Robert T. Jiménez

Georgia Earnest García

P. David Pearson

University of Illinois at Urbana-Champaign, USA

The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles

Only rarely has literacy research in the United States focused on communities that are not White, middle class, or native speakers of English. As a result, literacy researchers and practitioners cannot easily avail themselves of the fund of information on the values, beliefs, and knowledge of literacy held by groups labeled by the majority culture as *minorities.*

The net effect of our failure in the U.S. to attend to cultural aspects of literacy has been a tendency on our part to explain any achievement or performance discrepancies between Latina/o and Anglo students, for example on the National Assessment of Educational Progress, as attributable to cultural or congenital factors (García, Pearson, & Jiménez, 1994; Pallas, Natriello, & McDill, 1989). Partially in reaction to this negative tradition, in the current study, we have chosen to examine bilingualism as a potential strength, which might facilitate literacy development, rather than an inherent weakness.

For example, some researchers have examined background factors such as socioeconomic status, language background, and ethnicity in an attempt to account for differences in achievement levels (Ortiz, 1986; So & Chan, 1984; Steinberg, Blinde, & Chan, 1984). Describing the backgrounds of these children, however,

without simultaneously identifying and understanding their reading capabilities sheds insufficient light on the issue. Because bilingual Latina/o children have often experienced two cultures and two languages, they may differ from mainstream students in certain respects. For example, some evidence suggests that the knowledge sources they draw from and the strategies they use when confronted with printed text may be distinctive (Delgado-Gaitan, 1990; García, 1991; Langer, Bartolomé, Vásquez, & Lucas, 1990).

Investigating the reading knowledge and strategic processes of bilingual Latina/o students could help improve reading instruction and, at the same time, inform the construction of alternative models of proficient reading. This is especially true for research focused on the enabling rather than the disabling attributes of culturally distinct populations. Unfortunately, except for a few isolated examples (García, 1988; Padrón, Knight, & Waxman, 1986), very little research in reading has utilized this approach with students from culturally and linguistically diverse backgrounds. Much of the research on second-language literacy has confined itself to examination of adults or high-school students (Block, 1986; Casanave, 1988; Hosenfeld, 1978; Koda, 1988).

90

The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles

THIS RESEARCH examines the strategic reading processes of 8 bilingual Latina/o children who were identified as successful English readers. For comparative purposes, two smaller samples were included—3 monolingual Anglo students who were successful English readers and 3 bilingual Latina/o students who were less successful English readers. The major objective of this study was to explore the question of how bilingualism and biliteracy affect metacognition. Data were gathered using both unprompted and prompted think alouds, interviews, a measure of prior knowledge, and passage recalls. Preliminary analysis resulted in the identification of 22 distinct strategies organized into three broad groups (text-initiated, reader-initiated, and interactive). Three of the strategies were considered unique to the successful Latina/o readers: (a) they actively transferred information across languages, (b) they translated from one language to another but most often from Spanish to English, and (c) they openly accessed cognate vocabulary when they read, especially in their less dominant language. In addition, the successful Latina/o readers frequently encountered unknown vocabulary items whether reading English or Spanish text, but they were able to draw upon an array of strategic processes to determine the meanings of these words. The less successful Latina/o readers used fewer strategies and were often less effective in resolving comprehension difficulties in either language. They also frequently identified unknown vocabulary, but they differed substantially from the successful Latina/o readers in their ability to construct plausible interpretations of text. Because the successful Anglo readers rarely encountered unknown vocabulary and because they could access well-developed networks of relevant prior knowledge, they were able to devote substantial cognitive resources to the act of comprehension. These readers seldom indicated the need to overtly monitor their reading comprehension. The data suggest that Latina/o students who are successful English readers possess a qualitatively unique fund of strategic reading knowledge.

Las estrategias de lectura de estudiantes bilingües Latinas/os que son lectoras exitosas de inglés: Oportunidades y obstáculos

ESTA INVESTIGACION examina los procesos estratégicos de lectura de ocho niñas/os latinas/os que fueron identificadas como lectoras exitosas de inglés. Por razones comparativas, se incluyeron dos muestras más pequeñas—tres estudiantes angloamericanas/os que eran lectoras exitosas y tres estudiantes latinas/os que eran lectoras menos exitosas de inglés. El principal objetivo de este estudio fue explorar la cuestión acerca de cómo el bilingüismo y la alfabetización en dos lenguas afectan la metacognición. Los datos se recogieron usando ejercicios de pensar en voz alta dirigidos y no dirigidos, entrevistas, una medida de conocimiento previo y relatos de fragmentos. El análisis preliminar resultó en la identificacion de 22 estrategias diferentes organizadas en tres grandes grupos (iniciadas por el texto, iniciadas por el lector e interactivas). Tres de estas estrategias fueron consideradas exclusivas de las lectoras latinas exitosas: (a) transfirieron activamente información entre lenguas, (b) tradujeron de una lengua a otra, pero más frecuentemente del español al inglés y (c) accedieron abiertamente a vocablos relacionados en ambas lenguas mientras leían, especialmente en la lengua que dominaban menos. Adicionalmente, las lectoras latinas exitosas con frecuencia encontraron vocablos desconocidos, tanto cuando leían un texto en inglés, como cuando leían un texto en español, pero lograron recurrir a un conjunto de procesos estratégicos para determinar los significados de estas palabras. Las lectoras latinas menos exitosas usaron menor cantidad de estrategias y a menudo fueron menos eficaces para resolver dificultades de comprensión en ambas lenguas. Con frecuencia identificaron el vocabulario desconocido, pero difirieron sustancialmente de las lectoras latinas exitosas en su habilidad para construir interpretaciones plausibles del texto. Debido a que las lectoras exitosas angloamericanas rara vez encontraron vocabulario desconocido y lograron acceder a redes bien desarrolladas de conocimientos previos relevantes. pudieron asignar recursos cognitivos sustanciales al acto de compresión. Estas lectoras pocas veces señalaron la necesidad de monitorear la comprensión lectora. Los datos sugieren que las estudiantes latinas que son lectoras exitosas de inglés poseen una fuente de conocimiento estratégico para la lectura, único desde el punto de vista cualitativo.

Lesestrategien von zweisprachigen Latino/as mit Spanisch als Muttersprache, die erfolgreiche englischsprachige Leser/innen sind: Möglichkeiten und Schwierigkeiten

DIESE UNTERSUCHUNG erforschte die Lesestrategien von 8 Kindern mit Spanisch als Erstsprache, die als gute Leser in Englisch als Zweitsprache eingestuft werden können. Zum Vergleich wurden zwei kleinere Parallelgruppen geführt: Drei Schüler/innen mit Englisch als Muttersprache, die als gute Leser/innen zu bezeichnen sind, und drei zweisprachige spanisch sprechende Schüler/innen, die weniger gut englische Texte lesen können. Gegenstand der Untersuchung war die Frage, inwieweit Zweisprachigkeit und zweifache Literarisierung den Lernprozeß auf der Metaebene beeinflussen. Die Daten stammen sowohl von spontanen wie evozierten Schülermeldungen und von Befragungen, sie wurden nach dem Stand des Vorwissens erhoben und erfaßten die Wiedergabe von gelesenen Textabschnitten. Vorangehende Analysen erbrachten eine Bestandsaufnahme von 22 identifizierten Erfahrungen in den drei großen Bereichen der Textorientierung, der Leserorientierung sowie der Handlungsorientierung beim Lesen. Drei davon wurden als typisch für gute Leser identifiziert: (a) Diese waren fähig, Informationen aus der einen Sprache selbständig in die andere zu übertragen; (b) sie übersetzten meist von einer Sprache in die andere, vorzugsweise jedoch aus dem Spanischen ins Englische, und (c) sie eröffneten sich sprachliche Zugänge über stamm- und sinnverwandte Begriffe vor allem bei Texten in der weniger geläufigen Zweitsprache. Zudem setzten sich gute Leser häufig mit dem unbekannten Wortmaterial auseinander, gleichgültig ob es sich um einen englischen oder spanischen Text handelte, verfügten sie doch über eine Vielzahl von Lernerfahrungen, um die Bedeutung dieser fremden Wörter zu bestimmen. Die weniger guten Leser verfügten über weniger Lernstrategien und waren nicht so erfolgreich bei der Sinnerschließung von schwierigen Texten in beiden Sprachen. Sie konnten zwar ebenso oft unbekannte Begriffe benennen, aber sie unterschieden sich wesentlich von den guten Lesern in der geringeren Fähigkeit, eine sinngemäße Textinterpretation zu erstellen. Da gute englischsprachige Leser kaum mit unbekannten Wörtern konfrontiert wurden und da diese über ein gut entwickeltes Netzwerk von intuitiven und vorwissenschaftlichen Kenntnissen verfügten, konnten sie sich intensiver mit den substantiellen Gedanken bei der Sinnerfassung auseinandersetzen. Diese Leser/innen äußerten selten das Bedürfnis nach einer nochmaligen Überprüfung ihres Textverständnisses. Die Ergebnisse legen den Schluß nahe, daß jene Schüler/innen mit Spanisch als Muttersprache dann gute englischsprachige Leser/innen sind, wenn sie über qualitativ hochwertige Lesestrategien verfügen.

