently, and the bilingual students' ability and willingness to read in Spanish. Recommendations for student selection were obtained from teachers, principals, and, in the case of the bilingual students, the bilingual program director. Teachers were asked to indicate which students were succeeding and not succeeding in the school reading program. The educators identified Pamela, a bilingual Latina student, and Michelle, a monolingual Anglo student, as successful or proficient English readers. They identified Catalina, a bilingual Latina student, as a student who was not succeeding in the school English reading program.

The teachers' categorization of students as proficient and less-proficient English readers was corroborated by examining their reading comprehension

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performance on a standardized reading test. Pamela, the proficient bilingual reader, scored at the 75th percentile on the Science Research Associates test of Basic Skills (SRA) in reading comprehension; Michelle, the proficient Anglo reader, scored at the 93rd percentile; and Catalina, the less-proficient bilingual reader scored at the 53th percentile in reading comprehension on the SRA test. Pamela's teacher was convinced of her status as a proficient reader. In spite of Catalina's average test score, her teacher considered her to be an unsuccessful English reader. Catalina also received assistance from the Chapter I reading teacher. The Chapter I teacher concurred with Catalina's classroom teacher about her lack of success in the English reading program. Michelle's teacher considered her an excellent reader.

Ability to think aloud was an especially important criterion for inclusion in the study. All three student participants proved capable in this respect in that they readily verbalized their thinking while reading silently. Some of the bilingual readers originally identified as less-proficient were unable to concurrently read and think aloud. In fact, in a pilot study, students who scored below the 40th percentile on a standardized reading test demonstrated great frustration attempting this task (Jiménez, García, & Pearson, 1994).

The bilingual students also had to be able and willing to think aloud while reading Spanish. Some orally proficient bilingual Latino students who were identified as proficient English readers did not believe themselves capable of reading Spanish, and, so, they were not included. As shown in Table 1, Pamela believed that she could read English better than Spanish, as did Catalina. Pamela rated herself a 4, on a scale of 1–5 (1 was very poor, and 5 was very good), for English reading and a 2 for Spanish reading. In contrast, Catalina rated herself a 5 for English reading and a 4 for Spanish reading. There is little doubt that many Latino students in the U.S. are more proficient in Spanish than English. However, the situation of Pamela and Catalina—greater English proficiency—is not uncommon (see Brisk, 1982; Craddock, 1981; Fishman, 1987; Ornstein-Galicia, 1981, for discussions of this issue).

As shown in Table 1, Pamela was a student in a Transitional Bilingual Education program for first and second grade, and Catalina was in a Transitional Bilingual Education program from kindergarten through fourth grade. Of course, Michelle had always been in an all-English classroom.

Materials

Think-aloud texts. Seven different texts were read by the three student participants. Three Spanish texts and two English texts were used for unprompted think-alouds (no prearranged prompts were written for these materials). In addition, prompted think-alouds consisting of one Spanish text and one English text (prearranged prompts and questions that focused on potential comprehension problems) were employed. All of the texts were complete and naturally occurring. They were selected because they were short (171 to 503 words), interesting, and provided opportunities for invoking

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Table 1
Student Background Information

Student	Age	Current grade level	Preferred language	Birthplace	Mother's birthplace	Father's birthplace	Years in U.S.	U.S. schooling grade levels	Bilingual schooling
Proficient bilingual reader									
Pamela	12	6	English	Mexico	Mexico	Mexico	5	1–6	1,2
Less proficient bilingual reader									
Catalina	12	6	English	U.S.	U.S.	Mexico	12	K–6	K–4
Proficient monolingual reader									
Michelle	12	6	English	U.S.	U.S.	U.S.	12	K–6	N/A

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cognitive and metacognitive strategies. Choice of texts also was based on the reactions of bilingual students included in a pilot study.

The set of Spanish texts included two narrative passages and two expository passages. The narrative texts were taken from an anthology of readings, *Cuentos y Más Cuentos,* compiled by John Pittaro (Pittaro, 1964). The Spanish expository passages were taken from the sixth-grade science book, *Enfasis en la Ciencia* (Sund, Adams, Hackett, & Moyer, 1985).

The English narrative text, "The King of Beasts," was taken from the book, *Mad Scientists* (Asimov, Greenburg, & Waugh, 1982). It can be seen in Appendix A. The English expository passages were found in the *Children's Britannica* (*Children's Britannica*, 1988).

Prior knowledge assessment. For each of the passages, an accompanying prior knowledge task was developed. The prior knowledge measures included an introductory statement that briefly described the topic of the text and its genre. What was specifically asked differed according to the text genre: expository or narrative. Bilingual students were given directions in both Spanish and English. They were encouraged to ask for assistance when writing their answers. Such assistance was included to lessen the importance of writing ability on their responses.

The measures developed for each of the expository passages asked students to write up to 10 different things about the topic. In addition, the students were asked to define four key vocabulary terms chosen from each of the texts. For example, for a passage on fleas, students were asked to write what they knew about insects, caterpillars, parasites, and diseases.

The overview section on the prior knowledge measures for the narrative texts included some information about the main characters and their roles in the story. Information about where a story of this type could be found was also added—that is, in a collection of science fiction stories or a book of funny stories. Instructions directed students to predict as much as possible about what might happen. For example:

> You are going to read two short stories in Spanish. The first is about a man who needs to buy something, but he does not have much money. Before you read the story, I'd like you to write up to 10 things that you think the man might do in the story.

Interview protocol. The interview protocol consisted of 11 questions. The first four were adapted from McNeil (1987). These questions dealt with very general aspects of reading. The second group of seven questions was developed on the basis of what prior research had indicated might influence the reading of proficient bilingual readers (Jiménez, 1992). They were also formulated and revised on the basis of pilot testing with adult bilinguals and children. The monolingual Anglo students were only asked the first four questions (see Appendix B for the complete interview protocol).

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Data Collection Procedures

Group sessions. There were two stages to data collection. The first stage consisted of two group meetings where the Latino students in this study, as well as the Latino students in the large study, met with the primary investigator. During these two group meetings, which were conducted entirely in Spanish, students heard the purpose of the project, filled out background questionnaires, and completed measures of prior knowledge.