英語の読みが上手なラテン系のバイリンガル子女たちの リーディング・ストラテジー：機会と障害

　この研究では英語の読みが上手であると認められた８人のラテン系のバイリンガル子女たちがリーディングに対処する際のプロセスを調査した。比較対照のために、２組の小人数の被験者たちが使われた。被験者は英語の読みが上手な３人のアングロ系のモノリンガル子女たちと、英語の読みが上手でない３人のラテン系のバイリンガル子女たちであった。この研究の主な目的は、バイリンガリズム（二言語運用能力）とバイリテラシー（二言語読み書き能力）がメタ認知にどのように影響を与えるかという疑問を探求することであった。データは自発的に、或は外からの刺激を受けることによって考えを声に出す方法、インタビュー、既存知識の測定、そして文章の想起などを使って集められた。予備分析の結果から、２２のはっきりしたストラテジーが確認され、それらはテキスト主導型、読み手主導型、相互作用型という３つの大きなグループに分けられた。次の３つのストラテジーは、ラテン系の読みの上手な生徒たちに特有なものと思われた。それらは、(a) 言語を越えて情報を活発にやりとりした場合、(b) １つの言語からもう１つの言語へと － たいていの場合スペイン語から英語へであったが － 訳していた場合、そして (c)特に通常使っていない言語で読む場合、あからさまに同族の語彙を引用した場合である。さらに読みの上手なラテン系の生徒は、英語のテキストやスペイン語のテキストにかかわらず、よく未知語に遭遇したが、彼らは多くのストラテジーの方法を使って単語の意味を特定することができた。読みが上手でないラテン系の生徒はあまりストラテジーを使わず、どちらの言語においても理解の困難な箇所を効果的に解読することができなかった。彼らもまた、よく未知語に遭遇したが、基本的に読みの上手なラテン系生徒とはテキストをもっともらしく解釈できるという能力において異なっていた。読みの上手なアングロ系の生徒はめったに未知語に遭遇しないし、また十分に発達した既存知識のネットワークを上手に使うことができるため、読解作業をする際に内容ある知的情報を活用できたのである。こうした読み手は自分たちの読解を明確な形でチェックする必要性をめったに示さなかった。英語の読みが上手なラテン系の生徒たちは、リーディング・ストラテジーの知識を質的にユニークな形で蓄積し、また備えていることをこのデータは示唆している。

Les stratégies de lecture d'élèves latinos bilingues bons lecteurs en anglais: occasions et obstacles

CETTE RECHERCHE examine les processus de lecture de huit enfants latinos bilingues identifiés comme étant bons lecteurs en anglais. A des fins de comparaison, on a inclus deux échantillons plus limités—trois élèves anglos monolingues bons lecteurs en anglais et trois élèves bilingues latinos moins bons lecteurs en anglais. L'objectif principal de cette étude était d'explorer la question de comment le bilinguisme oral et écrit affecte la métacognition. Les données ont été recueillies par pensée à haute voix sur demande ou non, entretiens, mesure des connaissances antérieures, et rappel d'un passage. Une analyse préliminaire a permis d'identifier 22 stratégies distinctes organisées on trois groupes plus larges (induction par le texte, induction par le lecteur, et interaction). Trois de ces stratégies ont été considérées comme propres aux lecteurs latinos performants: a) le transfert actif d'informations d'une langue à l'autre, b) la traduction d'une langue à l'autre mais très souvent de l'espagnol à l'anglais, et c) l'accès ouvert pendant la lecture à un vocabulaire associé, particulièrement dans la langue non dominante. De plus, les lecteurs latinos performants ont rencontré fréquemment des termes inconnus, qu'ils aient lu un texte en anglais ou en espagnol, mais sont parvenu à trouver une stratégie pour déterminer la signification de ces mots. Les lecteurs latinos moins performants ont utilisé des stratégies moins nombreuses et ont été souvent moins efficaces pour résoudre des difficultés de compréhension dans une langue ou dans l'autre. Ils ont fréquemment aussi identifié un terme inconnu, mais différaient substantiellement des lecteurs latinos performants quand il s'agissait de construire les interprétations plausibles d'un texte. Du fait que les lecteurs anglos performants ont rarement rencontré un terme inconnu et parce qu'ils pouvaient accéder à des réseaux bien développés de connaisances antérieures pertinentes, ils étaient en mesure de consacrer des resources cognitives substantielles à l'acte de compréhension. Ces lecteurs ont rarement manifesté le besoin de présenter explicitement leur activité de compréhension de la lecture. Les données suggèrent que les élèves latinos bons lecteurs en anglais disposent en propre d'un fond qualitatif de connaissance en matière de stratégie de lecture.

We use the term *bilingualism* in its broad sense to refer to use of two languages on a regular basis. We are aware, though, that the terms *bilingual* and *bilingualism* can have various shades of meaning, nuance, and even technical descriptions (García et al., 1994). In the United States, it is common for members of the Latina/o community to be orally proficient in Spanish and English, hence their categorization as bilingual (Fishman, 1987; Perez & Torres-Guzman, 1992). While many patterns of oral and literate proficiency within the community can be identified, it is common for Latinas/os to learn English as a second language, and just as common for them *not* to receive formal instruction in Spanish literacy (August & García, 1988).

Becoming biliterate

Native-like literacy proficiency in second-language reading is often difficult to achieve (Weber, 1991). For example, middle-class Anglophone children in French immersion programs in Canada have demonstrated high levels of French literacy but not to the same degree as native French-speaking children (Lambert & Tucker, 1972). Other researchers working with socioeconomically privileged grade school through high school students learning English as a second language reported that the attainment of grade-level performance can take anywhere from 2 to 8 years, with 4 or 5 being the norm (Collier, 1987; Mägiste, 1979).

A variety of factors have been found to affect bilingual students' second-language literacy. For example, García (1991) found that Spanish-speaking intermediate grade students differed from their native-English speaking counterparts in the level and type of background knowledge they brought to text and in their interpretation and knowledge of English vocabulary. Bilingual adults who are highly proficient in both languages process text more slowly compared to monolingual adults (Favreau & Segalowitz, 1982; Mack, 1984). Interestingly, these slower reading times hold true for both their first and second languages.

When students use their dominant language to demonstrate comprehension of texts written in their second language, they produce more elaborate protocols (Goldman, Reyes, & Varnhagen, 1984; Lee, 1986a, 1986b; Moll, 1988; Moll, Estrada, Díaz, & Lopes, 1980). Lee, for example, demonstrated that university-level students enrolled in Spanish foreign language courses were able to express more complete understanding of Spanish language texts when they were permitted to write in English rather than Spanish. Goldman et al. (1984) found similar effects for native-Spanish-speaking children reading English fables.

Moll and his colleagues (Moll, 1988; Moll et al., 1980) also reported that the use of students' primary or stronger language to discuss text written in English reveals a more complete picture of students' reading comprehension. They organized a learning situation so that Mexican American students learning English could discuss their English reading in Spanish. The students were capable of discussing much more sophisticated English text, and they also demonstrated the ability to comprehend at a higher level. In other words, their receptive language competency (ability to comprehend oral and printed language) surpassed their productive language competency (ability to express themselves orally or in writing in their second language).

The metacognitive knowledge of second-language learners

The study of metacognition—what readers know about themselves, the task of reading, and various reading strategies—has proven to be a fruitful area of investigation. For example, from research focused on mainstream monolingual English speakers, we know that older and more successful readers know more about themselves as learners, that they approach different genres in distinct ways, and that they use more reading strategies (Baker & Brown, 1984; Garner, 1987; Paris, Wasik, & Turner, 1991).

While the research on metacognitive development of bilingual readers is in infancy, the few studies that have been completed raise intriguing questions for the field. Some theorists have even speculated that bilingualism may actually enhance children's capacity for conscious introspection. Hosenfeld (1978), for example, suggests that second-language learning is unique and may bring about greater awareness of cognitive processes. Vygotsky (1962) viewed learning a foreign language as "conscious and deliberate from the start" (p. 109). He raised the possibility that cognitive differences may exist between bilingual and monolingual children in their awareness of language and its functions. Some research seems to support his hypothesis. Ianco-Worrall (1972) found that 4- to 5-year-old bilingual children in South Africa understood to a greater extent than comparable monolingual children that language is arbitrary; that is, a concept can have more than one label.

Some potentially useful strategies for successful second-language learning and successful second-language literacy acquisition have been identified by various researchers. Miramontes and Commins (1989) speculated that effective transfer of strategies from one language to another may depend upon a certain level of metacognitive awareness. Carrell's (1989) findings suggested that what second-language readers know about

reading affects their reading behavior. For example, in a comparative study of the bilingual reading (Spanish-English) of native-language Spanish speakers and native-language English speakers, Carrell found that only the better native-language readers demonstrated cognitive flexibility in their second-language reading. In essence, the better readers adjusted their reading strategies depending on the language of the text and their perceived proficiency in that language.

Langer and her associates (1990) concluded that use of good *meaning-making strategies* was more influential than either first- or second-language proficiency for explaining the reading competency of bilingual children. They also concluded that these students used knowledge of Spanish as support when they encountered difficulty reading English. Children who tended to be good readers in either of the two langauges also tended to be good readers in their other language. They attributed this phenomenon to the transfer of good comprehension strategies across languages.

Research perspective and framework

Our research is grounded in the premise that the Latina/o community itself is capable of supplying valuable information concerning literacy beliefs and practices. Instead of regarding Latina/o culture as problematic or at odds with the efforts of school personnel, it is our contention that much can be learned by carefully eliciting and examining the literacy knowledge and practices of Latina/o students identified as successful English readers.

The focus is on the metacognitive knowledge and strategies of bilingual Latina/o children in the upper elementary grades who are successful English readers. While not all children who are second-language speakers of English are Latina/o, the Latina/o community is significant because of its size and its history within the United States. 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 or Latina/o. Waggoner (1991) pointed out that the percentage of Latina/o students who do not complete their high school education is growing, even as students from other minority communities narrow the gap with students from the majority culture.

The present study is part of a line of research designed to contribute to the current knowledge base regarding reading instruction for bilingual Latina/o children by exploring the question of how Spanish/English bilingualism and biliteracy affect, and even enhance, metacognition. The study was designed to maximize the potential insights that we could gather about this phenomenon. It was not intended to provide any sort of

normative account of the incidence of metacognitive behaviors among bilingual children across languages or textual experiences. In a complementary effort, we presented a detailed case study of a successful bilingual reader (Jiménez, García, & Pearson, 1995). The focus was on understanding the unique approach one reader used to create and monitor meaning across languages. The focus in the current work is on building a broader and more general typology and explanation of bilingual reading strategies.

The following questions provide a more precise statement of the research problem:

- What do successful Latina/o readers know about reading?
- What strategies do successful Latina/o readers use while reading?
- Do successful Latina/o readers use the same strategies in both languages?
- Do metacognitive strategies exist that facilitate transfer of strategy knowledge?
- To what extent do the cognitive and metacognitive strategies of successful Latina/o readers differ from those of successful Anglo readers?
- To what extent do the cognitive and metacognitive strategies of successful Latina/o readers differ from those of less successful Latina/o readers?

Method

Participants

Fourteen sixth- and seventh-grade students from three schools in two school districts participated. There were 8 Latina/o students who were successful English readers, 3 Latina/o students who were marginally successful English readers, and 3 monolingual Anglo students who were successful English readers. School District 1 is of medium size (5,824 students) and District 2 is smaller (1,237 students). Approximately 28% of the student body in each of the District 1 schools were Latina/o, while 13% were Latina/o in the District 2 school.

Table 1 contains a summary of student background characteristics. Participating students are referred to by pseudonyms. To illustrate the use of data in Table 1, consider the case of Samuel. He was 12 years old at the time of this study and in sixth grade. He stated that depending on the needs of the situation, he would speak either Spanish or English. He was born in Mexico and spent the first 2 years of his life there but completed all of his schooling in the United States. Like many students with access to bilingual education programs, Samuel made the transition into general education when he began third grade.