The purpose of the second group meeting was to provide students with the opportunity to practice the think-aloud procedure. Students saw two videotapes. The first featured a Spanish monolingual child and the second an English monolingual child engaged in thinking aloud while reading. After discussing the videotapes, the students practiced thinking aloud with a partner. Students were encouraged several times to think about what they did while reading and to reflect on how bilingualism affected their reading. The primary investigator also met with the Anglo student separately and followed the same procedure used with the Latino students except that sessions were conducted in English.

Individual student sessions. The second stage of data collection consisted of individual sessions during which each student met with the primary investigator. For Catalina and Pamela, there were three meetings; for Michelle, who did not read in Spanish, there were two meetings. The students engaged in both prompted and unprompted think-alouds during these sessions. After they read each text, they were asked to retell it (see Jiménez, García, & Pearson, 1994, for discussion of recall data). Students were also interviewed during an individual session.

During the interview, the bilingual students were encouraged to use whatever language felt most comfortable to them. Michelle was, of course, interviewed in English. The data collection procedures resulted in approximately 220 minutes of data per Latino student and 120 minutes for the Anglo student of interview, recall, and think-aloud data.

Analysis

Data from the prior knowledge assessment, interview protocols, and think-alouds were combined to create individual profiles of the three students. Qualitative research procedures involving coding, memo writing, thematic delineation, and presentation were employed (Bogdan & Biklen, 1982; Patton, 1990). Before the profiles were created, the reading strategies utilized by the students during the think-alouds and mentioned by the students in the interviews were first identified (see Jiménez, 1992; Jiménez, García, & Pearson, 1994, for definitions and examples of the reading strategies coded in the think-aloud and interview transcripts). The transcripts for the three students, along with those of other students included in the larger study (Jiménez, García, & Pearson, 1994), were read and reread by three researchers in order to create an emerging framework of reading strategies (e.g. representative strategies) that took into account negative and positive examples that

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fit or did not fit (Glaser & Strauss, 1967). Reading strategies were defined as any overt purposeful effort or activity used by the reader to make sense of the printed material with which he or she was interacting. Pearson, Roehler, Dole, and Duffy (1992) describe strategies as conscious and flexible plans that readers apply and adapt to particular texts and tasks. Some form of verbalization was necessary for strategies to be recognized.

Although the identification and enumeration of the reading strategies served a useful purpose during the first phase of analysis, the development of the case studies required a second phase. In this analysis, data from each student's questionnaire, prior knowledge assessment, interview protocols, and think-aloud analysis (e.g., the identification and coding of the reading strategies) were juxtaposed and read and reread with an eye toward capturing the qualities that typified strategy implementation and knowledge of the student participants.

Discussion of the Findings

Integrated composite portraits of each of the three readers are presented here. All data sources were drawn on in an attempt to describe these students as completely as possible. First, we present as complete a description of our focal student, Pamela, as possible. Then we examine the profiles of both Michelle and Catalina in our quest for explanations of Pamela's competence.

Pamela, a Proficient Bilingual Reader

Four trends were present in the data for Pamela. These were logocentricity, a tendency to view comprehension as the goal of reading, an awareness of the relationship between Spanish and English, and a multistrategic approach to interacting with text. Although these trends overlap and reinforce one another, they are discussed separately in order to highlight key features of her reading.

Logocentricity

Pamela articulated a word-driven or *logocentric* view of reading. When asked to discuss reading, she emphasized the role of vocabulary. She said that reading facilitated the pronunciation and comprehension of words:

> *Pamela:* It [reading] teaches kids how to pronounce the words better, how to understand the words . . . words that are strange, that you never heard of. . . .

At first glance, Pamela appeared to hold a bottom-up view of reading. Although this may have been true to some extent, her logocentricity seemed to be firmly grounded in her second-language speaker status. The think-aloud data demonstrate that when reading, she did, in fact, pay special attention to vocabulary. This seems to have been a means by which she

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furthered her mastery of English. At the same time, Pamela did not ignore meaning construction. She simply focused on vocabulary to attain this goal.

Some examples of how Pamela dealt with unknown vocabulary while reading the English narrative text, "The King of the Beasts" (Asimov, Greenburg, & Waugh, 1982) follow. This was a science fiction piece set in the future. It portrayed the extinction of the human race due to carelessness.

A sentence in the text read: " 'Our budget,' he said, 'speaks of recreating extinct species.' " Pamela zeroed in on the words "extinct species." She had not identified these words on the prior knowledge measure. She defined *species* as "different classes of things," after noting that it and the Spanish word *especies* were very similar. This was an example of the searching for cognates strategy. García and Nagy (1993) claim that orthographic, phonetic, syntactic, and semantic features are all cues that may be useful for recognizing cognate vocabulary.

Pamela continued to demonstrate a concern for vocabulary when reading Spanish. The Spanish narrative text she read was titled "Como Estos Hay Pocos" ("These Guys Are Really Something"). It was a short, humorous story about two colorful characters who steal a box of matches. The characters unsuccessfully attempt to light the matches because they strike them on the wrong side of the matchbox. When they finally light one by accident, they save it as the only one that works and throw the rest away.

Pamela focused much of her attention on the word *cerillas* (matches) during her think-aloud of "Como Estos Hay Pocos." *Cerillas* is the key vocabulary item in the story and is repeated five times. After struggling to determine this word's meaning, she placed the problem on hold and read the next two sentences. At which point she offered a tentative solution:

> *Pamela:* Oh, yo creo que son las cositas que explotan o algo. (Oh, I think that they are the little things that explode or something.)

Pamela did not determine the meaning of this word to her complete satisfaction, however. She settled for "something that explodes," but it was clear that she was not happy with her resolution. When she came to the end of the story, and was trying to decide on what the story as a whole meant, she resolved:

> *Pamela:* Yo creo que son esas cositas que hacen *sparks* así. [E]s algo que se enciende . . . esas cositas brillantes. (I think that they are those little things that make sparks like that. It's something that is lit . . . those little bright things.)