Table 1   Student background information

Student	Age	Grade level	Preferred language	Birthplace	Number of years in U.S.	U.S. schooling grade levels	Bilingual schooling
Successful Latina/o readers							
Pamela	12	6	English	Mexico	5	1-6	1, 2
Betty	11	6	Either	U.S.	11	K-6	0
Kathy	11	6	English	U.S.	11	K-6	0
Samuel	12	6	Either	Mexico	10	K-6	K-2
Lisa	11	6	English	Mexico	10.5	K-6	K-2
Alberto	13	7	English	Mexico	10	K-7	0
Marcos	12	6	English	Guatemala	3.75	3-6	K, 1 (in Guatemala)
Gilda	13	7	English	Guatemala	5	2-7	2-5
Less successful Latina/o readers							
Catalina	12	6	English	U.S.	12	K-6	K-4
Michael	12	6	Either	Mexico	5	2-6	2-3
Celina	11	6	English	U.S.	11	K-6	K-4
Successful Anglo readers							
Michelle	12	6	English	U.S.	12	K-6	N/A
Tricia	12	6	English	U.S.	12	K-6	N/A
Bruce	12	6	English	U.S.	12	K-6	N/A

Selection of student participants was based on four criteria: (a) students' ranking as readers of English (e.g., successful or marginally successful); (b) ability to think aloud while simultaneously reading silently; (c) for the Latina/o students, fluent oral language proficiency in Spanish and English; and (d) capability and willingness to read in Spanish. All of the Latina/o students were orally bilingual and biliterate, albeit to varied degrees. Consistent with Goetz and LeCompte's (1984) advocacy of criterion-based participant selection, students' selection and ranking was primarily based on teacher, principal, and bilingual program director's judgement. These educators were asked to indicate which students were succeeding and not succeeding in the school program.

The teachers' categorization of students as successful and less successful English readers was corroborated by examining their reading comprehension performance on a standardized reading test in English. Test scores were available for 5 of the 6 sixth-grade successful Latina/o readers (Science Research Associates, M = 70.4 percentile), and for the 2 seventh-grade successful Latina/o readers (California Test of Basic Skills, Grade 7, 1989, M = 85.5 percentile). For the 3 less successful Latina/o readers, standardized reading scores in English were also available (SRA, M = 53.3 percentile), and for the 3 successful monolingual readers (SRA, M = 87.3 percentile).

No test scores were available for the students' Spanish reading abilities. Spanish reading ability initially was judged on the basis of student self-reporting and corroborated prior to data collection by asking the students to read orally and discuss a Spanish-language text at the fourth-grade level. All of the Latina/o students included in the study were capable of reading the Spanish

text. Some students recommended by their teachers for inclusion in the study could not be included because of an inability or unwillingness to read in Spanish.

Materials

Reading passages

All of the texts chosen for use during the unprompted and prompted think-aloud data collection sessions were chosen from instructional materials used in schools (e.g., textbook selections, encyclopedias, trade books). They were selected because they were short (171 to 503 words), interesting, and, based on pilot testing, created opportunities for evoking cognitive and metacognitive strategies (see Appendix A for sample text, "The King of the Beasts." In all, the Latina/o students read seven texts, and the Anglo students read 3 texts. All of the texts are described in more detail in the section titled Think-Aloud Assessment.

The encyclopedia was a good source for finding expository passages that met these criteria—short, interesting, and evocative. Pilot testing revealed that participants were reluctant to engage in the think-aloud procedure if they believed that too great an investment in time was required. These texts followed a listing of information organization common in much expository writing (Armbruster & Anderson, 1985).

Prior knowledge assessment

For each of the seven passages, an accompanying prior knowledge task was developed based on techniques developed by the Illinois State Board of Education (Pearson & Greer, 1992; Pearson & Valencia, 1986). These tasks included an introductory statement briefly describing the topic of the text and its genre. The types of information elicited differed according to the text genre: expository or narrative. For example, the measures developed for each of the expository passages asked students to write up to 10 different things about the topic.

Four or five key vocabulary terms chosen from each of the texts also were included for definition. The words *flea, parasite, insect,* and *disease* were the items chosen from the passage "Flea." The prior knowledge scores were designed to provide us with an understanding of what students already knew about the texts, topics, and genre before reading them. This analysis helped us to anticipate where students might have difficulty with vocabulary and inferencing, as well as evaluate what they had learned from the text.

The narrative prior knowledge measures included some information about each passage's main character and that person's role 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. Students were asked to predict as much as possible about what might happen. The participants were provided with the following instructions:

> You are going to read a short story about a scientist who works with different kinds of animals. This is a science fiction story that you would probably find in a book about science fiction. Before you read the story, please write up to 10 things that you think the scientist might do.

Students were also asked to define four or five key vocabulary items such as *sobretodo* (overcoat) and *casa de empeños* (pawn shop) because of their centrality for comprehending the Spanish narrative text, and because little contextual support was available for determining their meaning (Nagy, 1988).

Background questionnaire

Student participants completed a self-reporting background questionnaire designed to elicit general information such as age, birthplace, and ethnic affiliation—whether Mexican, Central American, Caribbean, or South American. Students were asked to provide information about their language learning histories, about their educational histories, and whether they had been enrolled in a bilingual education program. Finally, a grid was included for students to rate themselves in both English and Spanish on a scale of 1–5 for the areas of reading, listening, speaking, writing, and translating.

Think-aloud assessment

The think-aloud procedure was chosen because when successfully used it provides a means for viewing otherwise invisible cognitive processes (Ericsson & Simon, 1984). Students were given prior exposure to the think-aloud procedure because other researchers reported that it can be difficult for intermediate students to verbalize their thoughts while reading silently (Langer et al., 1990). To offset this problem, several researchers recommend that students be given practice in the think-aloud procedure prior to using it for data collection (Garner, 1987; Hartman, 1995; Olson, Duffy, & Mack, 1984). Ericsson and Simon (1980, 1984) reported that cognitive processes are not substantially altered by the think-aloud procedure.

Unprompted think alouds. Three Spanish texts and two English texts were used for unprompted think alouds (no prearranged prompts were written for these materials). The goal of this think-aloud procedure was to elicit as natural an account of student thinking as possible. Students were encouraged to verbalize their thinking with the words, "tell me what you are thinking about," whenever they visibly paused in their reading and fell

silent for an extended period of time.

The Spanish texts included two short humorous narrative passages and one expository passage. Because the Spanish narrative texts were short, two were used instead of one, to assure that sufficient opportunities for student verbalization were present. The narrative texts were taken from an anthology of readings, *Cuentos y Más Cuentos*, compiled by John Pittaro (1964). The Spanish expository passage was taken from the sixth-grade science book, *Enfasis en la Ciencia* (Sund, Adams, Hackett, & Moyer, 1985).

The English narrative text was taken from the book, *Mad Scientists*, (Asimov, Greenburg, & Waugh, 1982). The English expository passage was found in the *Children's Britannica* (1988).

Prompted think alouds. Materials for the two prompted think alouds consisted of two different expository passages, one in English and one in Spanish. The Spanish passage was found in *Enfasis en la Ciencia* (Sund et al., 1985). The English text was taken from *The World Book Encyclopedia* (1988). We decided to add this procedure because of a concern raised during pilot testing that sufficient student verbalization might be difficult to achieve. In other words, we wished to provide students with many opportunities to describe their thinking.

Questions and prompts in the prompted think alouds were aimed at eliciting students' introspective knowledge of metacognitive strategies for dealing with informational text. Approximately 17 different places in each of the prompted texts were marked with an asterisk. Asterisk placement was based on a qualitative analysis of where the children were most likely to engage in strategic processing while reading. This analysis followed procedures recommended by Roeber, Kirby, Dutcher, and Smith (1987). In addition, based on second-language research (García, 1991; Saville-Troike, 1984), several vocabulary items were chosen for asterisk placement. The following excerpt provides an example of the sort of prompts and questions used:

> Octopus is a marine animal with a soft body and eight arms, also called tentacles.*(What do you think about this?) The word *octopus* *(What do you think?) comes from two Greek words that mean eight feet.*(How did you decide what is important to remember in this sentence? Do you have any questions that you would like to find answered in the article?)

Text retellings

All of the texts, narrative and expository, were analyzed following procedures described by Roeber et al. (1987) to determine their constituent parts. The narrative texts were outlined using a story mapping procedure to identify the major themes, the plot, the setting, and to determine the traits and functions of major characters. Also, a list of significant events in each story was drawn up. The expository texts were diagrammed hierarchically so that central ideas were placed highest, followed by important ideas, and finally supporting details. The text analyses were used to rate the coherence and completeness of the passage retellings dictated by the student participants. Although we initially rated the text retellings for their coherence and completeness, we only used the retellings to provide us with a global measure of student comprehension of each of the passages. The retellings allowed us to double check comprehension problems that surfaced during the think alouds.

Interview protocol

The interview protocol consisted of 15 questions (see Appendix B for the complete interview protocol). The first 4 were adapted from McNeil (1987). These questions dealt with very general aspects of reading. The next 11 questions were directed toward bilingual students and were developed on the basis of what prior research had indicated might influence the English reading of bilingual students (Carrell, 1989; Miramontes & Commins, 1989; Padrón et. al., 1986; Pritchard, 1990; Rubin, 1975). They were also formulated and revised on the basis of pilot testing with bilingual adults and children. The monolingual Anglo students were only asked the first 4 questions. The interviews gave us information on how all the students viewed the task of reading. In addition, the Latina/o students discussed what they knew about reading in their two languages.

Procedure

Data collection

There were two stages to the data collection. The first stage consisted of two group meetings in each school (three schools) where all of the Latina/o student participants met with the primary investigator. During these two group meetings conducted entirely in Spanish, students heard the purpose of the project, filled out background questionnaires, and completed measures of prior knowledge. In the second group meeting 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 Anglo students met separately as a group and followed

the same procedure used with the Latina/o students except that the sessions were conducted in English. These sessions were approximately 50 to 60 minutes in length.

The second stage of data collection consisted of three individual student sessions with each of the Latina/o students. Students read the Spanish and English texts and thought aloud following procedures they had seen in the video. They were encouraged to describe all of their thinking as they silently read the texts. They were also encouraged to use whatever language they felt most comfortable using. They were prompted during the think alouds by the following: "What are you thinking about?" and "Tell me as much as you can about what you are thinking." At the end of each think aloud, students were asked to silently reread the text and then retell it. The Anglo students also followed this procedure except that they only read the English texts. These sessions were also between 50 and 60 minutes in length. They were tape-recorded for later analysis.

Although it was originally planned to interview each student after the completion of all the think alouds, this was not always possible because of scheduling difficulties. For two students, this resulted in their being interviewed before their last think aloud. During the interview the bilingual students were encouraged to use whatever language felt most comfortable to them. The Anglo students were, of course, interviewed in English. The data collection procedures resulted in approximately 220 minutes of data per Latina/o student and 120 minutes per Anglo student of interview, recall, and think-aloud data.

Data analysis

Think-aloud data. An initial framework for analyzing the think-aloud data was developed by the three researchers who read and reread the transcripts using the constant-comparative method to identify the strategies and code the examples (Glaser & Strauss, 1967). In the process of constructing this framework, we looked for commonalities as well as counterexamples. Consensus was the governing principle during this phase of the work. Strategic reading processes were defined as any overt purposeful effort or activity used on the part of the reader to make sense of the printed material with which he or she was interacting. Pearson, Roehler, Dole, & Duffy (1992) described 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, but students did not have to explicitly identify or define them.

Saville-Troike (1982) adapted Hymes's (1972a, 1972b) classificatory scheme for research focused on language. In this study, we adapted Saville-Troike's concept of the communicative event for looking at reading strategies. Saville-Troike defined the communicative event as a unit of language that includes a specific set of characteristics: (a) the same general topic, (b) the same participants, (c) the same language variety, (d) the same rules for language use, and (e) the same setting. The components of communicative events that are most germane to the study of strategies are those of purpose or function and topic. We delineated strategy boundaries on the basis of Saville-Troike's description of a communicative event.

Analysis of the student-generated protocols resulted in the identification of 22 different strategies, as delineated in Table 2. Ten strategies were particularly amenable to qualitative analysis because of the amount of verbalization that accompanied their use. A description and example of each of these 10 strategies can be found in Appendix C. Categorizing the strategies was not mutually exclusive. When the children's thinking demonstrated characteristics reflective of more than one category, multiple codes were used as shown in the example below:

Portion of text read by participant

During the Middle Ages millions of people died in outbreaks of bubonic plague, and it is now known that this terrible disease was carried into houses by rats, whose fleas bit people and gave them the bubonic germs. (See Black Death.)

Participant response

...y es la gente que se muere porque muchas ratas muerden, o sea muerden la comida de uno y allí se la come uno a veces y se muere uno porque tiene una infección la rata pero esa infección de la rata se la dió la flea porque como la flea tiene pelos o sea la rata tiene pelos.

(...and it is the people that die because many rats bite, or rather they bite the food that one eats and one eats it there and he/she dies because the rat is infected but the rat was infected by the flea because the flea has hairs or rather the rat has hairs)

Codes assigned to transcript

Inferencing, translating, paraphrasing

All of the reading strategies were examined within an overlapping framework. The three designations, text-initiated, interactive, and reader-initiated strategies, served as a useful device for early data analysis and categorization. Categorizing the 22 strategies into one of these three groups also facilitated conceptualization of how the strategies related to one another and the various purposes they served.

Table 2   Classification of reading strategies used

Text-initiated strategies	Interactive strategies	Reader-initiated strategies
Using text structure	Inferencing	Invoking prior knowledge
Focusing on vocabulary	Questioning	Monitoring
Summarizing	Predicting	Visualizing
Restating the text	Confirming/disconfirming	Evaluating
Paraphrasing		Noticing novelty
Using context		Demonstrating awareness
Rereading		Bilingual strategies*
Decoding		Searching for cognates
		Translating
		Code-switching
		Transferring

*Used only by the bilingual readers

Interview data. The interview data was coded and analyzed by using the constant-comparative method (Glaser & Strauss, 1967). Patterns that characterized the students' metacognitive knowledge of self, task, and strategy (Baker & Brown, 1984) were identified. Findings from the think-aloud protocols and interview data were combined for each student.

Prior knowledge and passage recall data. Data from the prior knowledge measures and passage recall protocols were used to triangulate the findings (i.e., further understand the students' identification and use of reading strategies and passage comprehension). Although student performance on the prior knowledge measures was scored and compared in order to see how familiar the students were with the reading topics and genres, information elicited on the prior knowledge measures (e.g., did the student correctly identify a key vocabulary word?) primarily was used to document the influence of prior knowledge on students' reading as revealed in the think-aloud transcripts. The passage recall protocols were scored according to the system designed by Valencia and Greer (1986). However, the protocols principally were used to understand the extent to which the students comprehended the passages.

Combining the findings. Once each individual student's strategy use and reading comprehension were characterized, patterns of reading performance were identified for each of the three groups of readers. The three groups were compared to discover how they differed and resembled one another. Considered especially important were qualities that could be inferred from the students' statements and strategic processing that characterized them as readers.

Results and discussion

The discussion of the findings is organized by the research questions posed for this study. We adopted an integrated, thematic approach for presenting the findings of this research. In essence, each of the patterns uncovered during analysis is presented and illustrated with examples.

What do successful Latina/o readers know about reading?

Unitary view of reading

During the interviews five of the eight successful Latina/o readers indicated that Spanish and English reading were essentially the same activity. They expressed a unitary view of reading. In other words, as Marcos, Lisa, and Alberto indicate, they viewed learning to read in another language as simply learning a new set of vocabulary and, perhaps, mastering another phonological system. Their perspectives are exemplified below:

Marcos: When I learned to read in English I just needed to know the pronunciation and the spelling of the words. Because I could read in Spanish and English. [I] Just needed to know how to say the words.

Lisa: [E]verything's the same what you have to know [to read in English and Spanish].

Alberto: There aren't really any differences [between reading in English and Spanish], I mean they're both based on the same thing, how you understand it, how you read it, how you take it, and how you evaluate it and all that.

Knowledge of bilingual strategies

All eight of the successful Latina/o readers indicated during either the interviews or the think alouds that they knew about the strategy searching for cognates. Cognates are words that are related across languages because of common ties to an ancestral language. Cognates in Spanish and English are often similar in spelling and meaning. For example, Gilda demonstrated that she knew the value of English-Spanish cognate relationships:

Gilda: Yo sé que hay unas palabras que se parecen pero no sé que quiere decir *Proportional*, hmm. Estoy buscando que quiere decir, no sé. (I know that there are some words that look alike but I don't know what Proportional means. *Proportional*, hmm. I'm looking for what it means, I don't know.)

Other comments made by the successful Latina/o readers also demonstrated their understanding of this strategy:

Samuel: No, porque no hay ni una palabra en inglés que se parezca a esta palabra. (No, because there isn't even one word in English that looks like this word.)

Kathy: [A]quí hay una palabra que no sé...en español pero es *disintegrate* in inglés. ([H]ere is a word that I don't know in Spanish but it is *disintegrate* in English.)

Four successful Latina/o readers described translating as a strategic activity. Two students said that they would substitute words from their other language when they encountered unknown vocabulary. Another mentioned that he could better recall information if he translated English text into Spanish. Gilda said she translated when reading in her weaker language. She felt, however, that translating could be costly in terms of time and effort, and should be used cautiously so as not to interfere with comprehension. She discussed the difficulty that translating caused her when trying to remember material during a passage recall:

Gilda: I get confused (translating for a sentence or paragraph).

Investigator: So you just do it [translate] for a word?

Gilda: Yea, just a word. When I was little when I just came here I would try to translate and that's, I would always translate to see if I understood it, and then I would know what the words meant.

The use of searching for cognates and translating as beneficial reading strategies have not been widely discussed in the second-language reading literature. Successful Latina/o readers are capable of describing these strategies, and they know how to use them. Paris, Lipson, & Wixson (1983) called this declarative and procedural knowledge.

What strategies do successful Latina/o readers use while reading?

Resolving unknown vocabulary

The successful Latina/o readers focused considerably more attention on unknown vocabulary than did the successful monolingual readers. This activity did not, however, radically interfere with their overall comprehension (as indicated by the passage recalls). Their determination to resolve problems often resulted in accurate identifications of unknown vocabulary. The successful Latina/o readers used a variety of techniques to construct working definitions of unknown vocabulary such as using context, invoking relevant prior knowledge, questioning, inferencing, searching for cognates, and translating.

To construct an interpretation of the word *wantonly* while reading the English narrative text, Gilda first monitored her reading, then she used context and inferencing strategies to arrive at an interpretation. "Want, wan tan ly. What is that?" Her comment, "Well I don't know the meaning of a word," demonstrated her interest in this vocabulary item. Her determination led her to specify the item's grammatical function: "[T]hey're talking about a kind of way they were killed." Gilda resolved the situation to her satisfaction by reading ahead:

Gilda: [B]ecause the next sentence, it says that, ... I'm trying as it were to make... Oh! OK, so he wants to do this because people, he thinks people were like really mean and stupid and everything, now I know.

Pamela relied on her prior knowledge about extinct animals to help her define the term *extinct*:

Pamela: *[E]xtinct* no quiere decir (doesn't that mean) like when they're almost gone? Like the African elephant, I think there aren't any more.

Samuel attempted to understand the Spanish word *sobretodo* (overcoat) while reading the Spanish narrative text by relying on logic and context. He first indicated that the word was problematic:

Samuel: Pués esto de *sobretodo*, no sé que ha de ser. (Well this about *sobretodo*, I don't know what it would be.)

Investigator: ¿Y qué piensas? (And what do you think?)

Then he observed that the textual clues were not very informative:

Samuel: Pués las pistas que ponen no muy bien dicen porque es bastante viejo, de muy buena clase, muy limpio y muy remendado. (Well the clues that they give do not say much because it's pretty old, of a very good type, very clean and well mended.)

Investigator: ¿Entonces? (So then?)

Samuel: Pués hay muchas cosas que es viejo, buena clase, remend...(Well there are a lot of things that is old, good type, mend...)

He then attempted to define the word but admitted that he was unsure about what it meant:

> Samuel: ¿Será como, no sé si un bastón o algo? No sé la verdad porque es *sobretodo*.... No creo que sea un diamante o algo. No, la verdad no sé. (It might be like, I don't know if it's a cane or something? In truth I don't know because it's *sobretodo*.... I don't think that it would be a diamond or something. In truth I don't know.)

Finally, after reading the sentence, "Pero, este abrigo vale lo menos 10—añadió Alfonso," (But this coat is worth at least 10—added Alfonso), Samuel made the critical inference that a *sobretodo* is also an *abrigo* (using context, inferencing):

> Samuel: Oh, acá dice es un abrigo el *sobretodo*. (Oh, here it says a coat is a *sobretodo*.)