There are several possible reasons for why she had difficulty with this word. First, a similar but slightly different form of the word is more common in Mexico, *cerillos*. In fact, Pamela substituted this form twice for *cerillas* but still was not sure of its meaning. Second, other words, such as *fósforos* and

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mechas, are commonly used as referents for the same object in the Spanish-speaking world. In standard Spanish, *mecha* refers to a wick or a fuse, but it is also used colloquially, especially in Northern Mexico and the American Southwest, for the English word, *match*. It was not clear from the think-aloud data which lexical variant Pamela preferred. Her determination to learn and understand vocabulary, however, permeated both her reading of English and Spanish text.

Comprehension

Pamela expressed concern with meaning construction that, while secondary to her logocentric approach, was clearly parallel. For example, in describing the differences between herself and a 2-year-old looking at a book, she asserted:

> *Pamela:* Because you (the 2-year-old) look at the pictures, and you don't know what's going on . . . but when you read it, you know . . . what's going on, and it gets you interested.

And later, when she discussed what it meant to be a good reader, she compared herself as a beginning English reader to what she was like at the time of the interview:

> *Pamela:* It's like before I would just read a book, and whenever anybody would ask me a question . . . I wouldn't be able to answer it because I would just read it, and in my mind I would be thinking about something else. When you read, you have to be able to imagine in your head what's going on. And then you, in your head, you remember what's going on.

Pamela's desire to understand what she read was evident in many of the examples illustrating her logocentricity. Her overall goal of comprehension also was apparent when she took stock of her understanding as a whole. For example, Pamela was able to recount the sequence of events that made up the story, "The King of the Beasts" (Asimov, Greenburg, & Waugh, 1982), and she included many details.

At one point, Pamela stopped and monitored her current level of understanding while reading the Spanish narrative text. She listed what she understood in the story to that point and then isolated what she did not understand:

> *Pamela:* ¿Éste no vale nada? I don't get it. OK, sé que llevaron una cajita de cerillas, lo que no entiendo es que son cerillas y que es fósforo? (This isn't worth anything? I don't get it. OK, I know that they took a small box of matches; what I don't know is what are matches and what is phosphorous?)

Finally, Pamela tried to summarize what she knew about the text, but she did this while still wrestling with the meaning of the word *cerillas:*

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Pamela: Yo creo que, cerillas son las cosas que le dije, y que a lo mejor el chiste, este es de los chistes, ¿verdad que sí? que no la pueden guardar para atrás, porque esas cositas cuando se usan una vez, ya no se vuelven a usar otra vez. (I think that matches are the things that I told you about, and that may be the joke; this is one of the funny stories, right? That they cannot put that away, because once those little things have been used they cannot be used again).

Pamela's determination to comprehend showed in her persistence and implementation of different reading strategies, especially her willingness to make inferences that went beyond textually explicit information.

Awareness of Relationship Between Spanish and English

Congruent with Pamela's logocentricity and her desire to comprehend what she read was her understanding of the relationship between the Spanish and English languages. She stated that this relationship was helpful for understanding text written in Spanish. She backed up her claim by referring to the word *chocolate*. She confided that pronouncing some words using the phonology of each language could be useful. She also noted that *chocolate* was written the same in both languages. Later, she made a similar point about English reading, which she illustrated with another pair of cognates:

Pamela: Like *carnivorous, carnívoro*. OK, some like I know what it is in Spanish. Some words I go, what does that mean in Spanish?

Pamela believed that cognate vocabulary facilitated her comprehension of written English, and she emphasized that she had found this to be especially true of science books.

One of the most interesting examples of the strategy of searching for cognates occurred as Pamela read "La Energía Solar" (Sund et al., 1985). This piece was taken from a Spanish science book. Pamela followed a three-part sequence in determining the meaning of the word, *líquido*. Most readers of English will recognize this word as *liquid,* but Pamela's effort is instructive:

Pamela: Ok y hay un líquido, líquido, así, líquido? Liquid? Entonces hay como un liquid que, que lo usan para echarle al colector. . . . el "y se mueve a través del colector." (OK and there is a liquid, liquid, like this, liquid? [She alternates between the Spanish pronunciation of qu /k/ and English pronunciation /kw/.] So then, there is like a liquid that, that they use to throw in the collector. . . . the liquid and it moves through the collector.)

It should be noted that Pamela played with the English and Spanish phonological systems to arrive at her conclusion. She switched back and forth between *liquid* and *líquido* before she was satisfied with her comprehension.

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Pamela also successfully determined the meaning of the word *brutality* while reading "The King of the Beasts" (Asimov, Greenburg, & Waugh, 1982) by drawing on her knowledge of both Spanish and English. Her interaction with this word provides a glimpse of how metacognitive knowledge, often unseen, can drive reading strategy application. She demonstrated awareness of the relationship between Spanish and English when she said, "because a lot of words in Spanish, they sound alike in English." Pamela's subsequent search for cognates netted her the word *brutalidad,* which she presumably understood. She provided a short definition, "maybe really rough," which showed how she mined both of her languages for meaning.

Pamela exploited the relationship between Spanish and English as one more source of information useful for comprehension. Her comprehension of the word *species* by accessing the Spanish word *especies* has already been noted. While monolingual English speakers might also recognize the relationship between Spanish and English cognates, only a Spanish/English bilingual such as Pamela could incorporate that information into ongoing meaning construction.

Multistrategic Approach to Reading

Pamela employed many different reading strategies when reading English text. Focusing on vocabulary emerged as a crucial pivot around which many other strategies revolved. For example, using context, monitoring, invoking prior knowledge, restating, and inferencing were present in her thinking, but often these were employed in the service of determining the meaning of unknown vocabulary. Some examples have already been given in the preceding sections.

Pamela also employed a variety of strategies for making sense of Spanish text. Most revolved around vocabulary, but she consistently tried to make sense of the whole passage. An example was her multistrategic approach to dealing with the compound word *frotarla* (to rub it):

> *Pamela:* Umm, yo no sé, *frotarla,* that's the word that maybe can explain everything. . . . (Umm, I don't know, *frotarla* . . . that's the word that maybe can explain everything.)

Pamela's comment was interesting for several reasons. The first is that she was aware of a problem (monitoring), and she specified what it was. The second is that she was most interested in getting the big picture, "that can explain everything" (demonstrating awareness). The third is that she code switched to make this point (code switching).

Pamela also carried her multistrategic approach over to her reading and thinking aloud of the Spanish expository texts. The majority of her strategy use was in conjunction with her concern to understand certain vocabulary items. For example, during her think-aloud of "La Energía Solar" (Sund et al., 1985), she identified the word *fuente* (fountain or source) as unknown. The sentence she had read was:

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> ¿Por qué crees que la energía solar es una fuente alternative de energía importante? (Why do you think that solar energy is an important source of alternative energy?)

At first, Pamela was not sure if the word in question was *fuente* or *fuerte* (strong). She quickly rejected *fuerte* as a possibility, however:

> *Pamela:* Es una fuente o fuerte alternativa de energía importante. No sé si esa palabra es fuente, ¿verdad que sí? Allí dice fuente. (Is an important source or strong alternative for energy. I don't know if that word is source {fountain}, isn't that right? There it says source [fountain].)

Pamela may have had trouble in this case because she translated *fuente* as *fountain*. She said, "It's like a water fountain." Once she translated the word, however, she decided that she did understand, which she indicated by saying, "Yo entiendo esto" (I understand this), and she proceeded to answer the original question posed by the text. The integration of a variety of reading strategies enabled Pamela to construct interpretations for each of the texts she read.

Michelle, the Proficient Monolingual Reader

Three trends were apparent in the data collected from Michelle. The first was that she possessed a very sophisticated understanding of reading. The second was that, like Pamela, she implemented a multistrategic approach to reading. However, in contrast to Pamela, Michelle demonstrated a tendency toward global reflection concerning her comprehension.

Sophisticated Understanding of Reading

Michelle's sophisticated understanding of reading was reflected in her high reading test scores, the passage-specific prior knowledge she brought to the reading task, and the high degree of reading strategy knowledge she articulated.

Michelle accentuated comprehension as the goal of reading. Coherent discussion of the text was her criterion for successful reading. She also made a distinction between basic and more advanced vocabulary. She believed that a knowledge of basic vocabulary was necessary to be a good reader. She knew that good readers read frequently and that they read large amounts of material. She said that good readers were fluent, which she described as not stumbling or stopping while reading. Michelle also emphasized the role of reading as an indispensable tool, absolutely necessary for accomplishing life's tasks:

> *Michelle:* [Reading is] a way of learning . . . about anything and everything . . . it's like if you didn't have food, you can't survive . . . if you can't read, it's hard to survive, it's a struggle.

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Michelle brought more text-specific prior knowledge to the task of negotiating text than Pamela, and this, combined with her skillful use of several reading strategies, allowed her to construct passage recalls that were complete, coherent, and comprehensive. Michelle's understanding of invoking prior knowledge was very explicit:

> *Michelle:* I relate it (the text) to something I've seen before or whatever . . . like if I already knew from the movie *20,000 Leagues Under the Sea* that an octopus lives in the sea, you remember that, . . . the things about the octopus because it was in the movie. . . .

Michelle's integration of prior knowledge with textual information can be seen in the following quote taken from her think-aloud of expository text. Michelle monitored her own stock of personal experiences and explained that since she had never personally seen a flea jump she was not qualified to comment on the matter. This statement points to the active manner of invoking prior knowledge that she pursued. Michelle also connected her reading of this text with information from a science class.

> *Michelle:* I'm thinking the flea is an insect, and it's dark brown, it has three pairs of strong legs, and when I think of a flea having strong legs I really don't think so because they're not that big. And it says it could jump a great distance, *but I've never really seen a flea jump, so I wouldn't know.* And then it says the flea's made up of segments and jointed parts, which I remember cuz we had that in science, like at the beginning of the year. . . .

Multistrategic Approach to Reading

Michelle employed a variety of strategies as she made her way through text. She most often began by restating a portion of the text, and then she indicated use of monitoring, visualizing, invoking prior knowledge, inferencing, questioning, or rereading. Michelle rarely indicated a concern for determining the meaning of unknown vocabulary.

Michelle was asked what she did to remember and learn English expository text. She responded that, after going through the text once, she looked it over again (rereading). Then she said that she would picture it (visualizing). She said that, if the material was interesting, she could pick it up (comprehend) immediately. Michelle also mentioned rereading, questioning, and invoking prior knowledge as strategies that she used while reading.

Michelle began the first cycle of her think-aloud of the text, "The King of the Beasts" (Asimov, Greenburg, & Waugh, 1982) as she always did by first restating a portion of the text: "Well, it says the biologist. . . ." Restating seems to have served as the catalyst for initiating visualizing as a strategy. Michelle depended on visualizing a great deal, and, even when she did not

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explicitly state use of this strategy, her thinking contained vivid graphic elements. For example, she described the laboratory as a "room where there's like potions and everything." Michelle's visualizing, in turn, seemed to depend on her prior knowledge. She mentioned monkeys as something she would expect to see in a zoo.

Michelle's prior knowledge of key vocabulary terms was useful for inferencing. On the prior knowledge measure, she gave some indication that she knew what the words *creation* and *extinct* meant. After rereading the text, she again restated a portion of it and then gave her explanation of what was happening. She described the act of re-creation as pouring a potion on dinosaur bones to bring them to life. This inference built on her prior visualization of the laboratory as a room full of potions. It also demonstrated how she understood the act of re-creation. Of interest is that she did not have trouble comprehending what re-creation was, even though this seems to have been a concern of hers later:

> *Michelle:* I don't know how somebody could re-create something if it's like dead, how could it happen?

Michelle made many high-level inferences and continuously monitored her comprehension. For example, she made the critical inference, "and for some strange reason right now I just thought that the biologist was an animal . . . and he's the one doing the studies on man." Michelle did not explain how she came to that conclusion, but she was very close to the author's intended meaning for the passage. The message was that human beings, through careless management of the Earth, now needed an outside force to rescue them.