Monitoring comprehension

The successful Latina/o readers carefully monitored their comprehension by identifying comprehension obstacles. Alberto, for example, indicated he was monitoring his comprehension after he read the following sentence, "These, almost ready to be taken from the tank, are tiger cubs." He commented, "[T]his sentence doesn't make sense." He reread the sentence aloud and then added the following comment which also reflected use of the strategies rereading and demonstrating awareness:

> Alberto: Oh! OK, ... I sometimes read the sentence out loud, then it makes more sense than when I read it to myself.

Samuel demonstrated how important comprehension monitoring can be to a reader trying to capture the gist of a story:

> Samuel: So maybe I was wrong. I finished but I really didn't get what was happening.... I'm checking something I said wrong.

It was Samuel's monitoring that triggered further action, and his willingness to rethink his assumptions facilitated his drawing of the following inference:

> Samuel: Ya tiene más sentido este cuento. A lo mejor estos extraterrestres es el biólogo que...hace más gente y todo eso...(This story makes more sense now. Maybe these aliens is [are] the biologist that...makes more people and all of that.)

Kathy was clearly monitoring when she noted the lack of information in the English narrative text regarding the identity of a creature, "[A]nd then he says just

one..., what is it? ...they're not saying what it is." Kathy did not abandon her concern, which she mentioned four different times, before she read the sentence "Yes. It's a man." At that point she accepted the textual information, but she stated how it clashed with her understanding and expectations:

> Kathy: [T]hat was surprising because I thought it was some kind of dangerous animal cuz the visitor asked, is it dangerous?

Connecting prior knowledge with text

Integrating prior knowledge with textual information is crucial for comprehending text (Anderson & Pearson, 1984). The successful Latina/o readers showed how important this strategy was by making explicit their prior knowledge of relevant topics. Lisa's response while reading a Spanish expository text that discussed uses of solar energy exemplified successful integration of relevant prior knowledge with textual information:

> Lisa: Y en Chicago me acordé que ví en las noticias que hay un laundermat, una lavandería, donde ellos no meten dinero, la energía lo obtienen del sol. (And in Chicago I remember that I saw on the news that there is a laundermat, where they don't insert money. They get the energy from the sun.)

Kathy read the sentence, "The flat shape of the flea allows it to move forward very quickly among the hairs or feathers of the animal on which it lives," from the English expository text, "Flea,"and then supplied the following relevant prior knowledge: "Probably like a dog or a cat...maybe even a bird because my bird had fleas and it died."

While reading the "Octopus" passage describing how the animal can regenerate missing tentacles Betty accessed relevant prior knowledge:

> Betty: I learned in fifth grade something [about] worms. I don't remember if they cut off their head if they would grow two heads.

Then when Betty read about the siphon of the octopus, she made an analogy to something she thought was similar: "[S]iphon, it's a funnel shaped opening under the head, maybe it's like a whale how it squirts out water."

Making inferences and drawing conclusions

The successful Latina/o readers made large numbers of inferences while reading both Spanish and English text. In fact, making inferences was the predominant activity in which they engaged whether reading Spanish or English. They often qualified their inferences

with "maybe" or "probably" signifying a willingness to revise their thoughts, and they explicitly confirmed or disconfirmed them. They also focused their attention on higher-level elements of the text when making inferences. For example, Betty compared her very specific and correct inference that the creature in the story, The King of the Beasts, was a baby, with statements made by the main characters and indicated how such a conclusion clashed with her prior knowledge:

> Betty: It was a baby maybe. [T]hat's why he said he was giving it all the love [he could] and he said it was dangerous. So I don't know why they would say it was dangerous if it was just a baby.

Alberto inferred an important outcome of the story, "The King of the Beasts," but indicated that he was willing to wait until the end of the story to confirm his prediction:

> Alberto: [T]here might be a chance that I finish the story and...all human beings might be extinct for all the pollution and stuff.

Gilda inferred important information for understanding the humor in the Spanish narrative, "Como Estos Hay Pocos":

> Gilda: Oh! ¡Ya sé que va a hacer él! Que el abrigo no es de él, es del señor. (Oh! Now I know what he's going to do! So the coat is not his, it belongs to the man.)

When retelling this story, Gilda provided a glimpse of how she implemented the strategy of inferencing to draw conclusions. She also created a summary statement of the gist of the story:

> Gilda: Entonces él se llevó un abrigo por menos dinero porque era listo. [É]l burló al señor. (So then he took a coat for less money because he was smart. [H]e tricked the man.)

Asking questions while reading

The successful Latina/o readers exploited the strategy of questioning to aid comprehension only occasionally; in fact they used this strategy less frequently than either the less successful Latino readers or the successful Anglo readers. Even so, on the few occasions they did use it, their questions were quite pertinent. The following series of questions asked by Gilda as she read "The King of the Beasts" focused on a key element of the story:

> Gilda: Well, why are they making a man, aren't they people? They're biologists aren't they? Why would they be scared if it was a man?

In fact, Gilda's questions allowed her to determine that "they" were not human beings. The main characters in this story were extraterrestrials but this information was not explicitly stated.

Kathy also attempted to determine the identity of the unknown creature featured in the English narrative text by asking a question:

> Kathy: [F]irst the biologist says, "Poor little thing it's so alone but I'll give it love," and then the visitor asks, "Is it dangerous?" But what are they talking about? I don't know what they're talking about.

Marcos asked a question while reading the Spanish narrative text that helped him understand the problem faced by the protagonist:

> Marcos: Él está trabajando mientras que todos están con abrigos, y dice que va a buscar una tienda, un abrigo. ¿Pero cómo lo va a hacer así con el frío que había, sin abrigo él? (He is working while everyone else has on coats, and it says that he is going to look for a store, a coat. But how is he going to do it when it is so cold outside, without a coat?

Do successful Latina/o readers use the same strategies in both languages?

The successful Latina/o readers made somewhat less use of the strategy invoking prior knowledge while reading Spanish than while reading English. Given their greater monitoring of Spanish text and the poorer quality of their Spanish passage recalls, it seems that reading in Spanish was a more difficult task for them. This finding is consonant with their lack of opportunities to read content-area material in Spanish.

The successful Latina/o readers also monitored their comprehension of Spanish text more frequently than they did while reading English text. Much of their monitoring involved identification of unknown vocabulary. It appears that the successful Latina/o readers adjusted their approach depending on the perceived difficulty of the task, specifically the language of the text.

The successful Latina/o readers made use of two strategies, translating and searching for cognates, that reflect their status as second-language learners. All but a few instances of their use of these strategies were limited to their reading of Spanish text, their weaker language.

The following examples of the searching for cognates strategy demonstrate the process followed by the successful Latina/o readers and provide a general impression of how this strategy enhanced their comprehension:

Alberto: *Cantidades*, eso quiere decir muchas o como en inglés...*quantities*. (*Cantidades*, that means a lot or like in English...*quantities*.)

Gilda: ¿Energía térmica? (Thermal energy?)

Investigator: ¿Y qué piensas? (And what are you thinking?)

Gilda: Thermal energy

The successful Latina/o readers used the strategy of translating almost exclusively while reading in Spanish. Translating occurred most frequently when the students came across unknown vocabulary. Their cognitive activity was occasionally more transparent when they attempted to translate polysemous vocabulary. Betty, for example, translated the word *Tierra* as dirt instead of *Earth*, and *estado* as state rather than *stage*. In both cases, she did not pay attention to the context of the passage.

Translating helped students with comprehension when they were willing to tentatively assign meaning across languages. Lisa's use of translating was successful and illustrative of how bilingual Latina/o students can use this strategy:

Lisa: ...y se forma un *agujero negro* y esas dos palabras se oyen como black hole, ...porque *agujero* it's like hole and *negro* is black and it has to be black hole. (...and it forms an *agujero negro* and those two words sound like black hole,...because *agujero* it's like hole and *negro* is black...)

Both groups of Latina/o students experienced more difficulty recalling the Spanish expository texts than any of the English texts or the Spanish narrative texts. Four of the more successful Latina/o students explained this difficulty as the result of a lack of experience and instruction in Spanish reading. With the exception of one student, none of the successful Latina/o readers had participated in a program of bilingual education beyond the second grade (see Table 1). The successful Latina/o reader who had been enrolled in a bilingual program through the fifth grade also had a difficult time reading the expository Spanish text. No such difficulties were noted in their recall of Spanish narrative text, which may indicate that the topics of the Spanish expository texts were less well known but this was not reflected in their prior knowledge scores.

Do metacognitive strategies exist that facilitate transfer of strategy knowledge?

Several of the successful Latina/o readers mentioned specific strategies that could be transferred from one language to another. Strategies they named were

questioning, rereading, evaluating, and the notion that reading must make sense regardless of language, in other words, monitoring. One student also stated that reading in her weaker language, Spanish, was simply a matter of matching her Spanish oral proficiency with English reading ability.

Three of the successful Latina/o readers explicitly transferred information learned in their other language as they thought aloud. That the successful Latina/o readers were aware of the transference of knowledge across languages can be inferred from comments such as that made by Lisa, "It's familiar to me porque en inglés nos enseñan todo esto" (It's familiar to me because in English they teach us all of this). Other researchers have invoked the notion of strategy transfer to explain why students who are good readers of their native languages are often good readers of English (Miramontes & Commins, 1989; Saville-Troike, 1984). The successful Latina/o readers in this study demonstrated, albeit rarely, what transfer looks like during reading comprehension. The high degree of conscious introspection necessary to verbalize use of this strategy may be responsible for its scarcity. Another possibility is that because students had so few opportunities to read expository text in Spanish, they had little information to transfer to their English reading.

Marcos demonstrated his declarative knowledge of strategy transfer both during an interview and while reading a text in Spanish, and suggested that this knowledge is easier to learn in one's dominant language:

Marcos: Because let's say there are rules to be a good reader, like you have to read carefully if it's something difficult to read and read however you want if it's easy. And in Spanish...you could learn those rules easier cuz you know more Spanish than English if you are Latin American, but if you are an American...it should be easier in English than in Spanish.

Marcos: Las novas me recuerdan con los libros que leo en inglés, las estrellas. A mi me interesa mucho este artículo. (The novas remind me of the books that I read in English, the stars. I'm very interested in this article.)

Lisa discussed how she made use of knowledge learned in her English reading class to approach Spanish text:

Lisa: Well, one of them [teachers], they taught us how to pronounce a word. [I]f we didn't know how to pronounce that word, she [the teacher] told us, cover up half of the word, try and pronounce the first word, then go back to the last part and try

and pronounce that and then pronounce it all together. And that sometimes helps me in Spanish.