Michelle also used the strategy of visualizing during her reading of the prompted English expository passage, the "Octopus" (*World Book Encyclopedia,* 1988). She skillfully combined this strategy with that of invoking prior knowledge. For example, she pictured an octopus swimming in the sea. She noted that octopuses possess soft bodies, eight legs, and she inferred that they might feel like a pillow if touched. Two other examples of her use of the visualizing strategy follow:

> *Michelle:* Ok it says here there are fifty kinds of octopuses, well I get this picture in my head of like the sea animal that's going up and down, and then I think of different octopuses like different sizes, shapes, colors. And then it says, if an octopus loses an arm, a new one grows in its place, and I think of it having seven arms and like one starting to grow, like [I can] picture, I'm picturing the octopus and seven arms and then this like small like stub that's there.

Reflection

One of Michelle's greatest strengths as a reader was her ability to stand back and reflect on her comprehension of a passage as a whole. In this

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way, she created opportunities for repairing and consolidating comprehension. For example, when Michelle restated the last line in the text, "Yes. It's a man," she put several strategies into action in an attempt to make sense of this passage. The description that follows of Michelle's thinking includes only those thoughts that occurred after she had initially read the entire story.

Her first reaction after reading the final statement in the story was to express confusion, a form of monitoring. This was precisely the effect desired by the author. All of the student participants had expected the mystery creature referred to in the story to be some sort of animal, not a human being. Michelle evaluated the situation as "weird" because she could not understand what a man would be doing in a tank. Her confusion triggered the initiation of a search for further information. At this point, Michelle was engaged in more than simply rereading. She described her activity metacognitively as a search for "something, anything that might explain or give a hint" as to why there was a man in the tank and, also, what the biologist was doing. She inferred that the biologist was planning to put the man in his zoo. This was the first of several important inferences she made.

Michelle did not immediately find what she was looking for by rereading. So, she abandoned her initial search and began another, "I'm going back to the first paragraph and reading that." This action seemed to net her a clue. She reinterpreted the words "higher animals" to mean human beings, since, as she said, "Most animals are extinct." This was another inferential milestone in Michelle's thinking.

Michelle was still not entirely happy with her meaning construction, however. If the biologist and his assistant were animals, she reasoned, why would they be talking? Questioning and monitoring were synonymous in this case, as was invoking her prior knowledge of animals. But this did not make sense to her, and so, she initiated yet another round of rereading. This time, Michelle made another important inference. She inferred that animal life had been eradicated and that people were the only living creatures left on the planet. She also understood that human beings were to blame for this situation. Her final statement that man is the most dangerous of all the species was an important inference.

By actively reflecting on her overall comprehension, Michelle came very close to the author's intended meaning for this story. Michelle's reflection was action oriented. Once she monitored a lack of comprehension she took steps to fill in the missing information. Her reflection resulted in the implementation of a wide range of reading strategies that she applied skillfully.

Michelle did not demonstrate as much reflection when reading the two expository texts, but there were hints of it in her thinking. For example, after she read the Octopus text (*World Book Encyclopedia,* 1988), we wanted to know what she usually did after reading a text of this type. Her answer is informative:

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Michelle: I think in my mind of what I learned and, you know, of what I could remember . . . and if I didn't remember much then I should go back and read it or just look over it, and if I remembered a good portion of it then it's fine.

Catalina, the Less Proficient Bilingual Reader

Three recurrent themes permeated the comments and think-aloud data produced by Catalina. The first was that of believing bilingualism to be cognitively debilitating. The second was that she expressed a faulty conception of reading, and the third was that she employed reading strategies in a fragmented manner.

Bilingualism as Confusing

Catalina did not have a clear understanding of how reading in English related to reading in Spanish. She noted that knowledge of English was helpful when reading Spanish, but she did not believe the reverse was true. Although Catalina said that knowing English was useful when reading Spanish, she never explicitly employed that knowledge. Her lack of acknowledgment of English when reading Spanish, or Spanish when reading English, was a sign that she either did not know how to exploit the relationship or that she did not truly believe it was useful for comprehension. The following quote contains her thoughts on this matter:

Catalina: I get mixed up cuz I talk Spanish and English.

Investigator: And that mixes you up, how does that mix you up Catalina?

Catalina: Cuz of the words, . . . they sound different sometimes.

Catalina also had conflicting views about second-language readers. On one hand, she said that second-language readers could read two languages. On the other, she said that a monolingual English reader would be a better English reader because bilingualism was confusing.

Although Catalina had been in a bilingual education program until the fourth grade, she rarely read in Spanish except occasionally when her mother gave her things to read. She added that this usually occurred after report cards came out and was discontinued soon after. She insisted that knowledge of the two writing systems was confusing, and she gave the example of vowels possessing different values in English and Spanish to substantiate her claim:

Catalina: I think what confuses you is the . . . , the letters cuz like *e, e* in English is like the *e* and then in Spanish you say, wait, in Spanish it's *i,* in English, so people get mixed up.

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Faulty Conception of Reading

Because the basic conception of reading held by Catalina was that of a novice, and often faulty, she engaged in reading behavior that was counter-productive. Her inferencing, for example, often resulted in drawing incorrect conclusions, and she failed to monitor her comprehension after completing an initial pass through text. On the other hand, she demonstrated that she could decode the English and Spanish texts, as well as recall key, albeit fragmented, aspects of what she had read. She used the strategies of restating the text, focusing on vocabulary, monitoring, questioning, and inferencing. What she did not do was work at resolving comprehension problems.

Catalina's view of reading might best be characterized as uninformed. She described many different activities associated with reading, but she never implemented them in concert with one another. Her strategic understanding of reading was also limited. For example, when asked what she normally did when coming across unknown vocabulary, she replied, "Yo siempre sigo leyendo" ("I always just keep on reading"). She also emphasized oral reading performance. Some of her comments describing her view of reading follow:

Catalina: You have to read a lot, try a little more words . . . Like vocabulary words. . . . You read 'em in a story so you could know what they mean. . . . Just like reading and answering questions.

Investigator: What is different, Catalina, about a person who is a good reader compared to somebody who is not?

Catalina: I think the one who doesn't know how to read, I think he stops a lot and passes the periods. . . . [He] doesn't act that well like they say it in the book, and a good reader sees the commas and the periods . . . and when you have to yell and everything.

Catalina's faulty conception of reading could be inferred from comments made while reading the English narrative, "The King of the Beasts" (Asimov, Greenburg, & Waugh, 1982). She finished her think-aloud of this text by inferring that the man referred to in the text was really more of a beast. She offered the title of the story as evidence. Although her resolution of the problem was much less satisfying than that of Pamela and Michelle, she appeared to have been completely convinced. She exclaimed, "Well, we're done with this story!" and left it at that. Catalina was not only satisfied with her resolution, she seemed to believe that the act of reading terminated as soon as her eyes fell on the last word of the text.

Catalina also displayed a faulty conception of reading when reading Spanish narrative. For example, she finished her think-aloud of "Como Estos Hay Pocos" (Pittaro, 1964) with a summary statement:

Catalina: Que allí están los dos hombres en la casa y tiran . . . los otros cigarros . . . y guardan el otro, y yo creo que

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lo están guardandolo en un lado que nadie lo puede agarrar. (That there are two men in the house and they throw away the other cigarrettes . . . and they save the other, and I think that they are saving it someplace where no one can get it.)

Investigator: ¿Y el chiste pués? (And the joke then?)

Catalina: No sé. (I don't know.)

Although Catalina's summary was grounded in the text, she was not at all bothered by her inability to understand the humor in the story. As always, once she had gone through a text, she was finished.

When reading the Spanish expository text, "La Energía Solar" (Sund et al., 1985), Catalina came across the word *ventajas* (advantages), which was unknown to her. Although Catalina identified this word as unknown, she did not implement any observable strategies for comprehending it. Instead she immediately ascribed to it an incorrect meaning:

Catalina: Yo creo que *ventajas* es algo especial que tiene el sol, que lo hace caliente. (I think that *ventajas* is something special that the sun has that makes it hot.)

Catalina's definition of *ventajas* as something that causes the sun to be hot missed the point of the text. What is more surprising is that Catalina never returned to this problem. She did not test her hypothesis by making sure that she now understood the sentence of which this word was a part. In all of the examples presented, Catalina's primary goal seems to have been to finish the task, or more simply, to move through the text. Comprehension as a goal was secondary, if present at all in her statements.

Fragmentation

Restating the text, focusing on vocabulary, monitoring, and questioning were present in Catalina's thinking, but she was less successful in coordinating these strategies than either Pamela or Michelle. For example, once she detected a problem, she appeared unable to implement satisfactory solutions. She seldom developed useful understandings of unknown vocabulary and often did not answer the questions she posed. Strategy implementation was present, but instances of coordinated strategy use were rare. Use of one strategy did not enhance or trigger use of other strategies with comprehension as an overall goal. Fragmentation as a quality imbued her reading activity.

Catalina's attempt to comprehend the word *budget* while reading "The King of the Beasts" (Asimov, Greenburg, & Waugh, 1982) illustrates some of the difficulties she faced. She successfully identified *budget* as an unknown word. She also demonstrated partial knowledge of the term by saying she had heard somewhere about "money being in budgets," but she stopped dealing with the word at this point and started thinking about the next

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sentence. In short, she did not integrate her knowledge into an overall framework.

Catalina's thinking for the Spanish narrative text exhibited many of the same characteristics that her thinking for the English narrative text had had. These were: monitoring without the initiation of compensatory or supportive strategies, restating the text without the integration of new information, and inferencing that was often incorrect. Catalina began her think-aloud of "Como Estos Hay Pocos" by monitoring:

Catalina:	Ya leí . . . pero . . . no entiendo. (I already read [the title] . . . but . . . I don't understand.)

Instead of implementing compensatory action, Catalina simply moved on. After a rather lengthy pause, she shrugged her shoulders when asked what she was thinking.

In addition, Catalina restated the text often but without integrating this information into an overall conception of the text. She did not initiate other strategies after restating the text. In fact, restating the text seemed to be a kind of filler activity for Catalina instead of serving as a strategic catalyst. The following illustrates Catalina's approach:

Catalina:	Están hablando del manicomio, umm. . . . (They are talking about an insane asylum, ummm).
Investigator:	¿Qué piensas de eso? (What do you think about that?)
Catalina:	Estoy viendo como en un manicomio la gente están adentro del manicomio, y como están locos. (I'm seeing how in an insane asylum the people are inside an insane asylum, and they are crazy).

Discussion

While our focus in this study was directed toward Pamela, the proficient bilingual reader, the profiles of all three readers contributed to our emerging understanding of the relationship between bilingual language proficiency and reading. From Pamela, we learned that logocentrism could coexist with, perhaps even enhance, a meaning-centered view of reading. We also learned that her flexible, multistrategic approach to reading included strategies that are unique to biliterate individuals. From Michelle, we confirmed what is broadly known about expert monolingual readers: She possessed a sophisticated understanding of reading, a multistrategic approach to reading, and a tendency toward global reflection concerning comprehension. From Catalina, we learned that bilingualism can be debilitating if a student possesses a faulty conception of reading, a fragmented deployment of reading strategies, and, most important, a failure to appreciate the advantages of bilingualism. This complex relationship between bilingualism and reading is revealed in several aspects of the reading process: How readers approach vocabulary,

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how they conceptualize the purpose of reading, how they interact with text, and how bilingual readers regard their two languages.

Importance of Vocabulary

A key feature of the bilingual students' protocols was logocentrism; by contrast, the protocols of the monolingual student revealed virtually no concern about vocabulary. Pamela, for example, was extremely concerned about learning vocabulary. For her, vocabulary was both a bridge and a barrier. Pamela knew that unknown vocabulary was a major impediment to her reading comprehension in both English and Spanish. She used morphological knowledge, especially cognate knowledge, to unlock the meaning of unfamiliar words when reading in either language. As a second-language reader, Pamela was aware of the difficulties she faced, and she developed strategies for dealing with them. She was clearly developing the kind of metacognitive knowledge of self, task, and strategies described by theorists as characteristic of proficient readers (Baker & Brown, 1984; Paris, Wasik, & Turner, 1991).