She also indicated how reading strategies could be used across both languages:

[L]ike in English you have to know how to answer the question and in Spanish you have to also know how to answer the question. In English and in Spanish you have to know how to pronounce the words, and like if you don't think a sentence sounds right you have to go back and read it again to make it sound right.

To what extent do the cognitive and metacognitive strategies of successful Latina/o readers differ from those of successful Anglo readers?

On the surface, it is somewhat surprising that the successful Anglo readers commented on comprehension problems less frequently than either type of bilingual reader. In and of itself, the lack of visible monitoring might be construed as a sign that these readers were not comprehending as fully as they should. Closer examination, however, suggests that their lower level of monitoring was more a function of a lack of perceived need to do so. Their passage recalls demonstrated that they comprehended much of what they read, suggesting that they did not find the texts to be particularly difficult. The few times that these readers did note difficulties they resolved them quickly by making inferences and invoking prior knowledge. The successful Anglo readers easily integrated prior knowledge with textual information by drawing upon rich semantic networks and by demonstrating a sensitivity to textual information. Thus, it appears that overt monitoring was less necessary for these students.

Michelle produced the richest think-aloud protocols of the successful Anglo readers, and she differed from the successful Latina/o readers in intriguing ways. She stressed the importance of comprehension and she discussed many important qualities of reading in general. For example, Michelle 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.

Bruce provided an example of how well-developed vocabulary knowledge interacts with prior knowledge when he referred to the biologist in the story "The King of the Beasts" as a professor. Likewise, Tricia called him an archaeologist. Their behavior indicated that they possessed a sophisticated semantic knowledge base that was

not demonstrated by the successful Latina/o readers. Michelle possessed keen insight about the desirability of invoking prior knowledge:

> 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.

The successful Anglo readers checked the fit of their inferences by making sure that they did not conflict with textual information. In this they were similar to the successful Latina/o readers. They differed in that they were more likely to be concerned with detail. For example, Bruce said that the characters in the English narrative text were in a tank, but then revised his understanding by stating that they were near a tank. The prepositions *in* and *near* can change the meaning of a text. It was this level of detail that distinguished the Anglo students as superior readers as compared to the successful Latina/o readers. While there were qualitative differences between the two groups of successful readers in terms of the types and sophistication of prior knowledge connections, both groups used the strategy with approximately the same frequency.

The strategy, focusing on vocabulary, was conspicuously absent in the thinking aloud of the successful Anglo readers. A case can be made that the successful Anglo readers did not need this strategy as much as the successful Latina/o readers. While the successful Latina/o readers may be more sensitive to the need to define and comprehend unknown vocabulary, it is probably also true that successful Anglo readers simply know more English vocabulary.

To what extent do the cognitive and metacognitive strategies of successful Latina/o readers differ from those of less successful Latina/o readers?

The less successful Latina/o readers most closely resembled the successful Latina/o readers in their relatively frequent identification of unknown vocabulary items, when compared to the successful Anglo readers, but they also differed in several ways. For example, despite receiving the same instructions as the other readers, they seemed to view finishing the task as more important than comprehension as the goal for reading. Two of the three less successful Latina/o readers, Celina and Catalina, consistently exclaimed, "I'm done" after reading the last word of a text. In contrast, the successful Latina/o readers continued to question their comprehension or to mull over their understanding after their first pass through a text.

The successful Latina/o readers were determined to understand what they read, whereas the less successful Latina/o readers could identify problems (monitor) but did not often resolve them. For example, Celina indicated that she did not recognize the word *wantonly* when reading "The King of the Beasts." Her only concern, though, seemed to be to approximate the pronunciation of the word. After doing so, she abandoned interest in the item:

> Celina: Is this want only?
>
> Investigator: What do you think?
>
> Celina: Yea

The less successful Latina/o readers tended to adopt one interpretation of a text, or part of it, even when presented with contradictory information. Unlike the successful Latina/o readers who were tentative in their inferences and drawing of conclusions, the less successful Latina/o readers often tried to force subsequent text information to fit earlier interpretations. For example, Celina inferred that the unidentified creature in the story "The King of the Beasts" was an animal. She did not revise her comprehension even when faced with explicit textual information to the contrary:

> Celina: Well, it said it's a man and I don't think it was a man cuz a man couldn't be more dangerous than an elephant or a tiger or a bear.

On the few occasions that the less successful Latina/o readers invoked prior knowledge, they were as likely to bring irrelevant prior knowledge to bear on their interpretation of the text as they were to bring relevant prior knowledge. Michael, for example, when reading the "Flea" stated, "I don't know why I got the picture [in my mind] of a wrestling ring." It is impossible to know why he visualized this since no mention of wrestling or a ring occurred in the passage.

Consistent with their goal of finishing rather than comprehending, the less successful Latina/o readers tended towards similar profiles of strategy use across text types and languages. Golinkoff (1975-1976), in a seminal study of cognitive reading strategies, believed that poor readers approach all texts in essentially the same way. The less successful Latina/o readers tended to approach Spanish and English text in essentially the same manner. They only translated when reading Spanish and seldom tapped their prior knowledge when reading Spanish. These two exceptions might be explained by the students' greater English language proficiency. This research extends Golinkoff's findings to show that less successful Latina/o readers not only read narrative and expository text in similar ways, but also failed to adjust

their use of strategies when reading texts in their two languages.

Some interesting differences surfaced between the two groups of bilingual readers with respect to their views of bilingualism. The less successful Latina/o readers were more apt to see bilingualism as damaging than were the successful Latina/o readers. Michael, for instance, said that children learning English as a second language were much more likely to be in the lower reading group than native-English speakers. The less successful readers felt that as second-language learners, knowledge of their first language caused them confusion when reading. For example, Celina said that native speakers of English had an advantage over native Spanish speakers and remarked, "I get mixed up because I talk Spanish and English."

The less successful Latina/o readers believed that the two languages were more different than similar and that knowledge of one was not useful for reading the other. Catalina mentioned that the vowel sounds in Spanish and English were not the same. This belief may have been one of the reasons why the less successful readers did not make appreciable use of the bilingual strategies. Because they saw the two languages as distinct, they failed to make connections. They did not search for cognates or actively transfer knowledge and strategies. They very occasionally translated Spanish to English when they read in Spanish.

Limitations of the study

Unquestionably the small population of students, the type of students, and the narrow range of texts limit the generalizability of the current study. We cannot be sure that our findings would extend to other bilingual populations or other textual content. The qualitative focus of the study required the collection of a large amount of data from relatively few participants. Because the participants represented particular combinations of background experiences and literacy abilities, the findings are limited.

Second, the materials used were chosen on the basis of certain desirable characteristics, such as length, appeal to young readers and, most important, whether they were intact passages that had not been specially constructed for experimentation. Consequently, it is entirely possible that different texts would have produced different results. We also made a conscious decision to use the same texts with all three achievement groups. We could have chosen to use *level-appropriate* texts. Had we done so, we might have found greater strategy use by the less successful Latina/o students and, perhaps, by the high achieving Anglo group; however, this would have made it more difficult to compare the three groups.

Third, this study looked at the bilingual reading performance of Spanish-English bilingual students. As is well known, Spanish and English are related languages. Whether the findings of this study are transferable to other bilingual populations is not known. Other linguistic groups may well exhibit different patterns of reading performance. They may, for instance, develop and make use of other cognitive and metacognitive strategies, especially if they employ scripts that are non-Roman in origin (Taylor & Taylor, 1983).

Conclusions

Summary of findings: Opportunities and obstacles

Various opportunities, as well as obstacles surfaced for the successful and less successful Latina/o readers as they read texts in Spanish and English. Opportunities arose for the successful Latina/o readers when they identified comprehension problems and then tried to resolve them using a variety of strategies. The strategies of invoking prior knowledge, inferencing, questioning, using context, and monitoring were notable in this regard. Hosenfeld (1978) and Vygotsky (1962) speculated that bilingual persons might have a special awareness of language and its functions.

Evidence from this study suggests that successful Latina/o readers possess an enhanced awareness of the relationship between Spanish and English, and that this awareness leads them to use successfully the bilingual strategies of searching for cognates, transferring, and translating. The awareness that reading in Spanish or English is essentially the same activity and that knowledge of both languages can enhance comprehension was an opportunity seized by the successful Latina/o readers, especially when reading their less-dominant language, Spanish.

Obstacles, although more prevalent in the thinking of the less successful Latina/o readers, also caused problems for the successful Latina/o readers. The chief obstacle for both groups was unknown vocabulary. The successful Latina/o readers dealt with this problem in many ways. Searching for cognates was one way they turned an obstacle into an opportunity. Even so, not all vocabulary difficulties could be overcome. The less successful Latina/o readers faced the obstacle of not knowing what the goal of reading was. Although they often monitored problems, they were unsure of how to resolve them.

Finally, the less successful Latina/o readers did not know how to use knowledge of Spanish to enhance their comprehension of English text and vice versa. Some of these problems may be reflected within the general pop-

ulation of Latina/o students in the low overall levels of academic achievement (Espinosa & Ochoa, 1986).

The successful Anglo readers did not evidence a need to determine the meaning of unknown vocabulary. They also often invoked prior knowledge that facilitated text comprehension. In many ways, they faced a different task when reading than did either group of bilingual readers. They were able to devote more attention to comprehension because they did not face as difficult a task.

Implications for research and practice

Less successful Latina/o readers may need opportunities to learn about the similarities between the writing systems of their two languages. Future research could explore what occurs when less successful Latina/o readers are given this information. Less successful Latina/o readers may be closing off a vast warehouse of potential prior knowledge by not accessing information gained via their dominant language. Research is needed to examine under what conditions bilingual readers are prepared to transfer information learned in one language to the reading of another.

The research of Goldman et al. (1984) and Moll et al. (1980) suggests that bilingual Latina/o students profit from instructional environments that promote and encourage access to their Spanish language strengths. The more successful Latina/o students in this research found ways to make these connections on their own.

This research suggests that educators might want to learn more about the value of focusing bilingual Latina/o students' attention on the relationships between English and Spanish. While bilingual students need to know everything about learning vocabulary that monolingual students do, they may also need to be made aware of additional resources they possess, and special problems they face as second-language learners. For example, they probably need reassurance that not knowing some English vocabulary is to be expected. Recognition that a word is unknown is a special kind of monitoring activity. Because it is not necessary to know the meaning of every word in a text to successfully comprehend it, bilingual readers will need to determine the relative importance of unknown words. When the meanings of unknown words are deemed necessary for comprehension, bilingual readers will need appropriate strategies for making sense of them. Learning efficient use of context, how to invoke relevant prior knowledge, and how to make inferences could contribute to their comprehension abilities.