Pamela's obsession with vocabulary may reflect an important interaction between her expertise as a reader and her status as a second-language learner. Fluency, an important characteristic of skilled reading (Anderson, Hiebert, Scott, & Wilkinson, 1985), undoubtedly depends to some extent on the ability to recognize large numbers of words. In fact, both Adams (1990) and Golinkoff (1975–1976) specifically named rapid lexical access as necessary for skilled reading. Of course, this presents a problem for students learning English as a second language because only rarely will they have acquired as much English vocabulary as native English speakers. García (1988, 1991) found that Latino children interpreted known vocabulary in unconventional ways and that they encountered many more unknown words when reading in English than Anglo children. In light of García's findings, it makes sense that Pamela, as a proficient English reader, possessed a heightened awareness of this aspect of reading. For her, word meanings paved the way toward comprehension.

Catalina was similar to Pamela in her obsession with vocabulary. However, for Catalina, vocabulary was a barrier, never a bridge, to comprehension. She said that one of the purposes of reading was to learn the meaning of words. Although she was able to identify unknown vocabulary, she was not able to construct provisional word meanings useful for comprehension. She possessed an awareness of the importance of vocabulary as a barrier but no strategic tools to address the problem.

The strategy of focusing on vocabulary was conspicuous by its absence in the protocols of Michelle. For Michelle, vocabulary processing had reached a stage of fluency if not automaticity. At least for the sample of passages used in this study, which may have seemed very rudimentary to Michelle, vocabulary was so embedded as an ongoing part of the process of making meaning that it never surfaced in her protocols. In retrospect, it would have been interesting and useful to have provided Michelle with material that would have challenged her knowledge of English vocabulary.

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Looking across the three readers, the pattern suggests that Pamela's obsession with vocabulary stems from her bilingualism rather than her reading proficiency. Only the two bilingual students exhibited this awareness. The pattern also suggests that vocabulary awareness is not sufficient; the disposition to employ strategies—such as, cognate comparison—to overcome the vocabulary gap is what distinguishes Pamela from Catalina.

View of Reading

Differences surfaced among the three readers with respect to their views of reading. Pamela thought about reading primarily as a process of learning word meanings to enable comprehension. Michelle possessed a sophisticated understanding of reading, as demonstrated both by her performance and her knowledge about the reading process. Catalina displayed a limited conception of reading which seemed to interfere with her ability to comprehend.

Pamela saw reading primarily in terms of learning new vocabulary. She articulated the view that specific vocabulary knowledge was important for reading in both languages, and she was especially cognizant of the relationship between Spanish and English vocabulary. Her logocentrism, however, did not interfere with comprehension, which she also stressed as an important goal of reading. Indeed, Pamela was very reflective, constantly monitoring her comprehension by listing what she knew and did not know. She also believed that successful reading was indexed by what a reader could remember from the text.

Michelle was able to articulate many important qualities of reading in general. She was aware of some of the finer nuances of reading processes, such as invoking prior knowledge to construct and monitor meaning. García (1988, 1991) found that monolingual Anglo readers brought more relevant prior knowledge to the task of reading mainstream standardized reading test passages than did bilingual readers. Michelle's profile confirms that finding and adds the insight that knowledge of *how* prior knowledge relates to reading comprehension is an important component of a good reader's repertoire.

Catalina's primary goal, regardless of the language of the text, was to get through the reading so she could get on with other, presumably less onerous, tasks. While she demonstrated some awareness of the need to use her knowledge to monitor comprehension (e.g., I don't get this part), she rarely demonstrated either the tools or the desire to repair her comprehension. She just went on to the next sentence.

Manner of Interaction With Text

One of the consistent claims of metacognitive scholars (e.g., Paris et al., 1991; Paris, Lipson, & Wixson, 1983) is that good readers use more strategies more effectively than poor readers Our trio of readers support this claim vividly. While both Pamela and Michelle demonstrated a multistrategic approach to reading, Catalina demonstrated fragmentation in her employment of reading strategies.

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Both Michelle and Pamela explicitly identified and, at some point in their think-alouds, actually demonstrated the use of rereading, questioning, and visualizing as useful fix up strategies. But Michelle's knowledge and use of these strategies was more highly developed and versatile. Pamela's use of these strategies was primarily directed toward her logocentric focus; they helped her figure out the meanings of key words, which, in turn, enhanced her comprehension. Michelle, by contrast, used the strategies to construct and monitor meaning more directly. For example, when Michelle asked questions of herself as she read, the questions often preceded key inferences she made concerning the text. Michelle could not only talk about the importance of prior knowledge but actually use it to help her negotiate the meaning of text.

As we noted earlier, Catalina could identify but not repair comprehension problems. The most prominent characteristic of her interaction with text was fragmentation. Like Michelle and Pamela, she was able to restate the text and do some monitoring and inferencing. But for Catalina, these strategies were accomplished in isolation and not used to construct an overall coherent representation of the text. By contrast, Michelle used restating in concert with several other strategies until she was satisfied with her model of meaning. Catalina's passage recalls demonstrated that she could retain some of what she read but not to the same degree as the better readers. These findings corroborate those of Block (1986), who found that poor English readers who were native speakers of Spanish and Chinese implemented strategic processes but in a limited, and at times, ineffective fashion. We do not know to what extent Catalina would have demonstrated similar comprehension problems with considerably easier text. However, a problem with think-alouds is that the text used has to be provocative and difficult enough to provoke comprehension monitoring and repair. Additional research, focusing on less proficient bilingual readers at the sixth- and seventh-grade levels, might be able to examine to what extent the type of metacognitive knowledge and strategy use of less proficient readers such as Catalina vary with the difficulty of the text presented.

Handling of Two Languages

The theme of fragmentation versus integration repeated itself in how the two bilingual readers viewed the relationship between their two languages. Catalina expressed the view that knowledge of English reading facilitated Spanish reading, but, unlike Pamela, she did not believe that knowledge of Spanish was useful for reading English. Pamela, on the other hand, often used the bilingual strategy of searching for cognates in both languages. This strategy was generally effective in that she was often able to find cognates in either Spanish or English to buttress her comprehension.

Paris and Myers (1981) demonstrated that differences exist between good and poor readers in what they know about reading. This research indicates some differences between proficient and less proficient bilingual readers concerning their understanding of the relationship between Spanish

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and English. Pamela was very much aware of the relationship, and she exploited it, whereas Catalina felt that bilingualism was confusing.

Implications for Instruction and Research

From an instructional perspective, this work suggests that finding ways to deal with unknown vocabulary is a major concern for bilingual readers. But, the clues provided by Pamela's effective cross-lingual fix up strategies might provide some instructional guidance. More specifically, by emphasizing the relationship between Spanish and English, teachers not only direct Latino students to specific information, such as vocabulary knowledge, to help them resolve problems, but they may also help students develop a high regard for their native language as a reservoir of information useful for reading in either language. For Pamela, this often meant making the most of her Spanish language knowledge while reading English and vice versa while reading Spanish. These suggestions are consistent with the work of Chamot (1992), who found that some high school Latino students learning English in American schools did not view their prior learning in Spanish as a legitimate or useful source of information. She recommended that bilingual students be told explicitly how to make connections between the two languages. These synergistic relationships need to be studied more carefully in future investigations. Researchers need to learn to what extent informing bilingual students, such as Catalina, of the cognitive and strategic advantages of their bilingualism can enhance their reading in both languages. Explicit teaching is one approach, but others include providing contexts in which students are rewarded for, and allowed to continue to develop, their cross-linguistic knowledge; encouraging students to work together to construct meaning across languages; and/or demonstrating through modeling the positive advantages of bilingualism.

The protocols provided by Pamela, Catalina, and Michelle provided the basis for examining in depth the thinking of a proficient bilingual reader while engaged in reading naturally occuring texts. From the three readers' protocols, we were able to gather fresh insight into the ways bilingualism and reading expertise affect reading. Pamela's contribution reminds us that bilingual readers bring specialized resources to the task of reading and that they encounter specific obstacles that differ from those of their mainstream counterparts. Catalina demonstrated how a novice's perception of reading and a negative assessment of bilingualism can lead to poor reading comprehension. Michelle reminded us that monolingual students, especially when they are unencumbered by vocabulary and prior knowledge demands, are able to devote more of their cognitive resources to the task of interpretation and comprehension. Additional research needs to focus on the extent to which our findings are representative of other bilingual and monolingual readers.

Perhaps most importantly, Pamela allowed for a close-up view of a successful bilingual Latina reader. Her example demonstrates that bilingual stu-

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dents may possess untapped potential that is limited by models of reading based entirely on the thinking and behavior of monolingual Anglo readers. Her reading profile suggests that additional research needs to focus on understanding how the reading of bilingual students of varied reading proficiencies, languages, and ages differs from that of their monolingual counterparts. Considerable research has focused on the reading of adults learning English as a foreign language; much less research has focused on the reading of children in the United States who are learning to read English as a second language (García, Pearson, & Jiménez, 1994; Weber, 1991). This study is one step in that direction.

APPENDIX A
The King of the Beasts
Philip José Farmer

The biologist was showing the distinguished visitor through the zoo and laboratory.

"Our budget," he said, "is too limited to re-create all known extinct species. So we bring to life only the higher animals, the beautiful ones that were wantonly exterminated. I'm trying, as it were, to make up for brutality and stupidity. You might say that man struck God in the face every time he wiped out a branch of the animal kingdom."

He paused, and they looked across the moats and the force fields. The quagga wheeled and galloped, delight and sun flashing off his flanks. The sea otter poked his humorous whiskers from the water. The gorilla peered from behind bamboo. Passenger pigeons strutted. A rhinoceros trotted like a dainty battleship. With gentle eyes a giraffe looked at them, then resumed eating leaves.

"There's the dodo. Not beautiful but very droll. And very helpless. Come, I'll show you the re-creation itself."

In the great building, they passed between rows of tall and wide tanks. They could see clearly through the windows and the jelly within.

"Those are African elephant embryos," said the biologist. "We plan to grow a large herd and then release them on the new government preserve."

"You positively radiate," said the distinguished visitor. "You really love the animals, don't you?"

"I love all life."

"Tell me," said the visitor, "where do you get the data for re-creation?"

"Mostly, skeletons and skins from the ancient museums. Excavated books and films that we succeeded in restoring and then translating. Ah, see those huge eggs? The chicks of the giant moa are growing within them. These, almost ready to be taken from the tank, are tiger cubs. They'll be dangerous when grown but will be confined to the preserve."

The visitor stopped before the last of the tanks.

"Just one?" he said. "What is it?"

"Poor little thing," said the biologist, now sad. "It will be so alone. But I shall give it all the love I have."

"Is it dangerous?" said the visitor. "Worse than elephants, tigers and bears?"

"I had to get special permission to grow this one," said the biologist. His voice quavered.

The visitor stepped sharply back from the tank. He said, "Then it must be . . . but you wouldn't dare!"

The biologist nodded.

"Yes. It's a man."[1]

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APPENDIX B
Interview Protocol

a. What is reading?
b. Why do people read?
c. What does a person have to learn to be a good reader?
d. What is different about a person who is a good reader compared to someone who is not?

1. What do you think is different about the reading of a person who has learned English as a second language compared to someone whose first language is English?
2. Could knowing both Spanish and English help someone to be a better reader, or would it cause problems? Why?
3. Does being able to read in English help when you read Spanish? How?
4. Does being able to read Spanish help when you read English? How?
5. Have you ever learned how to do something to better understand your English reading that you later used when reading Spanish? What?
6. Have you ever learned how to do something to better understand your Spanish reading that you later used when reading English? What?
7. Do you ever translate from one of your languages to the other when reading English or Spanish? Describe it to me.
8. How is reading Spanish different from reading English? Vice versa?
9. What does a person need to know to be a good English reader?
10. What does a person need to know to be a good Spanish reader? Is there any difference? What is it?
11. How did you become a good reader? In Spanish? In English?

Notes

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[1]From *Mad Scientists* (pp. 8–11) by I. Asimov, M. H. Greenburg, and C. Waugh, 1982, Milwaukee: Raintree Steck-Vaughn. Copyright 1982 by Raintree Publications. Reprinted by permission.

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