The strategy of searching for cognates possesses obvious potential for bilingual readers to learn unknown vocabulary. Use of the unknown word's spelling, comparing the sound of the unknown word to known words

in the other language's lexicon, and finally testing the meaning of words that look and sound similar from the other language are all possibilities for constructing meaning that draw on the strengths of bilingual students.

Successful readers can often demonstrate possession of metalinguistic knowledge in both its declarative and procedural forms (Gombert, 1992). The successful Latina/o readers knew more about the relationship between their two languages, and they knew more about how to put that knowledge into action than did the less successful Latina/o readers. Finding ways to help bilingual Latina/o children understand similarities and differences between Spanish and English print could benefit their reading comprehension.

Teachers might also benefit from an awareness of the benefits of transfer, and an understanding of how native language reading ability can facilitate English language literacy. Transfer of strategies appears to compensate for lack of language proficiency (cf. Langer et al., 1990). The successful Latina/o readers implemented reading strategies differently depending on the language of the text probably due to their often greater English-language proficiency, but Carrell (1989) also found that bilingual adult readers modified their strategic processing depending on which language they were reading. Discussions of how the language of a text affects one's reading comprehension might serve as important a function as discussions of genre, text length, and one's purpose for reading.

Language translation appears to have facilitated the reading comprehension of the more successful Latina/o readers. At times, however, translating may harm comprehension. Excessive use of any strategy can harm students' construction of meaning, but further research may establish that translating requires more cognitive resources than do others. Such a view has long been the common wisdom in the field of second-language teaching (Grellet, 1981; Twadell, 1973). Translating may make more sense during the initial period of learning English.

The idea of knowledge transfer is often touted as justification for bilingual education, yet seldom are specific mechanisms made available to educators and others working with language minority students. Emphasizing the relationship between Spanish and English can provide Latina/o students specific information, such as vocabulary knowledge, but it may also help them view their native language as an important source of information. Miramontes and Commins (1989) believed that a metacognitive component might be necessary for effective transfer of information. This research indicates that the more successful Latina/o readers often could describe the benefits of cross-linguistic transfer. At any rate, these relationships, understood to some degree by successful

Latina/o readers, may need to be made more explicit for all students. Knowing what opportunities are available and what obstacles await the unwary should benefit both bilingual readers and those who teach them.

One final comment for those who are tempted to say, "Yes, but...." We recognize that translation, cognate awareness, and information transfer are strategies that are unique to bilingual reading. There is no reason for even the least strategic of monolingual readers to invoke them. We agree, but we are tempted to respond in kind with our own, "Yes, but...." And we would go on to assert that finding and nurturing the unique strengths of successful bilingual readers can go a long way toward developing positive pedagogical and research traditions for the close to 32 million people in the U.S. who speak a non-English language and the 9.9 million school-aged children from linguistically diverse backgrounds (NABE, 1993; Waggoner, 1994).

REFERENCES

ANDERSON, R.C., & PEARSON, P.D. (1984). A schema-theoretic view of basic processes in reading. In P.D. Pearson (Ed.), *Handbook of reading research* (pp. 255-292). New York: Longman.

ARMBRUSTER, B.B., & ANDERSON, T.H. (1985). Frames: Structures for informative text. In D.H. Jonassen (Ed.), *The technology of text* (Vol. 2, pp. 90-104). Englewood Cliffs, NJ: Educational Technology Publications.

ASIMOV, I., GREENBURG, M.H., & WAUGH, C. (1982). *Mad scientists.* Milwaukee, WI: Raintree.

AUGUST, D., & GARCÍA, E.E. (1988). *Language minority education in the United States.* Springfield, IL: Charles C Thomas.

BAKER, L., & BROWN, A.L. (1984). Metacognitive skills and reading. In P.D. Pearson (Ed.), *Handbook of reading research* (pp. 353-394). New York: Longman.

BLOCK, E. (1986). The comprehension strategies of second language readers. *TESOL Quarterly, 20,* 463-494.

CARRELL, P.L. (1989). Metacognitive awareness and second language reading. The *Modern Language Journal, 73,* 121-134.

CASANAVE, C.P. (1988). Comprehension monitoring in ESL reading: A neglected essential. *TESOL Quarterly, 22,* 283-302.

Children's Britannica (1988). Engraving to freshwater life. Chicago: Encyclopædia Britannica.

COLLIER, V.P. (1987). Age and aquisition of second language for academic purposes. *TESOL Quarterly, 21,* 617-641.

DELGADO-GAITAN, C. (1990). *Literacy for empowerment: The role of parents in children's education.* New York: Falmer Press.

ERICSSON, K.A., & SIMON, H.A. (1980). Verbal reports as data. *Psychological Review, 87,* 215-251.

ERICSSON, K.A., & SIMON, H.A. (1984). *Protocol analysis: Verbal reports as data.* Cambridge, MA: MIT Press.

ESPINOSA, R., & OCHOA, A. (1986). Concentration of California Hispanic students in schools with low achievement: A research note. *American Journal of Education, 95*(1), 77-95.

FAVREAU, M., & SEGALOWITZ, N.S. (1982). Second language reading in fluent bilinguals. *Applied Psycholinguistics, 3,* 329-341.

FISHMAN, J.A. (1987). What is happening to Spanish on the U.S. mainland? *Ethnic Affairs, 1,* 12-23.

GARCÍA, G.E., PEARSON, P.D., & JIMÉNEZ, R. (1994). *The at-risk situation: A synthesis of the reading literature* (Special Report).

Urbana-Champaign: University of Illinois, Center for the Study of Reading.

GARCÍA, G.E. (1988). *Factors influencing the English reading test performance of Spanish-English bilingual children.* Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign, Champaign, IL.

GARCÍA, G.E. (1991). Factors influencing the English reading test performance of Spanish-speaking Hispanic children. *Reading Research Quarterly, 26,* 371-392.

GARNER, R. (1987). *Metacognition and reading comprehension.* Norwood, NJ: Ablex.

GLASER, B.G., & STRAUSS, A.L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago: Aldine.

GOETZ, J.P., & LECOMPTE, M.D. (1984). *Ethnography and qualitative design in educational research.* Orlando, FL: Academic Press.

GOLDMAN, S.R., REYES, M., & VARNHAGEN, C.K. (1984). Understanding fables in first and second languages. *NABE Journal, 8,* 835-866.

GOLINKOFF, R.M. (1975-1976). A comparison of reading comprehension processes in good and poor comprehenders, *Reading Research Quarterly, 11*(4), 623-659.

GOMBERT, J.É. (1992). *Metalinguistic development.* Chicago: University of Chicago Press.

GOODMAN, K.S. (1984). Transactional psycholinguistic model. In A.C. Purves & O. Niles (Eds.), *Becoming readers in a complex society.* 83rd yearbook of the National Society for the Study of Education, Part 1 (pp. 79-114). Chicago: University of Chicago Press.

GRELLET, F. (1981). *Developing reading skills: A practical guide to reading comprehension exercises.* Cambridge, UK: Cambridge University Press.

HARTMAN, D.K. (1995). Eight readers reading: The intertextual links of able readers using multiple passages. *Reading Research Quarterly, 30,* 520-561.

HOSENFELD, C. (1978). A preliminary investigation of the reading strategies of successful and nonsuccessful second language learners. *System, 5*(2), 110-123.

HYMES, D. (1972a). Models of the interaction of language and social life. In J.J. Gumperz (Ed.), *Directions in sociolinguistics* (pp. 35-71). New York: Holt, Rinehart & Winston.

HYMES, D. (1972b). Toward ethnographies of communication: The analysis of communicative events. In P.P. Giglioli (Ed.), *Approaches to sociolinguistics* (pp. 21-44). New York: Penguin.

IANCO-WORRALL, A.D. (1972). Bilingualism and cognitive development. *Child Development, 43,* 1390-1400.

JIMÉNEZ, R.T., GARCÍA, G.E., & PEARSON, P.D. (1995). Three children, two languages, and strategic reading: Case studies in bilingual/monolingual reading. *American Educational Research Journal, 32*(1), 31-61.

KODA, K. (1988). Cognitive process in second language reading: Transfer of L1 reading skills and strategies. *Second Language Research, 4*(2), 133-156.

LAMBERT, W.E., & TUCKER, G.R. (1972). *Bilingual education of children: The St. Lambert experiment.* Rowley, MA: Newbury House.

LANGER, J.A., BARTOLOMÉ, L., VÁSQUEZ, O., & LUCAS, T. (1990). Meaning construction in school literacy tasks: A study of bilingual students. *American Educational Research Journal, 27,* 427-471.

LEE, J.F. (1986a). Background knowledge and L2 reading. *The Modern Language Journal, 70,* 350-354.

LEE, J.F. (1986b). On the use of the recall task to measure L2 reading comprehension. *Studies in Second Language Acquisition, 8,* 201-212.

MACK, M. (1984). Early bilinguals: How monolingual-like are they? In M. Paradis & Y. Lebrun (Eds.), *Early bilingualism and child devel-*

opment (pp. 161-173). Lisse: Swets & Zeitlinger.

MÄGISTE, E. (1979). The competing languages systems of the multilingual: A developmental study of decoding and encoding processes. *Journal of Verbal Learning and Verbal Behavior, 18*(1), 79-89.

MCNEIL, J.D. (1987). *Reading comprehension.* Glenview, IL: Scott, Foresman.

MIRAMONTES, O., & COMMINS, N.L. (1989, April). *A study of oral and reading proficiency of mixed-dominant Hispanic bilingual students.* Paper presented at the Annual Convention of the American Educational Research Association, New Orleans, LA.

MOLL, L.C. (1988). Some key issues in teaching Latino students. *Language Arts, 65,* 465-472.

MOLL, L.C., ESTRADA, E., DÍAZ, E., & LOPES, L.M. (1980). The organization of bilingual lessons: Implications for schooling. *The Quarterly Newsletter of the Laboratory of Comparative Human Cognition, 2*(3), 53-58.

NABE. (1993). Census reports sharp increase in number of non-English language speaking Americans. *NABE News, 16*(6), 1; 25.

NAGY, W.E. (1988). *Vocabulary instruction and reading comprehension* (Tech. Rep. 431). Champaign, IL: Center for the Study of Reading, University of Illinois.

OLSON, G.M., DUFFY, S.A., & MACK, R.L. (1984). Thinking-out-loud as a method for studying real-time comprehension processes. In D.E. Kieras & M.A. Just (Eds.), *New methods in reading comprehension research* (pp. 253-286). Hillsdale, NJ: Erlbaum.

ORTIZ, V. (1986). Reading activities and reading proficiency among Hispanic, black and white students. *American Journal of Education, 95*(1), 58-76.

PADRÓN, Y.N., KNIGHT, S.L., & WAXMAN, H.C. (1986). Analyzing bilingual and monolingual students' perceptions of their reading strategies. *The Reading Teacher, 39,* 430-433.

PALLAS, A., NATRIELLO, G., & MCDILL, E. (1989). The changing nature of the disadvantaged population: Current dimensions and future trends. *Educational Researcher, 18*(5), 16-22.

PARIS, S.G., LIPSON, M.Y., & WIXSON, K.K. (1983). Becoming a strategic reader. *Contempory Educational Psychology, 8,* 293-316.

PARIS, S.G., WASIK, B.A., & TURNER, J.C. (1991). The development of strategic readers. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research: Volume II* (pp. 609-640). New York: Longman.

PEARSON, P.D., & GREER, E.A. (1992). Helping your students prepare for the 1992 Illinois reading assessment. *Illinois Reading Council Journal, 20*(1), 14-18.

PEARSON, P.D., & JOHNSON, D. (1978). *Teaching reading comprehension.* New York: Rinehart & Winston.

PEARSON, P.D., ROEHLER, L.R., DOLE, J.A., & DUFFY, G.G. (1992). Developing expertise in reading comprehension. In S.J. Samuels & A.E. Farstrup (Eds.), *What research has to say about reading instruction* (pp. 145-199). Newark, DE: International Reading Association.

PEARSON, P.D., & VALENCIA, S.W. (1986). *Interim report on the development of the IGAP reading assessment.* Springfield, IL: Illinois State Board of Education.

PÉREZ, B., & TORRES-GUZMAN, M.E. (1992). *Learning in two worlds.* New York: Longman.

PITTARO, J.M. (1964). *Cuentos y más cuentos.* Boston: D.C. Heath.

PRITCHARD, R. (1990, December). *Reading in Spanish and English: A comparative study of processing strategies.* Paper presented at the the National Reading Conference, Miami, FL.

ROEBER, E.D., KIRBY, C.S., DUTCHER, P.A., & SMITH, R.L.C. (1987). *Michigan educational assessment program: Blueprint for new MEAP reading test.* Lansing, MI: Michigan Department of Education.

RUBIN, J. (1975). What the "good language learner can teach us."

TESOL Quarterly, *9*(1), 41-51.

SAVILLE-TROIKE, M. (1982). *The development of bilingual and bicultural competence in young children. Current topics in early childhood education*. Norwood, NJ: Ablex.

SAVILLE-TROIKE, M. (1984). What really matters in second language learning for academic achievement. *TESOL Quarterly, 18*, 199-219.

SO, A.Y., & CHAN, K.S. (1984). What matters? The relative impact of language background and socioeconomic status on reading achievement. *NABE Journal, 8*(3), 27-41.

STEINBERG, L., BLINDE, P.L., & CHAN, K.S. (1984). Dropping out among language minority youth. *Review of Educational Research, 54*(1), 113-132.

SUND, R.B., ADAMS, D.K., HACKETT, J.K., & MOYER, R.H. (1985). *Estrellas especiales. Enfasis en la ciencia* (pp. 198-199). Columbus, OH: Merrill.

TAYLOR, I., & TAYLOR, M.M. (1983). *The psychology of reading*. New York: Academic Press.

TWADELL, F. (1973). Vocabulary expansion in the TESOL classroom. *TESOL Quarterly, 7*(1), 61-78.

VALENCIA, S.W., & GREER, E.A. (1986). *Holistic scoring criteria for narrative and expository retellings*. Unpublished manuscript, University of Illinois at Urbana-Champaign, Center for the Study of Reading.

VYGOTSKY, L.S. (1962). *Thought and language*. Cambridge, MA: MIT Press.

WAGGONER, D. (1991). *Undereducation in America: The demography of high school dropouts*. New York: Auburn House.

WAGGONER, D. (1994). Language-minority school-age population now totals 9.9 million. *NABE News, 18*(1), 1; 24-26.

WEBER, R.M. (1991). Linguistic diversity and reading in American society. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research, Volume II* (pp. 97-119). New York: Longman.

The World Book Encyclopedia (1988). N-O. Chicago: World Book.

APPENDIX A
Unprompted English narrative passage "The King of the Beasts" by 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."

APPENDIX B
Student interview

1. What is reading?

2. Why do people read?

3. What does a person have to learn to be a good reader?

4. What is different about a person who is a good reader from someone who is not?

5. What is different about the reading of a person who has learned English as a second language compared to someone whose first language is English?

6. Could knowing both Spanish and English help someone to be a better reader or would it cause problems? Why?

7. Does being able to read in English help when you read Spanish? How?

8. Does being able to read Spanish help when you read English? How?

9. Have you ever learned how to do something to better understand your English reading that you later used when reading Spanish? What?

10. Have you ever learned how to do something to better understand your Spanish reading that you later used when reading English? What?

11. Do you ever translate from one of your languages to the other when reading English or Spanish? Describe it to me.

12. How is reading Spanish different from reading English? Vice versa?

13. What does a person need to know to be a good English reader?

14. What does a person need to know to be a good Spanish reader? Is there any difference?

15. How did you become a good reader? In Spanish? In English?

APPENDIX C
Definitions and examples of reading strategies used by bilingual readers

Text-initiated strategies

1. *Focusing on vocabulary.* This strategy involved focusing attention on unknown vocabulary items. The main thrust of this strategy was to identify problematic items; resolution of the difficulty was categorized as some other strategy—often accessing cognates or using context. Use of this strategy usually involved overlap with at least one other category, often that of monitoring. The subjects would indicate that such and such was a word they did not understand. An example follows:

> No sé que es la palabra *palidece.* Será que brilla o algo, no sé *palidece,* o sea o quizás, no sé,... (I don't know what the word *palidece* [dims] is. It might be shines or something, I don't know *palidece,* or is it, or maybe, I don't know, ...)

2. *Using context.* The use of context as a strategy usually involved an attempt to determine the meaning of a word or a difficult portion of the text by searching for nearby relevant information. An example follows:

> Let's see, *wantonly...* Probably they were killed because people didn't know they were killing them, they just didn't know they were gonna exterminate them so probably because the next sentence it says that, I'm trying as it were... I'm trying as it were to make, Oh! OK, so he wants to do this because people, he thinks people were like really mean and stupid and everything, now I know.

Interactive strategies.

1. *Inferencing.* Goodman (1984) described inferencing as educated guessing. Anderson and Pearson (1984) viewed inferencing as a major component within a schema theoretical framework. They saw inferencing as the mechanism that allows one either to supply missing information usually from prior knowledge (script-implicit), or to establish intertextual connections, that are not explicitly found or stated within a text (text-implicit). Inferencing, then, can be of two types, text-implicit or script-implicit (see Pearson & Johnson 1978); both are categorized here as inferencing. Many of the inferences observed in this study were prefaced with the words, "I guess," "probably," "maybe," or "I think." An example follows:

> And now they have these, tiger cubs. I don't know how they get them there because when they get bigger they'll be really protective of their area and they'll probably have to release them in a real open area because it would love to roam around.

2. *Questioning.* The strategy of questioning involved self-interrogation. Often the use of questioning meant that the subject had recognized and acknowledged the presence of an obstacle to comprehension. Questioning and monitoring were closely associated. The question, in effect, was the identification or setup of the problem at hand. An example follows:

> That's weird, why would a man need to take care of, I mean why would someone like a man need to be taken care of by someone like a biologist?

Reader-initiated strategies

1. *Invoking prior knowledge.* The strategy of invoking prior knowledge involved bringing to bear previously learned information into the service of comprehending the text at hand. For the most part, this meant schema activation of relevant knowledge structures. An example follows:

> It's true, porque 100 times the length of its own body, 100 times, el hombre todavía no ha hecho eso, un hombre todavía no ha brincado 100 times its length. Entonces este brincar eso, pues, tiene unas piernas poderosas, lo cual es cierto acá. (It's true, because 100 times the length of its own body, 100 times. Mankind hasn't been able to do that, a man couldn't jump 100 times its length. So then, to jump that, well, it must have powerful legs, that much is certain here.)

2. *Monitoring.* This strategy included any recognition that comprehension had not occurred or had failed. On occasion the students also confirmed that their understanding was in fact correct. Verbalization of this strategy often took the form of the subject simply stating that he or she did not understand something. An example follows:

(continued)

APPENDIX C *(cont'd.)*
Definitions and examples of reading strategies used by bilingual readers

Estoy pensando que debo de ir a buscar a ver si, um, de, sé que es una estrella pero voy a buscar una palabra acá que no sé que es. (I'm thinking that I should go and look to see if, I know what a star is but I'm going to look for a word here that I don't know).

3. *Demonstrating awareness.* This metacognitive strategy involved verbalization of knowledge that students possessed of themselves as readers, of the task of reading, or of the usefulness of different reading strategies. The following example contains elements of self-knowledge and strategic knowledge:

Now sometimes I get mixed up when I'm reading. I start here and I kind of learn something, so I go back over it.... See it says there's 50 kinds of octopuses and they're mostly as big as your fist. I always thought they would be larger. I imagine octopuses as really humongous things, so I go over that so I can remember that. Then I go over how much they measure. OK.

Bilingual strategies*

4. *Searching for cognates.* This was the strategy of consciously drawing upon the lexicon in one language in order to comprehend, or more fully comprehend, a text that contains cognate or related vocabulary. This strategy required that its user possess at least tacit knowledge of the relationship that exists between the Spanish and English languages. An example of this follows:

Like from the Greek, *octopus*, eight, eight, like in Spanish ocho pies, octopus. *Pus* might be pies and *octo* eight.

5. *Translating.* Translating within the context of reading refers to the strategy of paraphrasing parts of a text via the bilingual's other language for the purpose of clarification:

Y luego acá dice se desaparece y se forma un *agujero negro* y esas dos palabras se oyen como black hole, como sig, porque *agujero* it's like a hole and *negro* is black, and it has to be black hole. (And then it says that it disappears and forms an *agujero negro* and those two words sound like black hole, and then what follows, because *agujero* it's like a hole and negro is black, and it has to be black hole.)

6. *Transferring.* Readers consciously accessed information gained from experience, text, or instruction in one of their languages for use when processing text in their other language. An example of this follows:

Las novas me recuerdan con los libros que leo en inglés, las estrellas. (The novas remind me of the books that I read in English, the stars.)

**Reader-invitiated strategies used only by the bilingual readers